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ABSTRACT

This monograph contains the instruments designed or modified by the research staff of the Urban Systemic Initiative (USI) during the course of the evaluation research grant from the National Science Foundation (NSF). Because the project was designed to determine the impact of USI reform in four cities and to test the NSF Six-Driver model for reform, it was necessary to create instruments that would elicit information to meet both research goals. The document is organized into three sections corresponding to the three studies that constitute the scope and focus of the research. There are three studies (the Math and Science Attainment Study, the Study of the Enacted Curriculum, and the Policy Study), but the Policy Study is made up of multiple studies related to policy. All of the instruments in this collection were designed to measure aspects of the NSF's six project drivers or to support the collection of data related to the drivers (e.g., cover letters for studies). Instruments, which include observation protocols, surveys, interview protocols, and focus group guides, are grouped into: (1) informed consent letters and documents; (2) statements about confidentiality and protection of participants; (3) the Mathematics/Science Attainment Study; (4) the Study of the Enacted Curriculum; and (5) the various aspects of the Policy Study. (Contains 10 references.) (SLD)

Research Monograph Number One: Instrumentation

Assessing the Impact of the National Science Foundation's Urban Systemic Initiative

Compiled and Edited by
Bridget McCourt
M. Yvette Baber

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Acknowledgments

The creativity, imagination, and experience of the 1999-2000 and the 2000-2001 Research Team shaped the design of many of the instruments described in this monograph.

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INTRODUCTION

This monograph contains the instruments designed or modified by the USI research staff during the course of the evaluation research grant from the National Science Foundation. Because the project was designed both to determine the impact of USI reform in four cities and to test the NSF Six-Driver model for reform, it was necessary to create instruments that would elicit information to meet both research goals.

This document is organized in three sections corresponding to the three studies that constitute the scope and focus of our research. Although there are three studies, the Math and Science Attainment Study; the Study of the Enacted Curriculum; and the Policy Study, the policy study is actually multiple studies that are all related to policy (i.e. Principals, District Administrators, Professional Development, Stakeholder Mobilization, and the Community Context). All of the instruments were designed to measure aspects of NSF's six drivers:

Driver 1. Implementation of comprehensive, standards-based curricula as represented in instructional practice, including student assessment, in every classroom, laboratory, and other learning experience provided through the system and its partners.

Driver 2. Development of a coherent, consistent set of policies that support: provision of high quality mathematics and science education for each student; excellent preparation, continuing education, and support for each mathematics and science teacher (including all elementary teachers); and administrative support for all persons who work to dramatically improve achievement among all students served by the system.

Driver 3. Convergence of the usage of all resources that are designed for or that reasonably could be used to support science and mathematics education-- fiscal, intellectual, material, curricular, and extra-curricular-- into a focused and unitary program to constantly upgrade, renew, and improve the educational program in mathematics and science for all students.

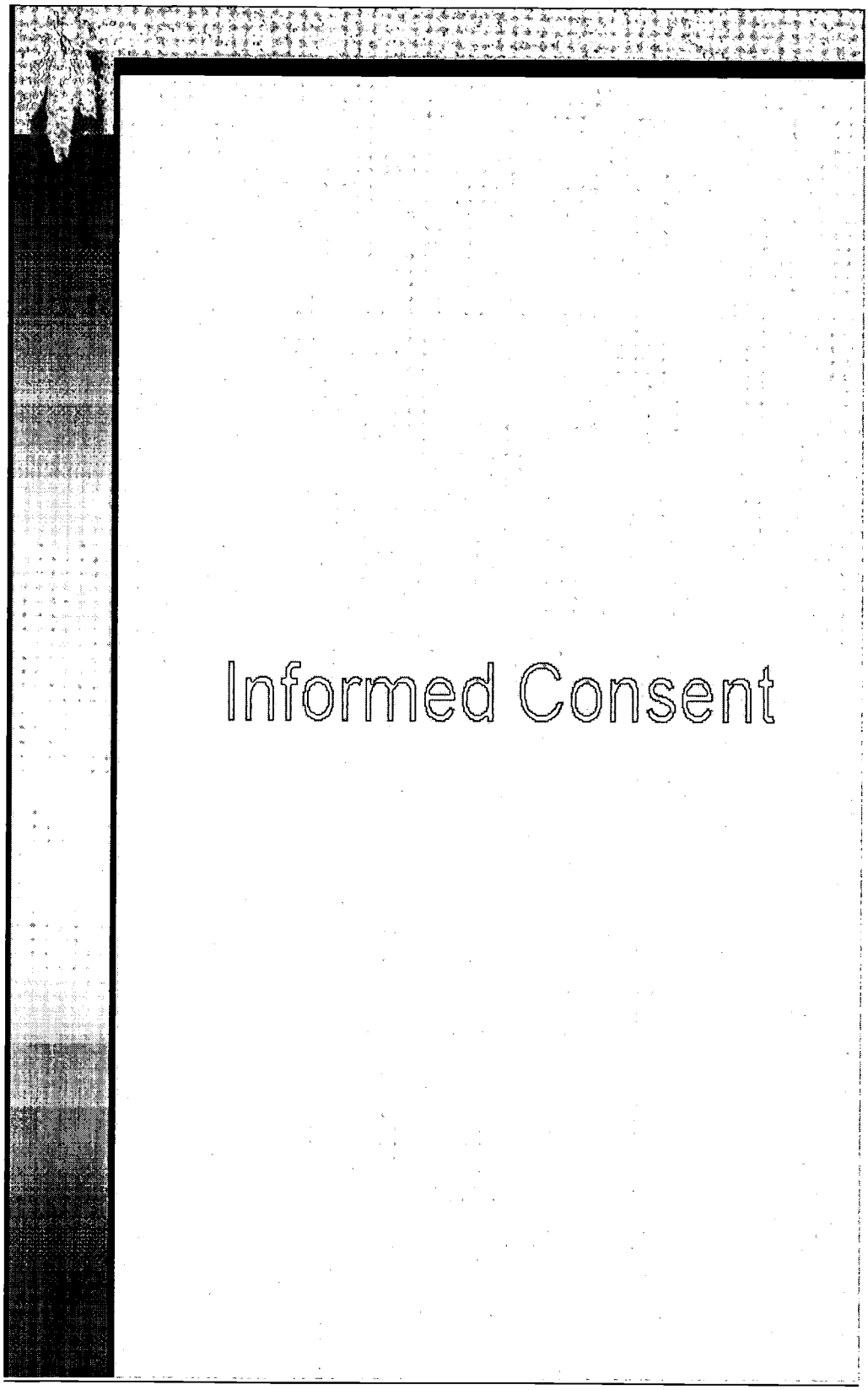
Driver 4. Broad-based support from parents, policymakers, institutions of higher education, business and industry, foundations, and other segments of the community for the goals and collective value of the program, based on rich presentations of the ideas behind the program, the evidence gathered about its successes and its failures, and critical discussions of its efforts.

Driver 5. Accumulation of a broad and deep array of evidence that the program is enhancing student achievement, through a set of indices that might include achievement test scores, higher level courses passed, college admission rates, college majors, Advanced Placement Tests taken, portfolio assessment, and ratings from summer employers, and that demonstrate that students are generally achieving at a significantly higher level in science and mathematics.

Driver 6. Improvement in the achievement of all students, including those historically underserved.

Dr. M. Yvette Baber and Bridget McCourt have done the research community a tremendous service by organizing this monograph. We all hope that these instruments will be modified and used by researchers who share a commitment to strengthening our public schools.

Kathryn M. Borman, Principal Investigator
Gladis Kersaint, Co-Principal Investigator



Informed Consent

Informed Consent

This study received approval from the University of South Florida Division of Research Compliance in June 1999. In fall 1999 and spring 2000, teachers received letters informing them of the purposes of the study and confidentiality procedures. They were asked to voluntarily participate in the research. Teachers gave signed consent for classroom observations, focus groups, and survey responses.

In the spring 2000 wave of research, parents received a separate informed consent letter for the student survey portion of the Study of the Enacted Curriculum. This letter was also translated into Spanish.

Also in spring 2000, faculty in the participating schools received an informed consent form for the School Culture Quality Survey (SCQS). District administrators were also sent an informed consent letter requesting their participation in an interview and the SCQS.

During the fall 2000 and spring 2001 research, additional consent forms were approved for student participation in the Student Engagement Study. These documents were translated into Spanish and Haitian Creole to accommodate the linguistic needs of parents and guardians.

Respondents in the fall 2000 and spring 2001 Study of the Community Context received a one-sheet explanation of the research and their confidentiality rights. They provided signed consent at the top of the interview protocol at the time of the interview.

Teacher Consent Form – Fall 1999
USF Institutional Review Board-Behavioral/Social
Consent to Participate in a Research Study

Title of Study: Assessing the Impact of the National Science Foundation's Urban Systemic Initiative

Principal Investigator Name: Kathryn M. Borman Telephone # 974-9058
Department David C. Anchin Center Mail-point EDU 162 Tel # 974-5959

Other Research Staff: Susan D. Greenbaum, Ph.D; Gladis Kersaint, Ph.D. ;Edward J. Glickman, Ph.D.;Sandra L. Cade; M.A.T.; Graduate Research Associates [Ellen Puccia, Linda Callejas, Cathleen Larrimore, Bridget McCourt, Danielle O'Connor, Jessica Pearlman, Christiana Schumann, Julian Smothers]

Study Location(s): Chicago, IL; El Paso, TX; Memphis, TN; Miami, FL.

Purpose of Study
The purpose of this research study is to determine the impact of USI reforms in four sites: Chicago, El Paso, Memphis, and Miami. The study will determine how reforms in curriculum and instruction affect teacher and student outcomes at the classroom level (with standards-based curriculum in math and science). The study will also investigate the impact of USI reform on policy, assessment, standards, and relationships with community and businesses.

Duration and Location of the Study
Your participation in this study will last for approximately 1 – 6 hours and will take place at sites in Chicago___ El Paso___ Memphis___ Miami___

The number of other people that might participate in this study is: 7200 school aged children and 700 adults.

Procedures
You understand that during this study, the following procedures will occur.
You will either: 1) be interviewed by a project researcher, 2) complete a survey related to the goals of the course, or 3) be part of a classroom observation

Potential Risks
You understand that there are no anticipated risks associated with the study from your participation in this study.

Benefits
You understand that there will be no direct benefits of your participation in this study, but there may be possible benefits to others that may include findings that contribute to the improvement of instruction and professional development at the school-site and district level. The results of the research should also be applicable to other USI sites in the United States.

Confidentiality
The confidentiality of the records shall be maintained unless otherwise required by law. Confidentiality of records will be maintained by assigning pseudonyms to interviewees, assigning codes to tape-recorded interviews and their transcripts. Only USI research project staff will have access to the data. The project will secure all files in the David C. Anchin Center (College of

Education). At the end of the project, tapes will be erased and non-essential files will be destroyed in order to protect the confidentiality of research subjects.

Compensation for Participation
You will not be paid for participation in this study.

Volunteering to Be Part of this Research Study
You understand that participation in this study is voluntary. You understand that you may withdraw from the study at any time without penalty or loss of services, to which you are otherwise entitled. You also understand that the investigator has the right to remove you from the study at any time.

Questions and Contacts
If you have any questions about this research study, you may contact **Dr. Kathryn Borman at the University of South Florida in Tampa (813-974-9058).** If you have any questions about your rights as a person taking part in a research study, you may contact a member of the Division of Compliance Services at the University of South Florida at (813) 631-4498.

Your Consent—By signing this form I agree that:

- I have fully read or have had read and explained to me in my native language this informed consent form describing a research project.
- I have had the opportunity to question one of the persons in charge of this research and have received satisfactory answers.
- I understand that I am being asked to participate in research. I understand the risks and benefits, and I freely give my consent to participate in the research project outlined in this form, under the conditions indicated in it.
- I have been given a signed copy of this informed consent form, which is mine to keep.

