A FRAMEWORK FOR ASSESSING THE GROWTH OF THE CAPACITY OF A SCHOOL DISTRICT FOR IMPLEMENTING ELEMENTARY SCIENCE EDUCATION REFORM

OVERVIEW

This framework is intended to provide a set of questions that will review the degree to which and the ways in which a school district is developing the capacities and policies that are necessary to develop and sustain a standards-based elementary science education program. The Framework also documents the conditions that most influence the probability that a elementary science reform effort will succeed. This framework can be used by outside evaluators to monitor the degree to which a district is making progress toward a standards-based program. But it can also be used by the district itself, as a self-assessment tool and, perhaps more importantly, as a means to promote a dialogue within the district about the status of its current efforts to improve the elementary science program. Finally, this framework can also be used to provide a longitudinal view of how the district's capacities for reform are changing over time.

The theory that lies behind this framework may be stated very simply as follows:

- (1) Student success in elementary science depends upon classrooms that provide a steady and daily diet of high quality science instruction. (It is well known that in most districts in the United States both the quantity and quality of elementary science instruction is lacking.)
- (2) Good classroom instruction that takes place in every classroom in the district depends upon the presence of a solid district-wide elementary science <u>program</u>. Such a program includes good curriculum, readily available and well-designed materials, and supportive professional development activities.
- (3) To establish such a program is not easy. Few districts across the United States can boast of a high quality elementary science program that reaches of all its students. To put such a program in place, and to sustain it, a lot of work must be done. And this work does not happen automatically, but rather it requires a district to develop a set of capacities – each of which is necessary but not sufficient to create a standards-based district-wide elementary science program.



The capacities, policies and conditions outlined in this framework are not mere theoretical constructs (although they are congruent with a vision of systemic reform). Rather, the capacities that are listed here are those that emerge from a five-year study of twelve urban school districts¹, all of whom are part of the Center for Urban Science Education Reform. (For more detail about CUSER and for a thorough explication of the framework, see Parts One and Two ofReport =name...)

¹ Fall River, MA; Springfield, MA; Worcester, MA; Portland, OR; Tucson, AZ; Pueblo, CO; Ft. Wayne, IN; South Bend, IN; Spring Branch, TX; Beaumont, TX; Jackson, MS; and Fayette County, KY.

I. VISION AND REALITY

A Widely-Shared Vision of Good Science Teaching. The degree to which the district/project² has been able to create, articulate and build consensus around <u>an</u> <u>explicit and concrete instructional vision of what good science instruction looks</u> <u>like</u>. (This vision would, for example, outline the range of instructional approaches, the underlying philosophies, as well as the scientific subject matter to be included.)

1	2	3	4	5	6	
Very	/ Low		Some	Very High		Unknown
E	B) Curr	ent S	Status			
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1 Very	Z V Low	5	Some	y Very High	U	Unknown
1 Very C	z V Low C) Most	t Lik	Some ely Statu	Very High s in Two Years	5	Unknown
1 Very C	$\frac{2}{2}$ Low (C) Most	t Lik	Some ely Statu 4	Very High s in Two Years 5	5 6	Unknown

A) Status at the Start of the Reform Effort

² Throughout this report we refer to the district/project as the agent that is propelling the elementary science education reform effort. What is important is the degree to which the project has helped the targeted district(s) develop their own internal capacities for developing and sustaining a high quality science program. Thus, ultimately, it is the district that must invest in and come to value the requisite capacities.

2) A Widely-Shared Programmatic Vision. The degree to which the district/project has been able to develop, articulate and build consensus around <u>an explicit and</u> <u>concrete vision of what the desired elementary science program will look like</u>. (This vision would, for example, outline the key program components including specific kits to be used at each grade level, additional activities beyond the kits such as field trips or science fairs, and perhaps the use of additional reading materials.)