Signature of Participant	Printed Name of Participant	Date
Signature of Witness	Printed Name of Witness	Date

Investigator Statement
I have carefully explained to the subject the nature of the above protocol. I hereby certify that to the best of my knowledge the subject signing this consent form understands the nature, demands, risks and benefits involved in participating in this study.

Signature of Investigator	Printed Name of Investigator	Date

Institutional Approval of Study and Informed Consent

This research project/study and informed consent form were reviewed and approved by the University of South Florida Institutional Review Board for the protection of human subjects. This approval is valid until the date provided below. The board may be contacted at (813) 631-4498.

PARENTAL INFORMED CONSENT – STUDY OF THE ENACTED CURRICULUM

Dear Parent:

Your child's teacher is participating in research *Assessing the Impact of the National Science Foundation's Urban Systemic Initiative* conducted by the Anchin Center of the University of South Florida. The National Science Foundation has implemented Urban Systemic Initiatives in 20 cities to increase student achievement and reduce achievement differences for traditionally underserved students in mathematics, science, and technology. Our project aims at discovering similarities and differences among school sites in four cities and examining the extent to which the National Science Foundation's formula for systemic reform can be made enduring. An important part of the study is to determine how reforms in mathematics and science influence teacher and student outcomes at the classroom level.

A researcher from the University of South Florida will ask all of the students in your child's classroom to voluntarily complete a survey about instructional activities during mathematics or science instruction. This survey usually takes about 30 minutes during class time to complete. Survey topics include student views on homework, problem-solving activities, group work, hands-on materials, and technology. In a several classrooms, a few students may also be interviewed about these topics. These audio-recorded interviews usually take 15 to 20 minutes. We will always make arrangements in advance with the school district office, the principal, and the teacher to ensure that these activities minimally interfere with the regular school day.

Your child's participation is voluntary. Your child is not required to complete the survey or the interview and there will be no penalty or other consequence if you choose not to allow your child to participate. All participants will remain anonymous. To insure anonymity we will not ask for children's names and we will not identify the teacher or the school by name. All tapes will be erased at the end of the study. We know of no negative outcomes from your child's responding to such items and your child may benefit by telling us directly about their school experiences.

If you have additional questions about this study please contact your child's teacher. This study has been approved by the Institutional Review Board of the University of South Florida and is monitored by the Office of Compliance Services. You may contact them at 813-974-5638 and you may also contact Dr. Kathryn Borman at the University of South Florida in Tampa at 813-974-9058. Your son or daughter's participation is greatly appreciated.

If you do not wish for your child to participate, please have your child return this form with your signature below:

I **DO NOT** WISH MY CHILD TO PARTICIPATE IN THIS STUDY EVALUATING THE EFFECTIVENESS OF THE USI GRANT.

Signature of Child	*Printed Name of Child*	*Date*
Signature of Parent	*Printed Name of Parent*	*Date*

FACULTY INFORMED CONSENT- SCHOOL CULTURE QUALITY SURVEY

Dear (Teacher Name):

This letter is asking for your permission to complete a survey for research *Assessing the Impact of the National Science Foundation's Urban Systemic Initiative* conducted by the David C. Anchin Center at the University of South Florida. An important part of the research study is to determine how reform efforts have affected the cultural climate in schools that participated in the National Science Foundation's Urban Systemic Initiative grant.

We are asking you to complete a survey about your perceptions of the climate in your school. The School Culture Quality Survey is an instrument designed to assist in understanding the culture of schools. The instrument contains 36 scored items that are divided into four scales, Shared Vision, Facilitative Leadership, Teamwork, and the Learning Community. Responses will be analyzed and a summary report utilizing charts, graphs, and summarized data that will give a picture of the perceptions of the cultural climate of the school.

This survey usually takes about 30 minutes to complete. Your participation in this research is voluntary and your refusal to participate will not involve any penalty. We do not anticipate any risks resulting from your participation in the study. We will preserve the confidentiality of your participation in the study by not identifying you, other staff members, or your school by name. Your school will receive a copy of the results of the survey and general results will be reported to the National Science Foundation.

If you have any questions about your participation in this research study you may ask the researcher administering the survey, you may contact Dr. Kathryn Borman at the University of South Florida in Tampa at 813-974-9058, and the Office of Compliance Services at 813-974-5638.

Grant # 9874246
School Staff Informed Consent Form

By signing this form I agree that: I have fully read and had explained to me this informed consent form describing this research project.

I have had the opportunity to question one of the persons in charge of this research and have received satisfactory answers.

I understand that I am being asked to participate in research. I understand the risks and benefits, and I freely give my consent to participate in the research project outlined in this form, under the conditions indicated in it.

I have been given a signed copy of this informed consent form, which is mine to keep.

Signature of Participant	**Printed Name of Participant**	**Date**
Signature of Researcher	**Printed Name of Researcher**	**Date**

DISTRICT INTERVIEW/ SCHOOL CULTURE QUALITY SURVEY
INFORMED CONSENT

Dear (District staff):

Your district is participating in research entitled *Assessing the Impact of the National Science Foundation's Urban Systemic Initiative* conducted by the David C. Anchin Center of the University of South Florida. The National Science Foundation has implemented Urban Systemic Initiatives (USI) in 20 cities to increase student achievement and reduce achievement differences for traditionally underserved students in mathematics, science, and technology. Our project aims at evaluating the results of these initiatives, discovering similarities and differences among school sites in four cities and examining the extent to which the National Science Foundation's formula for systemic reform can be made enduring. An important part of the research study is to determine how reform efforts have affected the cultural climate in the district that participated in the National Science Foundation's Urban Systemic Initiative grant.

We hope you will contribute to this multi-city study by participating in an interview about your perceptions of the district's USI and completing a survey about your perceptions of the climate in your district workplace. Research on school reform reveals that teacher perceptions about the climate and collegial relationships in their schools are related to student learning. The School Climate Quality Survey is an instrument designed to assist in understanding the culture of schools impacts reform initiatives. The instrument contains 36 scored items that are divided into four scales, Shared Vision, Facilitative Leadership, Teamwork, and the Learning Community. Responses will be analyzed and a report utilizing charts, graphs, and summarized data that will give a picture of the perceptions of the cultural climate of the school. The survey usually takes about 15 to 30 minutes to complete.

Your participation in this research is voluntary and your refusal to participate will not involve any penalty. All participants will remain anonymous. We will preserve the confidentiality of your participation by not identifying you, other staff members, or schools by name. We know of no negative outcomes from your responding to such items and you may benefit by telling us directly about your workplace climate and experiences with the USI grant. All audio-recorded tapes will be erased after they are transcribed without using names. Your district will receive a copy of the aggregated results of the survey and general results will be reported to the National Science Foundation.

This study has been approved by your school district and by the Institutional Review Board of the University of South Florida and is monitored by the Office of Compliance Services. You may contact them at 813-974-5638 and you may also contact Dr. Kathryn Borman at the University of South Florida in Tampa at 813-974-9058. Your assistance in this project is greatly appreciated.

Parent / Child Consent Form for Student Engagement Study

Dear Parent:

We are asking your permission for your child to participate in a research study to determine the impact of the National Science Foundation's Urban Systemic Initiative reforms in mathematics, science, and technology in four sites, Chicago, El Paso, Memphis, and Miami. The Student Engagement Study wants to find out how students think and feel about the math and science reforms that are taking place in their classrooms. We will also be contacting some of you (the parents) to talk with you about your impressions of the math and science reforms being enacted in your school district.

For the student study we use a method called the Experience Sampling Method. Students will be signaled during the class session and will be asked to fill out a short survey page regarding their level of attention to the classroom instruction and the description of their thinking and activities. We will also conduct focus group interviews with some of the students participating in the study. During the focus group, they will be asked to describe their experiences in the classroom. Parents will be asked for an hour of their time for an interview or small group discussion about math and science in their child's school. Neither you nor your child will be paid for participating in this study. The parent interviews will be tape recorded (with your permission) by the researcher.

You and your child will not directly benefit from this study. However, you will indirectly benefit by information that is produce from the research that is available to stakeholders at all levels (policy makers, administrators, teachers, and parents). There are no anticipated risks involved to being a part of this study. Your decision to allow your child to participate in this research study (or to be interviewed yourself) is completely voluntary. You are free to participate in this research study or to withdraw at any time. You and your child's privacy and research records will be kept confidential to the extent of the law in the David C. Anchin Center (College of Education- USF) to protect your/your child's privacy. We will preserve that privacy by not identifying you, your child, the teacher, or the school by name in reports. Authorized research personnel, employees of the Department of Health and Human Services, and the USF Institutional Review Board may review the records from this research project.

This study has been approved by the Institutional Review Board of the University of South Florida and is monitored by the Division of Research Compliance. Their direct telephone number is 813-974-5638, should you have any questions. Please review this letter carefully and return it, with your signature, to the researcher. If you have any questions about your participation in this research study, you may ask the researcher working on this study, or you may contact Dr. Kathryn M. Borman at the University of South Florida in Tampa at 813-974-5959.

By signing the consent form on the back of this letter, you verify that we have informed you of the project's purpose and that you are allowing your child to participate and agree to being interviewed. Thank you for assisting us with this research study.

PLEASE TURN THIS SHEET OVER FOR THE OFFICIAL CONSENT FORM AND SIGNATURE

Sincerely,

Kathryn Borman, Ph.D., Principal Investigator

Study of the Community Context – Information Sheet for Interviewees
Assessing the Impact of the National Science Foundation's Urban Systemic Initiative
NSF Grant # 9874246

This research is funded by a grant to the University of South Florida and the David C. Anchin Center from the National Science Foundation (Washington, DC). The three-year research grant (1999 - 2001) supports an evaluation of the NSF's Urban Systemic Initiatives in four cities operating USI projects (Chicago, El Paso, Memphis, Miami.) The outcomes of the research in the four cities will be compared, both district-wide and in a sample of elementary and secondary schools in each site.

Research Design

Math and Science Attainment Study (fall and spring 1999 - 2001)

- Analyzes outcome differences in student attainment in science, mathematics, and technology over the duration of NSF's initiatives
- Determines the extent to which attainment differences between traditionally underserved students and their peers have been reduced

Study of the Enacted Curriculum (spring 2000)

- Provides analyses of classroom practices and the curriculum in mathematics and science in relation to district-adopted standards and systemic reform goals
- Uses common survey instruments and additional data collection methods across a sample of schools and classrooms in each of the four districts.

Policy Study (1999 - 2001)

- Examines the impact of national, state and local policies on local USI reform efforts
- Examines the extent to which local communities mobilize resources in and outside school to equip students to achieve high standards.
- Three tiered study - 1) policy and resources at the district and local school levels; 2) study of school community context; 3) district and school-level impacts

School Sample

At each of the four sites, twelve schools (elementary, middle/junior, and high schools) and approximately 60 math/science classrooms within those schools were selected. This year's part of the study focuses on two high schools in each site and two teachers (one math and one science) in each of these schools. For one week in each of the high schools, students participate in a Study of Student Engagement during their class periods and in a focus group at the end of the week. Parental consent forms are necessary for students to participate in t his study. There is also a qualitative Study of the Community Context, where partners, stakeholders, parents, community residents, and other individuals are contacted and interviewed regarding their perceptions of the impact of math and science reform on student achievement and attainment in the district and in the individual schools.

Information for Interviewees

We will be asking you a series of questions to determine the level to which partners and stakeholders have been mobilized to support math and science reform at the high school or in the district. We ask your permission to tape the interview, which should last no longer than one hour.

- The first set of questions asks for information about your organization and your responsibilities.
- The second set of questions asks for your perception of the "community" context - what is the community? Do stakeholders and parents/students define community the same way? How is the "community" involved in math and science reform?
- The third part of the interview asks you to think about the individuals, organizations, and other entities that might be considered "partners" or stakeholders for the individual school or for the school district. We will ask you to brainstorm for partners and then evaluate the effectiveness and importance of each of these partnerships.
- For parents, there are additional questions about perceived changes in instruction, homework, testing, etc. since they were students. We also ask parents to identify neighborhood or community level resources that exist to support the educational achievement of their children.

Confidentiality and Protection of Participants

Confidentiality and Protection of Subjects

Purpose

In order to mask and protect the identities of the many individuals who completed surveys, consented to interviews, participated in focus groups, and participated in the many other data collection activities, a numerical code was assigned to each individual. The information is stored in FileMaker Pro and Microsoft Access databases.

This process created four similar coding systems for the participants in our research: schools and teachers, the stakeholders in the Study of the Community Context, principals and district administrators, and the teachers and students from the Student Engagement Study. The coding logic follows.

Case Identity Coding System
Schools and Teachers
Example: EP2302

A case identity coding system was developed for schools and teachers using the following descriptors:

City Code

CH= Chicago
EP= El Paso
ME= Memphis
MI= Miami

Followed by Numbers

The first number indicates the level of the school (EP**2**302)

1= Elementary
2= Middle School
3= High School

The next number identifies a specific school from one to four, since there were not more than four schools at any level. (EP2**3**02)

The last two numbers identified the teachers, 01, 02, 03, etc. (EP23**02**)

Case Identity Coding System
Stakeholders in the Study of the Community Context
Example: CH320121013

A case identity coding system was developed for individuals interviewed during the Study of the Community Context (fall 2000 and spring 2001). This system helps ensure the confidentiality of all informants.

City Code

EP= El Paso
CH= Chicago
ME= Memphis
MI= Miami

Followed by Numbers

The first number indicates the level of the school (CH320121013)

1= Elementary
2= Middle School
3= High School

The next number identifies a specific school from one to four, since we did not more than four schools at any level. (CH320121013)

The third number (zero) is a placeholder. (CH320121013)

Tape or File Identification Number

The next three digits correspond to the file number (in the Access database) for the taped or non-taped data. (CH320121013)

The next number indicates whether the file is from a taped interview or not.

(CH320121013)

0 = no tape
1 = tape

The following number is the protocol used in the interview.

(CH320121013)

1 = School-level
2 = Stakeholders outside of the school
3 = Parents, alumni
4 = No protocol used

The last number indicates the kind of stakeholder who was interviewed.

(CH320121013)

1 = District-level staff
2 = School-level staff (includes administration, counseling, etc.)
3 = Teacher
4 = Parent/guardian
5 = School governance organization (LSC, SLC, PTA, PTO, EESAC, ECIC, etc)
6 = Volunteer
7 = Community based organization
8 = Alumnus
9 = Multiple categories (i.e. an alumnus who is also a volunteer)

Case Identity Coding System
Principals and District Administrators
Example: EP1418115

A case identity coding system was developed for principals and district administrators during the 1999-2000 data collection for the Policy Study.

City Code

CH= Chicago
EP= El Paso
ME= Memphis
MI= Miami

Followed by Numbers

The first number indicates the level of the school. (EP**1**418115)

1= Elementary
2= Middle School
3= High School

The next number identifies a specific school from one to four, since we did not more than four schools at any level. (EP1**4**18115)

Tape or File Identification Number

The next three digits correspond to the file number (in the Access database) for the taped or non-taped data. (EP14**18**115)

The next number indicates whether the file is from a taped interview or not.

(EP141811**5**)

0 = no tape
1 = tape

The last number is the protocol used in the interview.

(EP1418115)

4 = Principal interview
5 = District interview

Case Identity Coding System
Teachers and Students from Student Engagement Study
Example: CH310206

A case identity coding system was developed for students of participating teachers that were observed during the 1999-2000 data collection for the Student Engagement Study.

City Code

CH= Chicago
EP= El Paso
ME= Memphis
MI= Miami

Followed by Numbers

The first number indicates the level of the school (CH**3**101206)

1= Elementary
2= Middle School
3= High School

The next number identifies a specific school from one to four, since we did not more than four schools at any level. (CH3**1**01206)

The next two numbers identified the teacher (CH3**101**206) with the third digit indicating the period of the classroom observation, from first through seventh. (CH3101**2**06)

The final two digits (CH3101**06**) identify the students who participated in the Student Engagement Study. Values ranged from 01 through 16.

Mathematics/Science Attainment Study

Classroom Observation Protocol

Purpose

A three-part observation protocol was used to collect data on instructional practices occurring in the classrooms of participating teachers. The first part included information about the class such as the number of students, the ethnicity and gender of the students and the teacher. The second part identified the instructional materials, including technology, used during the observed lesson, and how the class was arranged. Finally, we noted classroom events, such as teacher and/or student conversations, interactions and activities.

For What Study?

The classroom observations are a part of the Mathematics/Science Attainment Study. During fall 1999 and spring 2000, 188 classroom observations were conducted in 47 schools from the four cities participating in the research study.

Relationship to Other Parts of the Study

As a part of the Mathematics/Science Attainment Study, the classroom observations provided evidence of the implementation of Driver 1, standards-based instruction.

Development Process

In the fall of 1999, the research team designed the classroom observation protocol to collect information related to Driver 1, standards-based instruction. The process began by identifying the categories of standards-based practices for observation, using standards developed by the National Council of Teachers of Mathematics (NCTM) and the National Academy of Science as guides. Based upon that identification, the research team organized the protocol into the three parts: information about the class, information about instructional materials, and observation of classroom events.

Concepts Informing the Instrument

The standards developed by the National Council of Teachers of Mathematics (NCTM) and the National Academy of Science emphasize high-quality mathematics and science education "for all students." They are also tied to the notion of the importance of resources to the enhancement of classroom instruction. Students cannot be taught with equity and fairness unless schools and classrooms are equipped with the necessary technological support, in addition to instruction that is standards-based and carried out by teachers who have appropriate certification and professional development experience.

Observation Protocol

Part 1: Classroom Data:

While in the classroom, please gather the following bits of information to place the observations in the context of the classroom:

1) What are the lesson plans for the day?
   a) Where does this fit in with what the class has been doing (the past week)?
   b) Where does this fit in with what the class will be doing (the next week)?
2) Age range of the students
3) Gender of the students (# of females/males)
4) Ethnicity of the students (how many of each ethnic group)
5) Indicators of socio-economic status of the students
6) Approximate age of the teacher
7) Gender of the teacher
8) Ethnicity of the teacher

Part 2: Physical Description of the Room and its People:

1) Seating arrangement – make a map
2) Position of teacher in classroom (take note on how this changes throughout the class period)
3) Decoration of classroom
4) Textbooks used
5) Technology used
6) Other materials

Part 3: Description of Classroom Events:

In your fieldnotes indicate the type of instructional activity that is occurring:

- T = Teacher centered activity (lecture or teacher centered explanation)
- TS = Teacher – Student activity (questions, teacher moderated dialogue)
- S = Student centered activity (student presentation, group project, joint work)

Classroom Observation Coding Checklist

Purpose

One of the instruments utilized to code the classroom observations was a classroom observation checklist. The checklist consisted of mathematics and science standards as well as components of other instruments designed to identify five mathematics and science standards-based practices (Sykes, 1999; NCTM, 1991; NRC, 1996). This instrument identifies which standards the teachers were using as part of their instructional activities in the classrooms. It was used by field research staff to code observations from fall 1999 and spring 2000 classroom data collection.

For What Study?

The classroom observation checklist was used to analyze the 188 classroom observations in the Mathematics and Science Attainment Study in fall 1999 and spring 2000.

Relationship to Other Parts of the Study

One of the objectives of the larger evaluation study, *Assessing the Impact of the National Science Foundation's Urban Systemic Initiative*, is to provide evidence of the implementation of Driver 1 (Standards-based Instruction). While the classroom observations documented all aspects of classroom instruction, the classroom checklist focused the observations on the five standards: communication, problem solving, representation, reasoning, and connections. The results of the checklist will provide evidence of the level of standards-based instruction occurring in the classrooms of the participating teachers.

Development Process

The classroom observation coding checklist and classroom observation protocol were created at the same time in the fall of 1999. Once the five mathematics and science standards were identified, they were organized to include three parallel statements describing teacher actions on a 0 to 3 scale: the first referred to whether the teacher modeled the particular standard; the second to whether the teacher provided students with the opportunity to engage in the process; and the third to whether the teacher provided appropriate guidance to students.

Concepts Informing the Instrument

Concepts informing this study are derived from the NCTM standards:

- Communication is a way of sharing ideas and clarifying understanding.
- Problem solving is engaging in a task for which the solution method is not known in advance. (Problem solving and inquiry were used interchangeably in this study.)
- Representation applies to processes and products that are observable externally as well as to those that occur "internally," in the minds of people, such as diagrams, graphical displays, and symbolic expressions.
- Reasoning involves developing ideas, exploring phenomena, justifying results, and using mathematical or scientific conjectures in all content areas.
- Connections are the interplay among mathematical or scientific topics, in contexts that relate those topics to other subject areas, and in students' own interests and experiences. (NCTM, 2000)

Classroom Observation Checklist

1. Observer's Name_____
2. Date and Time_____
3. School Name_____
4. Teacher Name_____
5. Grade Level_____
6. Subject_____
7. Class Academic level (if applicable)_____
8. Teacher Gender_____
9. Teacher Ethnicity_____
10. Teacher Age (approx)_____
11. Class Size_____
12. Ethnicity of Students (#'s)_____
13. Gender of Students (#'s)_____

Please indicate the emphasis placed on each of the statements: 0=None, 1=Minimal, 2=Moderate, 3=Major

Communication

0 1 2 3	Modeling appropriate use of mathematical and/or scientific language to communicate mathematical and/or scientific concepts. (Look for effective communication techniques, oral, written and visual forms).
0 1 2 3	Providing students with the opportunity to communicate mathematical and/or scientific ideas using oral, written and/or visual forms. (e.g. students explaining the process by which they reached a solution to a mathematical or scientific problem.).
0 1 2 3	Guiding student communication of mathematical and/or scientific ideas. (e.g. telling a student "That wasn't completely clear, could you rephrase that?")

Problem Solving

0 1 2 3	Modeling the use of problem solving strategies above and beyond presenting a specific technique or procedure. (e.g. presenting a variety of strategies which can be used to solve a problem and encouraging students to experiment).
0 1 2 3	Providing students with the opportunity to work alone or in groups to discover solutions to problems.
0 1 2 3	Guiding students in exploring ways to solve a problem and/or in discovering the answers to questions (e.g. teacher asks questions to stimulate student thinking; asks students to share the different approaches they may have used.).

Representation

0 1 2 3	Modeling the use of mathematical and scientific representations. (e.g. using visual and/or tactile representations (graphs, tables, models) of mathematical and/or scientific concepts to help explain these concepts to students).
0 1 2 3	Providing students with the opportunity to use mathematical and/or scientific representations individually and/or in groups to solve problems.
0 1 2 3	Guiding students in their use of mathematical and/or scientific representations to solve problems.

Reasoning

0 1 2 3	Modeling orally the mathematical and/or scientific reasoning processes (e.g. explaining the logic behind each step in a procedure or formula; explaining the reason why situations occur utilizing knowledge the students have been taught.).
0 1 2 3	Providing students with the opportunity to develop reasoning skills. (e.g. asking students to explain the procedure they used to solve a problem, asking students "why" questions for which the student has not been taught the answer).
0 1 2 3	Guiding students use of reasoning. (e.g. when students explain the procedures they used to solve a problem, teachers question further: "Why does _____ in this situation").