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1	Z	3	4	5	0	_
Very	y Low		Some	Very Hig	h	Unknown
I	B) Curr	ent S	tatus			
1	2	3	4	5	6	
Verv	y Low		Some	Very Hig	h	Unknown
(C) Most	t Like	ely Stat	tus in Two Ye	ars	
(C) Most	t Like	ely Stat	us in Two Ye	ars	
(1 Very	C) Most 2 y Low	t Like 3	ely Stat 4 Some	us in Two Ye 5 Very Hig	ars 6 jh	Unknown
(1 Very I	C) Most 2 y Low D) Over	t Like 3 all Co	ely Stat 4 Some entributi	us in Two Ye 5 Very Hig ion of CUSER	ears 6 jh to this o	Unknown capacity
(1 Very I 1	 C) Most 2 y Low D) Over 2 	t Like 3 all Co	ely Stat 4 Some ontributi 4	us in Two Ye 5 Very Hig ion of CUSER 5	ears 6 3h to this 6 6	Unknown capacity

3) A High Quality Vision of Both Good Science Instruction and an Effective Science Program. The degree to which the district/project's vision of science instruction and its science program is of high quality, e.g., aligned with the National Science Education Standards, inquiry-rich, coherent and comprehensive, and developmental:

1 2	3 4	5	6
Very Low	Some	Very High	Unknown
B) Cur	rent Status		
1 2	3 4	5	6
Very Low	Some	Very High	Unknown
C) Mos	st Likely Statu	ıs in Two Yea	rs
C) Mos	st Likely Statu	ıs in Two Yea	rs
C) Mos $\frac{1}{1}$ 2 Very Low	st Likely Statu 3 4 Some	ns in Two Yea 5 Very High	rs 6 Unknown
C) Mos 1 2 Very Low D) Ove	et Likely Statu 3 4 Some erall Contribut	is in Two Yea 5 Very High ion of CUSEI	rs 6 Unknown R to this capacity
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A FRAMEWORK: ASSESSING THE GROWTH OF DISTRICT CAPACITY MAY 1999

4) **A concrete vision of the development and implementation process** -- The degree to which project leaders are able to develop agreement about and support for the specific steps of the process that will allow for the implementation of a standards-based science program on a district-wide basis.

4) **A Knowledge of Classroom Realities.** The degree to which the district/project is interested in and willing to examine <u>the realities in the field</u>. The degree to which the project/district has in place multiple mechanisms for assessing the quantity and quality of elementary science instruction that is taking place district-wide. (Such mechanisms generate easily understandable data that can help district leaders understand, for example, which kits and lessons are being taught, the quality of that teaching, and the degree to which program supports, such as professional development and materials distributions, are working.)

1 2	3	4	5	6
Very Low	Some		Very High	Unknown
B) Cu	urrent Statu	S		
1 2	3	4	5	6
Very Low	y Some		Very High	Unknown
C) M	ost Likely S	Statı	ıs in Two Yea	ırs
$\frac{C}{1} \frac{M}{2}$	ost Likely S	Statu 4	us in Two Yea	urs 6
C) M 1 2 Very Low	ost Likely S 3 7 Some	Statı 4	us in Two Yea 5 Very High	rrs 6 Unknown
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$\begin{array}{c} \text{C) } \text{M} \\ \hline 1 & 2 \\ \text{Very Low} \\ \hline \text{D) } \text{O} \\ \hline \hline 1 & 2 \end{array}$	ost Likely S 3 5 5 5 5 5 5 5 5 5 5 5 5 5	Statu 4 ribut	us in Two Yea 5 Very High tion of CUSEI 5	rrs 6 Unknown R to this capacity 6

5) A System for Gathering and Using Data. The degree to which the project has the capacity to both gather and use data. Data about program implementation, and about the realities of classroom science instruction can be used both for program improvement and for "making the case" for the program to external audiences. (Such data might include a teacher and school database; information about the current status of science teaching; teacher beliefs and attitudes; the success of program implementation; and/or evidence of student success and achievement.)