Connections

0 1 2 3	Presenting and explaining one or more of the following: 1. the ways mathematical and science concepts covered in class can be and are used to complete real world tasks 2. the connections between various topics within mathematics and/or science and/or between mathematics and/or science and other disciplines 3. the connections between the current lesson and mathematical and/or scientific concepts previously covered

0	1	2	3	Providing students with the opportunity to explore, present and/or discuss one or more of the following: 1. the ways mathematical and science concepts covered in class can be and are used to complete real world tasks 2. the connections between various topics within mathematics and/or science and/or between mathematics and/or science and other disciplines 3. the connections between the current lesson and mathematical and/or scientific concepts previously covered
0	1	2	3	Guiding student exploration and discussion of one or more of the following: 1. the ways mathematical and science concepts covered in class can be and are used to complete real world tasks 2. the connections between various topics within mathematics and/or science and/or between mathematics and/or science and other disciplines 3. the connections between the current lesson and mathematical and/or scientific concepts previously covered
0	1	2	3	Classroom displays depict the ways mathematical and/or science concepts covered in class are applied to real world tasks.

Authentic Instructional Practices Coding Matrix

Purpose

The Authentic Instructional Practices Coding Matrix was used to code the classroom observations in NUD*IST 4.0.

For What Study?

The coding matrix was used for analysis of the classroom observations in the Mathematics and Science Attainment Study during fall 1999 and spring 2000.

Relationship to Other Parts of the Study

The coding matrix is one of the instruments used for analysis of Driver 1, standards-based instruction. The findings from the analysis of the classroom observations using the coding matrix will identify whether teaching practices are teacher centered (didactic), subject centered (conceptual), or student centered (constructivist). Student centered (constructivist) is one indicator variable identified for Driver 1 in the study's structural equation model.

Relationship of Items to NSF Drivers

Instrument	Sample	Driver 1	Driver 2	Driver 3	Driver 4	Driver 5	Driver 6	Proposed Driver 7
Authentic Instructional Practices Coding Matrix	Teachers	All Questions						

Development Process

The Authentic Instructional Practices Coding Matrix was developed by the research team in the spring of 2000, as an instrument to analyze classroom observations. The coding matrix was developed using two major sources: Authentic Instruction Classroom Observation Form (Borman, G, Rachuba, L, Datnow, A, Alberg, M, MacIver, M, Stringfield, S, & Ross, S:, 2000; D'Agrostino, 1996, the Secondary Teacher Analysis Matrix (Simmons, P.E., Emory, A., Carter, T., Coker, T, 1999). Using these sources as a guide, the Authentic Instructional Practices Coding Matrix is composed of four categories: classroom communication, social support, student engagement, and lesson coherence.

Concepts Informing the Instrument

Unlike traditional approaches to teaching, authentic instruction involves a focus that is primarily student-centered and emphasizes constructivist approaches to teaching and learning. In a student-centered or authentic instructional scenario, students negotiate with their teacher an understanding of the important ideas in the lesson based on student input and discussion to develop a deep, comprehensive understanding of concepts. In such instructional milieus, we would expect to see the teacher facilitating student-centered communication , social support, and student engagement with the instructional material at hand. In addition, the lesson itself would evince activities, concepts and ideas that are significant to the instructional topic and that are covered in a manner that enhances student understanding.

Authentic Instructional Practices Coding Matrix				
Types of Classroom Processes	**1. Teacher Centered (Didactic)**	**2. Subject Centered (Conceptual)**	**3. Student Centered (Constructivist)**	
Communication	The teacher is "telling." Content tends to be descriptive with little emphasis on explanation. There is no probing of student responses and no discussion of the lesson material. The teacher may ask questions that ask students to recall facts. There is very little communication between students or from students to teacher.	The teacher explains and analyzes the content emphasizing procedural knowledge with explanations, and conceptual understanding maybe included. The teacher probes for student responses, but there is little conversation occurring among students -- most dialogue is directed through the teacher.	Students are encouraged to converse among themselves about the lesson material. The teacher may or may not engage in the conversations. The teacher and students negotiate understanding of key ideas based on students' ideas and content. Investigations dominate content. There is evidence that the purpose of sharing ideas is to arrive at a deeper understanding. Conceptual content and connections are embedded into the design, implementation, analysis, and report of investigations.	
	ZERO	**ONE**	**TWO**	**THREE**
Social Support	The rapport between teacher and students is not good. The working relationship between teacher and students is rarely constructive. The overall atmosphere of the classroom is negative.	Support is mixed. Teacher praises students occasionally. At other times student effort goes unnoticed. Students are not encouraged to support one another.	Support is usually positive. Teacher-student rapport is good. There is some evidence of high expectations for learning and trying hard. Teacher focuses on student successes and does not dwell on failures.	A strong friendship and mutual trust exists between teacher and students. The atmosphere clearly supports student effort. Lowest achieving students receive support from all.
Student Engagement	Students appear to be inattentive. They may look as though they are bored or preoccupied with thoughts unrelated to the task at hand. One or a few students may be disruptive.	Students appear to be occasionally on-task. For those that are on-task, however, they seem to be rather lethargic and/or not trying very hard.	Students for most of the time are on-task pursuing the substance of the lesson. Students have, however, occasional lapses in concentration. Students, with few exceptions are on task.	All but one or two student(s) are deeply engaged in the lesson (paying attention, clearly interested in learning the material, concentrating) for all but a few short instances of the lesson.
Coherence of Lesson	Material is presented in superficial fragments with very little connection between parts.	Some **activities** focus on significant topics, but other key concepts or ideas are not appropriately covered. The lesson activities are not well connected to over-arching concepts or ideas. (Activities for the sake of doing activities.)	Some key **concepts or ideas** are covered in depth. There are activities that focus on significant topics that are key to the whole lesson content, but coverage is uneven and other key concepts or ideas are not appropriately covered. There are some good parts of the lesson, but there are parts that are missing or do not appropriately support concept development.	Key concepts/ideas are covered in depth. The lesson content is presented as a whole, and is structured in a way that allows for the sequencing and structuring of a complex topic. Each topic appears to build on another in an effort to foster deeper student understanding.

Student Engagement Study

Purpose

In this study, three instruments were used to determine what students are doing, thinking, and feeling throughout the course of a class: the student engagement survey, the student focus group, and the parent survey. The student engagement survey was used to examine how classroom activities are related to student engagement. The focus group concentrated on learning about the relationship between mathematics and science in their everyday life, and future plans. The parent survey sought to elicit feedback on how their child's mathematics and science courses influence their home life, and after school activities. In addition, classroom observations were used to contextualize the student engagement survey. The classroom observation protocol used in this study is the same used for the classroom observations conducted in fall 1999 and spring 2000 (see page 3). The Student Engagement Study began in the fall of 1999 in two high schools from Chicago and Memphis with three participating teachers from each school. In spring 2000, the research continued in two high schools from Miami and El Paso with two participating teachers. Three hundred and four students in a total of eight schools participated in the Student Engagement Study.

For What Study

These instruments were created to collect student information for the Student Engagement Study, nestled in the Mathematics/Science Attainment Study. This study assesses the impact of classroom activities on high school engagement in on-going mathematics and science teaching and learning activities using a methodological approach called Experience Sampling Method (ESM) developed by Csikszentmihalyi and Larson. This study aims to provide an understanding of student achievement and engagement beyond students' performance on high stakes, standardized state tests.

Relationship to Other Parts of the Study

This study adds a level of information that is not captured by other studies conducted in our project. Students were asked to complete the engagement survey when they were signaled several times during classes; thus, the instrument provides time-series data on student engagement moment-to-moment. Using Experience Sampling Method (ESM), this study facilitates an analysis of the level that is immediately important for student learning: individual engagement. This study, through the use of the instruments mentioned above, provides student-level information on Driver 1, Standards-based Instruction and how instruction relates to student engagement. Driver 4, Mobilization of Stakeholders, is discussed during the focus group and responded to by parents in their survey. Drivers 5 and 6, Increased Attainment and Reduced Differences in Achievement, were addressed by the students in the focus group and on the Survey of the Enacted Curriculum.

Relationship of ESM Items to NSF Drivers

Instrument	Sample	Driver 1	Driver 2	Driver 3	Driver 4	Driver 5	Driver 6	Proposed Driver 7
ESM Student Survey	Students	1, 3, 4				2, 5	2	
ESM Focus Group Questions	Students				4	1, 3	1, 3, 4	
Parent Survey	Parents				1, 5, 6, 7, 8, 11, 12	2, 3, 4, 11, 12		

Development Process

All three instruments were created in fall 2000 by the research team. The Experience Sampling Method (ESM) was modified to focus on student engagement in mathematics and science classroom activities during their regularly scheduled classes. Recent research by Shernoff, et al. (2000) and Yair (2000) used ESM to study youths' life experiences in general, not specifically for studying classroom experiences. Our research was designed based upon the insights and methods derived from these previous studies, but adds methodological approaches for studying classroom processes. Since we wanted to gain insight into students' responses to classroom events over the duration of several classroom lessons, we observed the students, and created the survey questions to enable the students to record their impressions in real time. Questions for the focus groups were designed to elicit narrative feedback from students who had participated in the Student Engagement Study throughout the week. A survey for parents of students in the study was also created in an attempt to elicit additional parental feedback on the impact of mathematics and science reform at the individual, family, or school level.

Concepts Informing the Instrument

We studied the ESM instrument developed by Csikszentmihalyi, Schneider, and their colleagues at the University of Chicago as a model for the instruments in the Student Engagement Study. Their instrument was designed to capture students' life both inside and outside classrooms and schools. We modified it, so we could focus on what is important in classroom situations.

Student Engagement Study
Student Survey Form (filled out each time the student was signaled)

What is your beeper ID? ( )
When you were signaled the first time today,
What was the main thing that you were doing?

What else were you doing?

What was on your mind?

Please fill in the bubbles (example O) Strongly Disagree = SD, Disagree = D, Agree=A, Strongly Agree=SA

When you were signaled the first time today,

	SD	D	A	SA
I was paying attention to class.....	O	O	O	O
I did not feel like listening.....	O	O	O	O
My motivation level was high.....	O	O	O	O
I was bored.....	O	O	O	O
I was enjoying class.....	O	O	O	O
I was focused more on class than anything else	O	O	O	O
I wished the class would end soon.....	O	O	O	O
I was completely into class.....	O	O	O	O

Please fill in the bubbles.

When you were signaled the third time today, was the main thing you were doing more like
Work O Play O Both O Neither O

What was being taught was Very easy O Easy O About right O Difficult O Very difficult O Can't tell O

What was being taught was something that I already knew Yes O No O Can't tell O

Please fill in the bubbles that apply.

When you were signaled the third time today, what was being taught was important for

my everyday life	YesO	No O
going to college	YesO	No O
my future job	YesO	No O
future tests	YesO	No O

If you felt that class at the time of signal was important for tests, please tell us for which tests it was important. Fill in all that apply.
Class quiz O Midterm/Final O SAT or ACT O
State Assessment Tests (e.g., TAAS, End of Course Exam) O

Class was unrelated to test O

Please fill in the bubbles that apply.

When you were signaled the third time today, you were feeling: (Fill in all that apply)

HappyO	ConfusedO	ActiveO	Having funO
NervousO	IntimidatedO	SadO	CooperativeO
RelaxedO	WorriedO	AngryO	ConfidentO
CompetitiveO	FrustratedO	BusyO	SleepyO

Were you talking with anyone?
No oneO ClassmateO Teacher O
Was it about the class? YesO No O

Comments – if any:

USI STUDENT ENGAGEMENT STUDY
QUESTIONS FOR FOCUS GROUP INTERVIEWS

FORMAT: 8-10 students in a group
2 moderators – one to record and one to facilitate
Tape recorders around table to capture narrative

The final questions will derive from the feedback and observations of the week's Student Engagement Study. We will ask the schools if we can have 1 – 1 ½hours with the students. We need at least one hour (or one class period) in order to conduct the group properly and give all students a chance to speak.

1. Coursework - What math and/or science classes are you taking this year? (Note: This question will not take time if we focus on math and science. The information is necessary to help answer our research questions related to Drivers 5 and 6.)

2. Are you and your friends in the same math and/or science classes?

3. What kinds of extracurricular activities (clubs, sports, etc.) are you involved in at school? (Drivers 5 & 6)

4. What kinds of activities, organizations, etc. are you involved with in your neighborhood, in the community? What do you do with these groups? Do you think your work with them helps you in school? How? (Drivers 4 & 6)

5. What do you intend to do after high school?
   a. Go to vocational school?
   b. Go to a community college?
   c. Go to university?
   d. Go into the workforce
   e. Other

6. Do your future plans involve using math, science, or technology?

PARENT SURVEY - STUDENT ENGAGEMENT STUDY

What is your relationship to the high school student who participated in the Student Engagement Study? (Please check one below).

__ Mother __ Father __ Guardian

__ Grandparent __ Other relative_____ Other relationship:_____

How far did you go in school? Please check one below.

_____ Finished elementary school

_____ Some Vocational/technical education after high school

_____ Completed a bachelor's degree at a college of university

_____ Finished some high school

_____ Some community college, college, or university courses

_____ Completed a professional or advanced degree

_____ Finished high school

Please tell us the number of children in your household. Please check below.

_____Ages 0 – 4 years

_____Ages 5 – 10 years

_____Ages 11 – 13 years

_____Ages 14 – 18 years

Have you ever encouraged your teenager to get a book, a manual, or a computer program, or to take a course that would help him/her to prepare for any of the following tests?

___ State Assessment Tests (FCAT, TAAS, TCAP, CASE, IGAP)

___ American College Test (ACT)

___ Scholastic Aptitude Test (SAT)

___ Armed Services Vocational Aptitude Battery (ASVAB)

___ General Education Development Test (GED)

Do you see your child using his/her math and/or science knowledge around the house? Yes_____ No_____

Do you see your child using his/her math and/or science knowledge at his or her job? Yes_____ No_____

How many times in the past year have you talked to your teenager about going to work, entering the military, or applying to a vocational/technical school, college, or university for education after high school?

___ Never ___ 1 or 2 times ___ 3-6 times ___ at least once a month

Mark any of the following ways you have helped your teenager make decisions about what path to follow after high school?

___ Offered assistance, but our teenager wants to do this himself/herself
___ Talked to our teenager about particular schools
___ Gave our teenager information (brochure, booklet) that we received from school
___ Offered to take our teenager to a private college counselor
___ Referred our teenager to the guidance counselor at school
___ Referred our teenager to educational outreach programs like Talent Search, Upward Bound, or a Bridge program

Please put a check by the resources that are available in your neighborhood to help your child with school work?

___ Tutorial programs ___ After-school youth programs Other:_____

___ Library ___ Community Center

Please check any of these activities or events you have participated in during the past year.

___ Math fairs or science fairs
___ Workshops for parents on homework assistance
___ Workshops on understanding changes in math and science
___ Family math or family science nights at the school
___ PTA/PTO, LSC meeting
___ Conference with teacher
___ A classroom visit
___ A school event (play, concert, sports competition, honor ceremony, etc.)

Please check all the ways that you get information from your child's school about his or her math or science cla s.

___ Flyers
___ Letters
___ Phone calls
___ School newsletter
___ School newspaper
___ My child tells me
___ Other: _____

Please check any changes you have seen in math and/or science courses since your child started high school?

___ More math classes to take to graduate
___ More science classes to take to graduate
___ Algebra in the freshman year
___ Harder (or more challenging) classes
___ Easier classes
___ Other:_____

Is homework different from the homework that you did in high school? If so, please check the ways it is different.

___ More homework
___ Harder homework
___ Less homework
___ Can bring books home
___ Cannot bring books home
___ More worksheets

How important to you is it for your child to take the following courses? Mark each one from 0=not important to 3=very important

Algebra I	0	1	2	3
Algebra II	0	1	2	3
Geometry	0	1	2	3
Pre-calculus	0	1	2	3
Biology	0	1	2	3
Chemistry	0	1	2	3
Physics	0	1	2	3
Earth Science	0	1	2	3
Calculus	0	1	2	3

What classes are your child is taking this semester? (Please mark all that apply and add ones that we left off).

___ I don't know
___ English
___ Algebra I
___ Algebra II
___ Geometry
___ Pre-calculus
___ Calculus
___ Biology
___ Earth science
___ General science
___ Integrated science
___ Marine science
___ Environmental science
___ Physical science
___ Anatomy and physiology
___ Chemis try
___ Physics
___ American History
___ World History
___ Civics/Government
___ Art/music
___ Foreign language
___ ROTC
___ Shop classes - which one?_____
___ Computer classes
___Other:_____

School Culture Quality Survey

Purpose

The purposes of this survey were to determine whether the quality of professional community as measured by the *School Culture Quality Survey* (SCQS) (Katzenmeyer, 1999) was positively related to student achievement in mathematics, and whether a school culture driver added to the NSF driver model might enhance our ability to predict the values of the outcome drivers.

For What Study

The survey, as part of the Mathematics and Science Attainment Study, sought to determine whether or not significant relationships exist between measures of teachers' professional community (school culture) and student's achievement in Mathematics. Mathematics achievement scores, school demographic data, and the quality of professional community scores from 39 schools located in Chicago, El Paso, Memphis, and Miami were studied.

Relationship to Other Parts of the Study

The proposed addition of Driver 7, School Culture, became apparent after initial analysis of the data. The survey, based on data from 39 schools in Chicago, El Paso, Memphis, and Miami, demonstrates that the quality of the Professional Community of the school, as measured by the SCQS is strongly related to school level mathematics gain scores adjusted for pretest scores, differences in percentage of students on free/reduced lunch, and school mobility rate (Drivers 5 and 6).

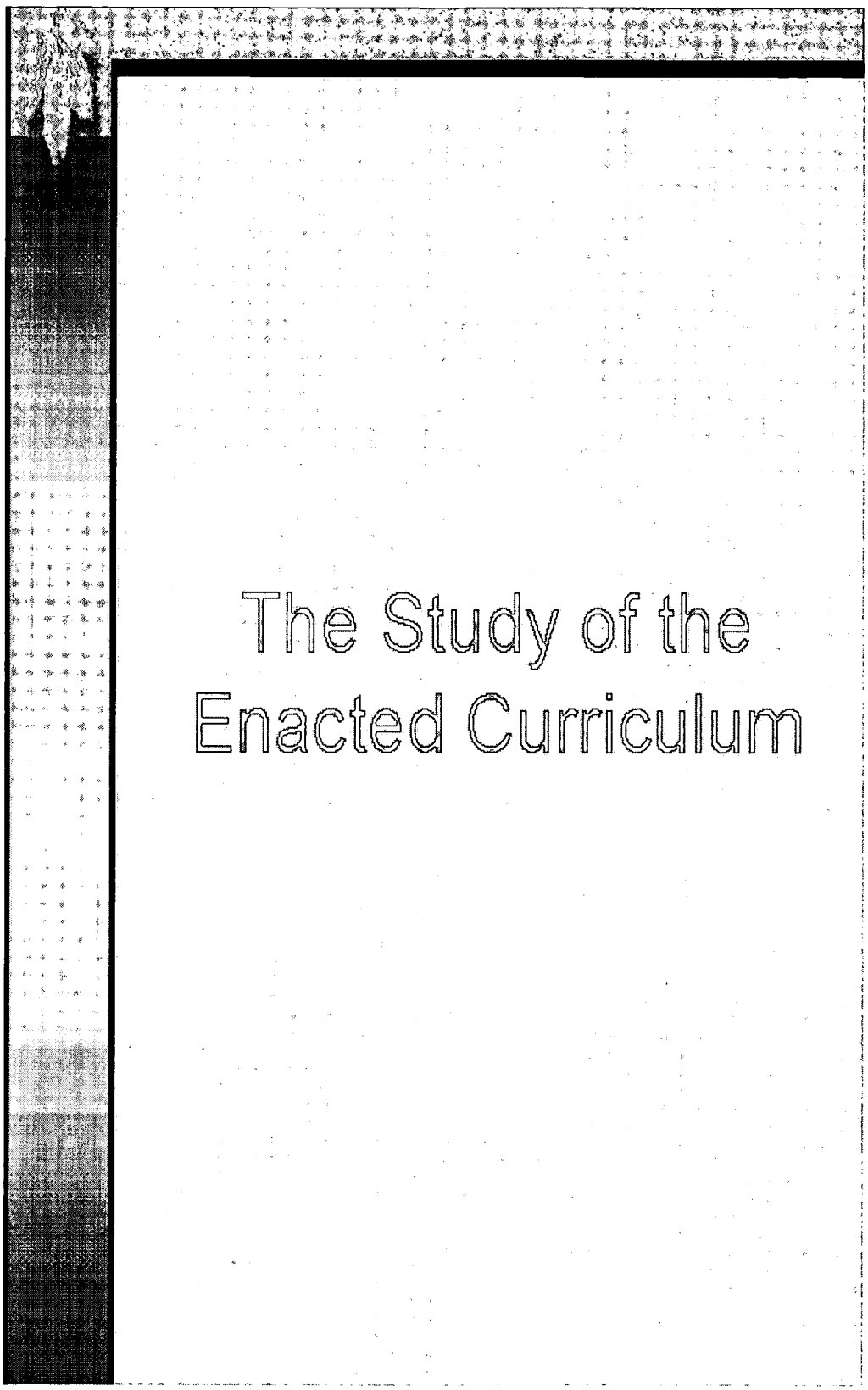
Relationship of SCQS to NSF's Six Drivers

Instrument	Sample	Driver 1	Driver 2	Driver 3	Driver 4	Driver 5	Driver 6	Proposed Driver 7
School Culture Quality Survey	All staff – school level			14, 24, 31, 32				1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 15, 16, 17, 18, 19, 20, 21, 22, 23, 2, 27, 28, 29, 30, 33, 34, 35, 36

Development Process

Based on ideas and concepts from the quality movement and the work of Peter Senge, the SCQS conceives the quality of professional community to include the following factors: shared vision, facilitative leadership, teamwork, and learning community. Beginning in 1996, the SCQS was developed to assess the extent to which a school professional community characterized by these four elements is present in schools. Items that addressed these four elements were developed. The pencil and paper scan sheet approach to data collection was chosen because of a conviction that, to gain acceptance, the measure needed to be effective in gathering the needed information, and efficient in terms of dollar costs and staff time.

Information about the complete *School Culture Quality Survey* is available at http://anchin.coedu.usf.edu



The Study of the Enacted Curriculum

Study of the Enacted Curriculum
Council of Chief State School Officers

Purpose

The study of the enacted curriculum consists of three surveys for teachers and students in mathematics with three parallel surveys for science. Mathematics and science teachers complete two surveys: survey of instructional content, and survey of classroom practices. Students complete the student survey of classroom practices for either science or mathematics. Together, these surveys elicit teacher and student responses on what is occurring in mathematics and science classrooms in terms of content, instruction, professional development, technology, and homework.

For What Study

These surveys are a part of the Study of the Enacted Curriculum, one of the three studies that compose the larger research study, *Assessing the Impact of the National Science Foundation's Urban Systemic Initiative.* The surveys were administered to the teachers and students in the four participating cities in spring 2000. One hundred forty-one teachers completed the survey, with 4,615 students of the participating teachers completing a parallel survey of classroom practices.

Relationship to Other Parts of the Study

Information from these surveys will not only inform the Study of the Enacted Curriculum, but the Mathematics and Science Attainment Study as well. These self-reported data can be compared with the classroom observation data, and lend more information to Driver 1, Standards-based Instruction. Additionally, the survey provides information on professional development and other resources (Driver 3, Unified Application of Resources). The surveys can also determine if there are differences in mathematics and science teaching that are related to state policy initiatives and state standards (Driver 2, Unified Set of Policies).

Development Process

The Study of the Enacted Curriculum was a subcontracted study through the Council of Chief State School Officers. The instruments had been in use since 1999, and collaboration with the USF study presented an opportunity to extend the research on classroom curriculum and practices by including the schools in our sample.

Information about the complete Study of the Enacted Curriculum is available at
http://www.ccsso.org/projects/projects.html

The Policy Study

Principal Interview

Purpose

In spring 2000, researchers carried out interviews with the principals of the 47 schools in the four cities participating in the study. The principal interview protocol consists of 13 multi-part items related to NSF's Six-Driver model. In addition to providing responses to questions asked during the interview, our participants were also asked to rate the level of importance in implementing reform of specific strategies such as "Identifying teachers classroom instructional needs and providing them support," or "Evaluating the potential value of new instructional strategies and programs."

For What Study?

The principal interviews were part of the project's Policy Study and lent information to the analysis of the implementation of NSF's Drivers from an administrative perspective.

Relationship to Other Parts of the Study

The principal interview questions were devised to provide data for each of the Drivers in the NSF model. The interview protocol elicited information about individuals' role as principal, their definition of standards-based instruction, their views of policies impacting mathematics and science, the impact of professional development, social equity issues impacting their schools, and the kinds of resources available as well as the coordinated use of these resources. All together, the principal interview data can be used to support analysis for any of the drivers.

Relationship of Protocol Items to NSF's Six Drivers

Instrument	Sample	Driver 1	Driver 2	Driver 3	Driver 4	Driver 5	Driver 6	Proposed Driver 7
Principal Interview Protocol	School level administrator	2	4, 6,	7, 8, 9, 10, 12,	11	13,	5, 13	1

Development Process

Items for the Principal Interview protocol were identified and developed by the 1999-2000 research team. Questions were developed to elicit feedback from principals related to each of the NSF drivers. It was also determined that the administrators would be asked to rate the importance of some of the topics on a zero to three scale, with zero being not at all important and three as extremely important. This rating scale has enabled the principal responses to be quantified for use in the study's Six-Driver model.

Principal Interview Protocol

General Context

1. State the main purpose of our study, and the goals of this interview.
2. Gather information about the principal:

Name: _____ Age: _____ Gender: _____ Race/Ethnicity:_____

How long have you been a principal?
How long have you been a principal at this school?
Have you held other administrative positions?
How many years have you taught?
What was the area?
What is your previous non-academic work experience?
What is your highest level of education

Specific Context

I would like to ask you about a dozen questions. In addition, I will ask you to use a rating scale on some:
0 = Not at all important to 3 = Extremely important.

Q1: (Driver 7) How would you define your role as principal? *Probe:* How do you support instruction and learning in your school?

How would you rate the importance of:

1a) Identifying teacher needs and providing them support with regard to instruction
0 = Not at all important to 3 = Extremely important. .

Please provide examples of your efforts in this area

How would you rate the importance of:

1b) Making program adjustments in response to unmet student needs?
0 = Not at all important to 3 = Extremely important.

- Please provide examples of your efforts in this area.

Q2: (Driver 1) How would you define standards-based instruction?

2a) How is standards-based instruction implemented in the math and science classrooms at your school?

- Please rate the impact of standards-based instruction on the curriculum
  MATH 0 = Not at all important to 3 = Extremely important.
  SCIENCE 0 = Not at all important to 3 = Extremely important.

Q3: (Multiple Drivers) Please detail changes that have occurred in your school since the implementation of the USI.

- Please tell us the specific ways that the USI has affected the following in both math and science:

3a) Student Achievement
MATH 0 = Not at all important to 3 = Extremely important.
SCIENCE 0 = Not at all important to 3 = Extremely important.

- Please provide examples

3b) Professional Development
MATH 0 = Not at all important to 3 = Extremely important.
SCIENCE 0 = Not at all important to 3 = Extremely important.

- Please provide examples

3c) Technology
MATH 0 = Not at all important to 3 = Extremely important.
SCIENCE 0 = Not at all important to 3 = Extremely important.

- Please provide examples

3d) Social Organization (block class structuring, teacher prep time)
MATH 0 = Not at all important to 3 = Extremely important.
SCIENCE 0 = Not at all important to 3 = Extremely important.

- Please provide examples

Q4: **(Driver 2) Can you identify those policies (national, state, and district) regarding math and/or science instruction/achievement that have the biggest impact on your school?**

4a) What do you consider to be your role in implementing national and state policies at your school?

4b) What are the policies that support or hinder the implementation of the USI in your school?

Q5: **(Driver 6) A major policy emphasis in school reform is the reduction of social inequities. What social equity issues or problems are particularly troublesome at your school?**

5a) Do you feel that the USI has been useful in addressing such issues/problems? Why or why not?

Q6: **(Driver 2) A lot of emphasis is placed on accountability and evaluation in reform. As a principal, what measures or processes do you use to assess teacher performance, either formally or informally?**

- Please rate its impact on the classroom.
  MATH 0 = Not at all important to 3 = Extremely important.
  SCIENCE 0 = Not at all important to 3 = Extremely important.

Q7: **(Driver 3) During the last three years have you or your staff attended any professional development activities?**

7a) When during the year? What topics or programs were covered? Who sponsored the professional development?

7b) What are the percentages of staff who attended? For staff who do not attend, how is information disseminated?

7c) How many of your teachers are earning advanced degrees? Do you offer tuition reimbursement?

Q8: **(Driver 3) How many out-of-field teachers are there in your school? What is the impact of the out-of-field teachers on meeting the USI goals?**

Q9: **(Driver 3) How often are meetings among staff at your school held to discuss instructional practices, and other issues related to the USI? (Frequency, % of attendees, topics).**

- Please rate the impact of these meetings on the math and science programs at your school
  MATH 0 = Not at all important to 3 = Extremely important.
  SCIENCE 0 = Not at all important to 3 = Extremely important.

Q10: **(Driver 3) Has participation in the USI enabled you to increase the amount of available resources (technology, instructional materials, funding, time). Provide examples.**

Q11: **(Driver 4) Thinking about community resources such as university partnerships, businesses, parents, etc., how has their participation in USI-related or other reform efforts impacted your school? (What are the other reform efforts?)**

- Please rate their participation as it impacts the science and/or math programs in your school.
  MATH 0 = Not at all important to 3 = Extremely important.
  SCIENCE 0 = Not at all important to 3 = Extremely important.

Q 12: **(Driver 3) How are resources coordinated at your school and within the school district?**

- Please rate the impact of this coordination on the science and/or math programs in your school.
  MATH 0 = Not at all important to 3 = Extremely important.
  SCIENCE 0 = Not at all important to 3 = Extremely important.

Q13: **(Driver 5/6) How do you know if students are benefiting from your schools involvement in the USI?**

13a) Are there particular achievement markers of student achievement/accomplishment you consider important?

- Please rate the impact these have on your school.
  MATH 0 = Not at all important to 3 = Extremely important.
  SCIENCE 0 = Not at all important to 3 = Extremely important.

District Interview

Purpose

From January to May 2000, researchers conducted interviews with district level staff and administrators in the four sites (and six districts) participating in the study. The district administrator interview protocol consists of 14 multi-part items related to NSF's Six-Driver model. In addition to providing responses to questions asked during the interview, participants were also asked to rate the level of importance in implementing reform of specific strategies such as "Identifying teachers classroom instructional needs and providing them support," or "Evaluating the potential value of new instructional strategies and programs.

For What Study?

The district administrator interviews were part of the project's Policy Study and lent information to the analysis of the implementation of NSF's Drivers.

Relationship to Other Parts of the Study

In addition to providing data to inform the complete policy study, responses from the interviews with district administrators provided alternative input for analysis of teacher professional development and interviews with principals.

Relationship of Protocol Items to NSF's Six Drivers

Instrument	Sample	Driver 1	Driver 2	Driver 3	Driver 4	Driver 5	Driver 6	Proposed Driver 7
USI District Interview Protocol	District and school level administrators	1	1a, 2b, 2c, 4, 4a, 4b, 4c, 4d, 4e, 8a	1e, 2f, 2g, 3a, 3b, 6, 6a, 6b, 6c, 7, 7a, 7b, 7c, 7d, 7e, 7f, 8b, 9, 10, 10b, 10c	1c, 1d, 1e, 12, 12a	13, 13a	13	6d, 7g

Development Process

Items for the district administrator protocol were identified and developed by the 1999-2000 research team. Questions were developed to elicit feedback from district-level staff related to each of the NSF drivers. To distinguish between curriculum specialists ("Curr") and other district-level administrators ("All"), a column labeled "Role" was added to the left of the questions. This distinction was made due to the content of a couple questions, namely, questions two and nine. These questions required knowledge that curriculum specialists would possess, and not necessarily other district administrators.

USI District Interview Protocol

General Context

1. State the main purpose of our study, and the goals of this interview.
2. Review the Informed Consent form.
3. Gather information about the district person:

Name: _____ Age: _____ Gender: _____ Race/Ethnicity:_____

- How long have you been working at the district level? How long have you been in this position?
- What other administrative positions have your held?
- How many years did you teach, and what was the subject area?
- What previous non-academic work experience have you had?
- What is your highest level of education?

Role	Q #	Questions	Driver
All	1	**Based upon your experiences during the past several years, what do you believe is the best way to improve mathematics and science education in your district?**	1
	1a)	Currently, national efforts to improve education use the term reform. What do you believe these national reform initiatives are and how do they apply to your district?	
	1b)	The National Science Foundation, in the Urban Systemic Initiative, defined reform as standards-based reform that includes implicit constructivist principles. To what extent does the USI definition of reform support or conflict with your views?	
	1c)	(Driver 2, 3) How would you define your role as part of the Urban Systemic Initiative in your district? *Probe:* How do you support the reform agenda in schools?	
	1d)	How does the district identify teachers' instructional needs? • Please provide examples of your efforts in this area.	
	1e)	How does the district support the identified instructional needs of teachers? • How do you measure the effectiveness of these efforts?	
		1c) How does the district identify unmet student needs? • Please provide examples of your efforts in this area. 1d) How does the district support these unmet student needs? • How do you measure the effectiveness of these efforts?	
		1e) How does the district identify the needs of administrators? • How does the district support the identified needs of administrators?	
Curr	2	**How would you define standards-based instruction?**	1
	2a)	How is standards-based instruction implemented in the math and science classrooms in your district?	
	2b)	How have you integrated standards-based instruction into the mathematics and science curriculum?	
	2c)	How do you determine the effectiveness of standards-based instruction?	
	2d)	How has the USI affected Student Achievement in mathematics?	
	2e)	How has the USI affected Student Achievement in science?	
	2f)	How has USI affected technology in mathematics?	
	2g)	How has USI affected technology in science?	
All	3	**Please describe any major changes that have occurred in your USI plans since its implementation.**	
	3a)	Why were these changes made?	
	3b)	What new or different organizational structures or patterns have been created as a result of the USI? Please provide examples	
All	4	**What policies (at the national, state, and district levels) regarding math and/or science instruction/achievement have the biggest impact on your district?**	2
	4a)	What do you consider to be your role in implementing national and state policies in your district?	
	4b)	What policies support or hinder the implementation of the USI in your district?	
	4c)	What national, state, or local politics influenced decisions concerning your USI?	

Role	Q #	Questions	Driver
	4d)	How have NSF's USI drivers influenced local policy? (Include a handout summary of drivers)	
	4e)	Has the NSF USI influenced policy-making in other areas?	
	4f)	What kind of working relationship do you feel that the district has with the NSF in administering the USI?	
	4g)	Has that relationship changed during the course of the grant?	
	5	**What social equity issues or problems are particularly troublesome in your district?**	**2**
	5a)	What policies or procedures have been implemented to reduce social these inequities?	
	5b	How has the USI has been useful in addressing such issues/problems?	
	6	**What is the district's policy for evaluating school based administrators?**	**3, 7**
	6a)	What measures, criteria, or processes are used to assess administrative performance, formally and informally?	
	6b)	How do you determine the effectiveness of these evaluation procedures on student achievement in mathematics and science?	
	6c)	How are the procedures for evaluating district-based administrators different from school-based administrators?	
	6d)	How has district policy addressed impro ving the climate of the working environment at the district level, the school level, and the classroom level?	
	7	**During the last three years have you or your staff attended any professional development activities?**	**3**
	7a)	When during the year? What topics or programs were covered? Who sponsored the professional development programs.?	
	7b)	What are the percentages of staff who attended? Is attendance required? For staff who do not attend, how is information disseminated?	
	7c)	In what manner does the district support teachers and administrators to earn advanced degrees.	
	7d)	What process did you use in developing the agenda for professional development programs?	
	7e)	How is staff development designed, as a series of events or as part of sustained engagement?	
	7f)	What is the role of standards-based instruction and constructivist teaching practices in professional development program? How was that role established?	
	7g)	How does staff development promote changes in attitudes and instru mentation?	
	8	**What are the current policies regarding out-of-field teachers in your district?**	**3**
	8a)	What steps has the district taken to reduce the number of out-of-field teachers in mathematics and science?	
	8b)	What steps have been taken to impro ve the mathematics and/or science content backgrounds of elementary teachers?	
Curr	**9**	**How often are district meetings held to discuss the philosophical basis of instructional practices, and other issues related to the USI? (Frequency, % of attendees, topics).**	**3**
	10	**How has participation in the USI enabled you to increase the amount of available resources (technology, instructional materials, funding, time). Provide examples.**	**3**
	10a)	What policies were developed or implemented handle the problem of having USI funds supplant rather than supplement district support for mathematics and science programs?	
	10b)	How were USI funds used to supplement district contributions? Please describe examples.	
	10b)	Were there instances were USI funds supplanted normal district support for math and science programs? Why did this happen?	
	11	**What steps have you taken to ensure the sustainability of the USI reform effort?**	**3**

Role	Q #	Questions	Driver
	12	**Thinking about community resources such as university partnerships, businesses, parents, etc., how has their participation in USI-related or other reform efforts impacted your district?** **(What are some other reform efforts?)**	4
	12a)	Please rate their participation as it impacts the science and/or math programs in your district.	
	13	**How do you know if students are benefiting from your district's involvement in the USI?**	5, 6
	13a)	What are the particular markers of student achievement/accomplishment for mathematics and/or science that you consider important?	

Teacher Focus Group

Purpose

The decision to use focus groups was made by the research team when the schools and teachers were selected to participate in the research study in the fall of 1999. The focus groups were organized to inform the teachers about the research project, answer any questions, and obtain the opinions of the teachers about professional development opportunities they had experienced. The focus group facilitators asked the participants open-ended questions about which of their professional development experiences had provided the most useful or least useful information. Researchers also asked about what teachers wished to have changed about the professional development offered through the USI or district.

For What Study?

The focus groups were conducted in the 47 schools in fall 1999. The five teachers participating in the research and, occasionally, administrators and other teachers participated in the focus groups. The focus groups were conducted to inform the Policy Study by identifying how professional development policies at the local level have impacted teachers' classroom practices.

Relationship to Other Parts of the Study

The teacher focus groups about professional development lent information about Driver 3 (Unified Application of Resources) in the Six-Driver model. One of the indicators for Driver 3 is professional development activities for teachers. In their responses to open-ended questions, teachers shared their experiences with professional development activities and identified the types that had the most impact on their instructional practices. The first Driver in NSF's model calls for the "implementation of standards-based curriculum and/or instructional materials that are aligned with instruction and assessment." Professional development policies are the primary vehicle used for accomplishing the goals of the first driver.

Development Process

The focus group questions were developed during fall 1999, before the first site visits to the participating schools. The questions were created to gain an initial understanding of the types of professional development activities in which the teachers have been involved.

Protocol for Teacher Focus Group

1. Introduce the teachers to the NSF grant, and ask if they have any questions.

2. Professional development questions:

Q1: We'd like to you reflect on your experiences with staff development over the last four years for mathematics and science.

Q2: Which professional development experiences were the most useful or helpful for you in your classroom instruction?

Q3: Which professional development experiences were the least useful or helpful for you in your classroom instruction?

Teacher Questionnaire

Purpose

The teacher questionnaire was used in conjunction with the teacher focus group protocol to solicit individual teacher's points-of-view. The open-ended nature of the questionnaire allowed each teacher an opportunity to describe his or her personal views regarding professional development.

For What Study?

The teacher questionnaire was given to all participating teachers in Chicago, El Paso, Memphis, and Miami in the fall of 1999, as part of the data collection for the Policy Study. In all, 148 teachers responded to the questionnaire.

Relationship to Other Parts of the Study

The teacher questionnaire informed NSF's Six-Driver model by providing information on several of the Drivers from the teacher's perspective: Driver 1 (Standards-based Instruction), Driver 3 (Unified Application of Resources), and Driver 4 (Mobilization of Stakeholders). The professional development questions (Driver 3) included in the questionnaire were used with the teacher focus group data to understand the teacher's professional development activities since the beginning of the Urban Systemic Initiative (USI) reform efforts in each of the participating cities.

Development Process

The items for the teacher questionnaire were developed by the research team in the fall of 1999 to address how the USI reform has affected the teachers since the inception of the reform. The questions touched upon a number of the Drivers, as mentioned above, which aided the researchers in developing the monthly correspondence questions to the teachers.

Teacher Questionnaire

1. What has been your experience with the District's Urban Systemic Initiative? What are your impressions regarding the goals of the District's Urban Systemic Initiative?
2. Have you made any changes in your instructional strategies since the implementation of the District's Urban Systemic Initiative? If so, please describe these changes.
3. What types of assessment strategies (test, oral reports, projects) do you use? Please give some specific examples. How did you choose the methods that you use?
4. What types of professional development activities (at your school or elsewhere) have you participated in through the District's Urban Systemic Initiative? Please comment on the content and format of these conferences/workshops.
5. Please comment on the effectiveness of these professional development activities. What aspects have you found useful or not useful? What types of professional development activities would you like to see in the future?
6. What instructional materials (if any) have been made available to you by the District's Urban Systemic Initiative? Please comment on the effectiveness of these materials and describe what would be effective in the future.
7. What type of input have you received regarding curriculum and instruction from the following:
   a) Parents?
   b) Principal?
   c) Other teachers?
   d) School Board?
   e) Superintendent?
   f) University Partnerships?
   g) Local Businesses?
8. In what ways do you utilize community resources and/or school partners (individual or organizations) in your classroom?

Teacher Survey Correspondence

Purpose

The correspondence provided information on how policies, student assessments, classroom assessments, technology, and curriculum decision-making are viewed by teachers. Teachers were also able to articulate how these same issues impact their classroom practices.

For What Study?

The teacher survey correspondence was used to collect teacher-reported data for the Mathematics and Science Attainment Study and the Policy Study. The correspondence was distributed on a monthly basis throughout spring 2000 to teachers participating in the overall study.

Relationship to Other Parts of the Study

The correspondence topics sought to obtain information about Drivers 1, Standards-based Instruction, and Driver 2, Unified Application of Policy in the Six-Driver model.

Relationship of Items to NSF's Six Drivers

Instrument	Sample	Driver 1	Driver 2	Driver 3	Driver 4	Driver 5	Driver 6	Proposed Driver 7
E-Mail Survey Topic One	Teachers		1, 2, 3					
E-Mail Survey Topic 2	Teachers	1,2,3, 5	4, 5					4
E-Mail Survey Topic 2A	Teachers	1,2,3,4,5						

Development Process

The correspondence topics were developed by the research team beginning in fall 1999 and administered throughout the school year to establish an on-going communication with teachers concerning their views on the implementation of the USI. The topics addressed critical aspects of the NSF Drivers: policies, student assessment, classroom assessment, technology, and curriculum decision-making and sought to determine the impact of these on teaching practices. These topics were selected from the teacher questionnaire (see Teacher Questionnaire description) to gather more in-depth information on the topics from the teachers. The questions were open-ended and designed to also provide rating data using a zero to three scale. The first question on each correspondence included three parts: Part 1 asked teachers to identify important aspects about each topic; Part 2 asked teachers to rate the topics impact on instructional practices; and Part 3 asked teachers to describe the topics use in their classroom. The first question was followed by three open-ended questions asking respondents to elaborate and evaluate the impact of each topic on their classroom practices. Email accounts were set up so that teachers could respond using the Internet. There were challenges to this method, so teachers faxed their responses to the research team instead.

Teacher Correspondence #1

January 2000

TOPIC 1: What mandates and policies (that is, the measures you are held responsible for implementing) most affect your classroom instruction in mathematics and science?

1) Please provide a brief description (exact title not required) of each policy and/or mandate. Indicate whether you perceive it to be a national, state, district, or school policy/mandate.

2) Indicate the extent of its effect on your instructional practices.

0= None 1=Minimal 2=Moderate 3=Major

What is your professional evaluation of each policy and/or mandate with respect to its impact on student academic success?

Note: We have provided space for several policies/mandates, but you need not use it all. Provide information for those policies/mandates you feel most impact your classroom instruction in mathematics and science

Policy/Mandate	0-3	Evaluation of Policy/Mandate Impact on Student Academic Success

Teacher Correspondence #2

February 2000

TOPIC #2: How does assessment affect your classroom instructional practices in mathematics and science?

1) Please provide the names of state, district, school, and classroom level assessment instruments (exams, tests, portfolios, etc.) for students in your school in general and your class in particular. (Column 1)

2) Indicate the extent of impact of each on your instructional practices. (Column 2)
0= None 1=Minimal 2=Moderate 3=Major

3) When and how do you prepare students for them? How mu ch time does this preparation entail? (Column 3)

Question #1: Name or Description	Question #2: (0-3)	Question #3: Preparation Description

4) What particular issues concerning assessment has your faculty talked about and how did you resolve them?

5) As a school, what has been done to address the assessment needs of the student body?

Teacher Correspondence #3

March 2000

TOPIC #3: How have your assessment and grading procedures in mathematics and science been affected by the USI?

1. In column 1, please name the categories that you use for determining student grades in mathematics and science. These might include Tests, Quizzes, Projects, Presentations, Labs, Portfolios, Student Self- and Peer Evaluations, etc.

2. In column 2, please describe the role of each category in your assessment process; e.g. why it is included, how often it is used, when it is used, whether it "counts" every time, etc.

3. In column 3, indicate the effect of professional development on the inclusion of those categories:
   0= None 1=Minimal 2=Moderate 3=Major

Question #1: Name	Question #2: Category Description	Question #3: (0-3)

4. Please describe any professional development that affected your decisions to include particular categories in your assessment and grading process.

5. Please describe the processes by which you determine cumulative grades for particular time periods including
   - ✓ end of marking periods
   - ✓ end of semesters
   - ✓ end of years
   - others particular to your school

   The processes might include weighted or unweighted formulas, rubrics, portfolio, district guidelines, etc.

6. Please describe any changes in your assessment and grading procedures in mathematics and science over the past five years.

For one math or science class, please provide a copy of your grade book pages from the beginning of the 1999-2000 school year through the end of the most recent grading period. In the place of student names, which should be blocked out, please provide race and gender identifiers.

Teacher Correspondence #4

April 2000

TOPIC #4: How does technology affect your classroom instructional practices in mathematics and science?

1) Please identify the forms and instruments of technology that you and your students use in the classroom. (Column 1)

2) Indicate the extent of impact of each on your instructional practices. (Column 2)
   0= None 1=Minimal 2=Moderate 3=Major

3) When and how are they used? (Column 3)

Question #1: Name or Description	Question #2: (0-3)	Question #3: Description of Use

4) How available is technology to both teachers and students in your school?

5) Are there provisions in place to assure equal access to technology for all students and teachers? If so, how effective are those provisions?

6) How have your instructional practices changed as a result of technology?

Teacher Correspondence #5
May 2000 TOPIC #5: How does the curriculum decision-making process affect your classroom instructional practices in mathematics and science?

1) Please identify the various people that make decisions about what, when, and how you teach.

2) Indicate the extent of impact of each on your instructional practices.
0= None 1=Minimal 2=Moderate 3=Major

3) Describe the impact of each decision on your instructional practices.

Question #1: Name or Title	Question #2: (0-3)	Question #3: Description of Impact

4) Describe your school's formal and informal decision-making processes for curriculum and instruction – that is, the ways in which you and your colleagues decide what to teach, how to teach, and when to teach it.

5) How would you evaluate the decision-making process for curriculum and instruction in your school? In your district?

Pilot Community Study

Purpose

This protocol was created for the Pilot Study of the Community Context (January – June 2000). Its initial use was in Chicago with the Chicago Systemic Initiative (CSI) Community Study Interview for Identified Partners or Stakeholders. The instrument was used to field test an interview protocol and gather information about the mobilization of stakeholders in each of the four sites. The purpose of the pilot study was to: gather information about stakeholders and partners at two high schools in each site, elicit the multiple definitions of "community" and "partners", and identify resources and stakeholders for participation in the full community study conducted from September 2000 to March 2001.

For What Study?

The original instrument was developed to support the pilot study of the community context. Researchers in all four sites adapted portions of this instrument for the studies conducted between January and June 2000.

Relationship to Other Parts of the Study:

Feedback from pilot study researchers helped in the design of the three protocols used in the full Study of the Community Context (2000-2001).

Development Process

The protocol design came about after group discussions during the Technical Advisory Network meeting in February 2000 at the University of South Florida. An evaluation of the items and discussion of the instrument's utility for the full study occurred during a meeting of all researchers on September 17, 2000. All researchers present collaborated in the identification of questions that would be most appropriate for the instruments in the full study.

Pilot Study Interview Protocol

CSI Community Study Interview for Identified Partners or Stakeholders (spring 2000)

Background

Can you provide a little background information for me:

- How long have you been in _____? What is your role/position in_____?
- How did you come to occupy this role/position?
- Can you tell me what it is that your position consists of (i.e., what are your responsibilities)?
-

Stakeholder Questions

1. How has the school has changed since the recent reform?
2. How would you define the boundaries of the school's "community"?
   Rationale: There are multiple definitions of community, from the district to the student level. It is important to elicit as many perceptions of this term as possible to accurately understand the relationships between schools and their overlapping "communities."
3. How would you say that the community has changed since the recent reform?
   Rationale: If respondents perceive the "community" to be the school, the students, or the district, they may be able to talk about how increased support for math and science has affected this community.
4. Are the changes in the school and the changes in the community connected to one another, and if so, how?
5. Can you describe any local organizations agencies, businesses, universities, parent groups, or persons that engage with the school to assist the school in its efforts of reform? (e.g., these might include community organizations, local politicians, clergy, parents, community activists, or other external partners).
   Rationale: The "emic" identification of stakeholders is a more accurate description of the individuals and organizations that support math and science (or education in general). Individuals may be aware of relationships that have not been identified in archival research, document review, etc.
6. Can you tell me a little about how ____ became involved with the high school? (i.e., how the relationship came about, how long has this relationship existed, what does the relationship or partnership consist of, etc)
7. Did your school have connections to any of these groups prior to the reform and if so, can you describe any changes that may have occurred in this relationship since reform?
8. Can you describe any resources or assets these groups or persons provide? (e.g., money, materials, time, staff or expertise, relationships)? n addition to their connection with the school, are any of these groups connected to one another?
9. What would you say are the strengths of these relationships (please distinguish between the different partnerships that you are describing – i.e., if one partnership has a particular strength but another does not, please make this distinction for us)?
10. What would you say are the difficulties associated with these relationships or partnerships (if any)?
11. How would you say that the local (school) community relates to the school (e.g., perceptions, activities and involvement with either the school or with the partnerships related to the school)?
12. What do you perceive to be some of the continuing needs of the high school?
13. In what direction do you see the school going in the near future? In the distant future? How do you see the involvement of these various "stakeholders" in this projection?
14. Finally, can you offer us some names of persons or groups with whom we might speak regarding the partnerships we've just been discussing?

Study of the Community Context

Purpose

The instruments for the Study of the Community Context consisted of three protocols, one for school level staff, the second for parent organizations, school governance, district staff, corporate and community partners, and the last for parents of students. They were created to for several purposes: facilitate semi-structured interviews to gather information about the mobilization of stakeholders in each of the four sites; gather information about stakeholders and partners at two high schools in each site; help researchers understand the multiple definitions of "community" and "partners;" and to secure measures of importance and effectiveness of partnerships and stakeholder relationships.

For What Study?

The Study of the Community Context is part of the Policy Study to investigate the mobilization of stakeholders (Driver 4) in the implementation of the Urban Systemic Initiative.

Relationship to Other Parts of the Study:

Questions on the principal interview and district interview protocols were used in the design of the community study protocols in an attempt to collect similar information from multiple sources. For example, question 11 in the principal interview was repeated in the district interview (question 12) and used in the community study protocols. The questions were adapted to gather more specific information about the roles and responsibilities of the respondents.

Relationship of Items to NSF's Six Drivers

Instrument	Sample	Driver 1	Driver 2	Driver 3	Driver 4	Driver 5	Driver 6	Proposed Driver 7
Protocol #1	Stakeholders – School site				1B, 1C, 3B, 3C			
Protocol #2	Stakeholders Governance, community, district				4A, 4B			

Development Process

The protocol designs were discussed during the meeting of pilot study researchers on September 17, 2000. After review by research team members, the designs were finalized for the Chicago wave of research (September-October 2000). The statement of informed consent and space for respondent's signature were inserted at the top of each protocol to ensure compliance with consent requirements. The protocols were changed to eliminate the information about birth date (unnecessary information for these informants and challenged by three interviewees) and to add space for respondents to identify and rank the importance and effectiveness of stakeholders. The adapted instruments were used to collect data during the remaining three site visits (Memphis – October-November 2000, Miami – January-February 2001, and El Paso – February-March 2001).

Coding and Analysis

A coding rationale and NUD*IST coding tree have been developed by an anthropologist, C. Kelly, who served as a consultant with the project during the pilot study. These categories form the framework for coding and analysis of the information from this study. All field notes, impromptu (non-taped) interviews, formal (taped) interviews, and other narrative information will be entered into NUD*IST in order to identify key themes and information about stakeholder mobilization at each site.

Protocols for Stakeholder Interviews

INTERVIEW PROTOCOL #1

School – level staff

(Partnership coordinators, school-to-work staff, counselors, volunteers, teachers)

Informed Consent: The purpose of this research has been explained to me. I understand there are no risks involved in my participation and that my identity (and other personal information) will be kept confidential by research staff.

Name:_____ Signature:_____

Position:_____

Gender:_____F _____M

Race/Ethnicity: White(non-Hispanic)___ Hispanic_____ African American_____

Asian/Pacific Islander_____ Native American_____ Other_____

- How long have you been in (this organization)?
- What is your role/position in (this organization)?
- How did you come to occupy this role/position?
- Can you tell me what it is that your position consists of (i.e., what are your responsibilities)?

STAKEHOLDER QUESTIONS

1. A. In what ways do you think partnerships and stakeholder involvement in the school have changed since the recent USI reform (1994 – 2000)?
   B. Can you rank the importance of stakeholder involvement to students' achievement and attainment on a scale of 0 – 3? Please explain your ranking

0	1	2	3
Not important			Extremely Important

   C. Can you rank the effectiveness of stakeholder involvement to students' achievement and attainment on a scale of 0 – 3? Please explain your ranking.

0	1	2	3
Not effective			Extremely effective

2. Definitions and perceptions of "community"
   A. How would you define the boundaries of the school's "community?" (Probe for specifics about neighborhoods or the community surrounding the school)
   B. Would students and parents use the same definition(s)? How might they differ?
3. How does the local community or neighborhood relate to the school (e.g., perceptions, activities and involvement with either the school or with the partnerships related to the school)?
4. A. Can you identify any "partners" that engage with the school to assist the school in its efforts of reform? Please rank them in terms of their importance for improving students' math and science achievement and attainment (0 – not important to 3 – extremely important)

0	1	2	3
Not important			Extremely Important

   B. Please rank the effectiveness of these "partners" in contributing to the improvement of math and science achievement and attainment (0 – not effective to 3 – extremely effective)

0	1	2	3
Not effective			Extremely effective

Type of organization	Name	Nature of partnership	Ranking
Local organizations			
Agencies			
Businesses			
Universities			
Parent groups			
Individuals (politicians, clergy, parents, community activists)			
Community organizations			

INTERVIEW PROTOCOL #2
PTA/PTO, SAC, LSC Members
District level Staff/Corporate and Community Partners

1. How long have you been involved with (this organization)?
   How are you involved?
   What prompted your involvement?
   Do you hold a specific position within (this organization)?
   Are there specific terms (length of participation) associated with your position?
2. Are you aware of the reform efforts at the school? (PROBE FOR KNOWLEDGE OF USI. Use names of programs or activities funded by USI if respondent is not familiar with USI specifically.)
3. Definitions and perceptions of "community"
   How would you define the boundaries of the school's "community"?
   Would students and parents use the same definition(s)? How might they differ?
   Do you think the math and science reform has affected the community (Probe: either the school's "community" or the community-at-large)? If yes, how.

STAKEHOLDER INFORMATION

4. A. Can you identify any "partners" that engage with the school to assist the school in its efforts of reform? Please rank them in terms of their importance for improving students' math and science achievement and attainment (0 – not important to 3 - extremely important)
   B. Please rank the effectiveness of these "partners" in contributing to the improvement of math and science achievement and attainment (0 – not effective to 3 – extremely effective)

0	1	2	3
Not effective			Extremely effective

Type of organization	Name	Nature of partnership	Ranking
Local organizations			
Agencies			
Businesses			
Universities			
Parent groups			
Individuals (politicians, clergy, parents, community activists, external partners)			
Community organizations			

INTERVIEW PROTOCOL #3
Parents of Students (Student Engagement Study, school staff, volunteers, etc.)

1. What do you know about the Urban Systemic Initiative for math and science reform at your child's school? (Probe with names of specific programs or activities funded by USI).
2. How much do you know about the reforms in math and science at your child's school?
3. Have you seen any changes in your child's math and science instruction since he or she started high school?
4. Is the homework different from the homework (schoolwork) that you did in high school? If so, how?
5. If you have older children, is the homework (schoolwork) different from the homework the older children did in high school? If so, how?
6. Do your child's classes seem "different" than classes were five years ago? **PROBE**
7. What does your child's school tell you about what is going on, specifically math and science instruction or reform? How do you get the information (flyers, brochures, calls, letters, other)?
8. How does your child's school help you better understand the math and science reforms? **PROBE**
   Events like math fairs or science fairs
   Workshops on homework assistance or
   Workshops on understanding the reform programs;
   Trainings for parents in the new instruction and course content
   Family math or Family science nights at the school
9. Have you attended any of these?
10. Do you think that these kinds of supports need to be available to parents?

11. A. What do you know about the math and science coursework needed for high school graduation or college?
    B. How important to you is your child taking algebra, geometry, and the science courses necessary for admission to college? Rank from 0 – not important to 3 – extremely important. Please explain your ranking.
12. What does your child's math and/or science teacher tell you about math and science instruction or reform? How do you get the information (conferences, meetings with the teacher, flyers, calls, letters, other)?
13. What classes are your child taking? (PROBE – IB, AP, etc.)
14. Do you help your child to choose his/her class schedule?
15. Please tell us your impression of your child's experience with math instruction. **PROBE**
    What do you hear him/her saying about the class?
    The class content?
    Do you see your child using his/her math and science knowledge in activities or projects around the house?
16. Please tell us your impression of your child's experience with science instruction. **PROBE**
    What do you hear him/her saying about the class?
    The class content?
    Do you see your child using his/her math and science knowledge in activities or projects around the house?
17. **Testing** – tell us what you think about the state testing being done in schools today (TCAP, TAAS, FCAT, CASE).
    Do you help your child prepare for these tests? If so, how?
    Do you understand how these tests and scores are used to guide your child's school program?
18. What resources in your neighborhood are available to help your child improve/strengthen his or her math or science performance?

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