1	2	3	4	5	6	
Very	y Low	Some		Very High	Unknown	
]	B) Curre	ent Statu	S			
1	2	3	4	5	6	
Very	y Low	Some		Very High	Unknown	
(C) Most	Likely	Stati	us in Two Yea	rs	
1	2	3	4	5	6	
Very	y Low	Some		Very High	Unknown	
I	D) Over	all Cont	ribu	tion of CUSEI	R to this capacity	
1	2	3	4	5	6	
Very	y Low	Some		Very High	Unknown	

A) Status at the Start of the CUSER Affiliation

II. LEADERSHIP

6) An Elementary Science "Point Person". The degree to which the district/project has identified, developed, and supported one individual person as a "point person" for <u>elementary science education reform</u>. (An effective point person is an individual working [full time] at the district level who has the mandate, expertise, commitment, energy, knowledge, and position to further elementary science education reform in the district.)

1 2	3	4	5	6	
Very Low	Some		Very High	Unknown	
B) Cur	rent Statu	S			
1 2	3	4	5	6	
Very Low	Some		Very High	Unknown	
C) Mo	st Likely S	Statu	ıs in Two Yea	rs	
C) Mo	st Likely S	Statu	ıs in Two Yea	rs	
$\frac{C) Mo}{1 2}$ Very Low	st Likely S	statu 4	us in Two Yea 5 Very High	rs 6 Unknown	
C) Mo 1 2 Very Low D) Ove	st Likely S 3 Some erall Contr	Statu 4 ibut	us in Two Yea 5 Very High tion of CUSEI	rs 6 Unknown ₹ to this capacity	
C) Mo 1 2 Very Low D) Ove 1 2	st Likely S 3 Some erall Contr 3	Statu 4 ibut	us in Two Yea 5 Very High tion of CUSEF 5	rs 6 Unknown R to this capacity 6	

7) *Core Group.* The degree to which there exists a committed and empowered <u>core</u> <u>group</u> of people (a project-based "leadership team") either formally or informally designated as responsible for furthering the improvement of elementary science education in the district. (An effective core group consists of individuals who share a common vision, are highly motivated, work well together, and bring complementary skills to the reform effort.)

1 2	3	4 5	6
Very Low	Some	Very High	Unknown
B) Cu	irrent Status		
1 2	3	4 5	6
Very Low	Some	Very High	Unknown
1 2	3	4 5	6
1 2	3	4 5	6
very Low	Some	very High	Unknown
D) O	verall Contrib	oution of CUSE	ER to this capacity
1 2	3	4 5	6
Very Low	Some	Very High	Unknown
Comment	s:	very mgn	Clikilowii
e e a milente	•		

8) Science Resource Teachers. The degree to which the district has established positions for and been able to recruit skilled teachers so that the can serve as <u>"Science Resource Teachers" or "Teachers on Special Assignment."</u> (Effective Resource Teachers must themselves be good teachers of science, have experience in new curricula and methods, and be good at working in multiple modes of professional development.)

1 2		3	4	5	6
Very Lo	w	Some	•	Very High	Unknown
B) (Current	Status			
1 2	2	3	4	5	6
Very Lo	w S	Some		Very High	Unknown
C	Acat I :	Iroly C	tota	in Two Voor	10
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$\frac{C}{1} \frac{1}{2}$	Most Li	kely St 3 Some	tatus	s in Two Year 5 Very High	rs 6 Unknown
$\begin{array}{c} C) M \\ \hline 1 & 2 \\ Very Lor \\ D) C \end{array}$	Most Li	kely St 3 Some Contri	tatus 4 buti	s in Two Year 5 Very High on of CUSER	6 Unknown to this capacity
$\begin{array}{c} C) M \\ \hline 1 & 2 \\ Very Lor \\ D) C \\ \hline 1 & 2 \end{array}$	Most Li	kely Standard 3 Some Contri 3	tatus 4 buti 4	s in Two Year 5 Very High on of CUSER 5	6 Unknown to this capacity 6

9) *Science Lead Teachers*. The degree to which the district has been able to identify, recruit, train and deploy <u>a cadre of strong science lead teachers</u>. (These are teachers who are still teaching full-time but are willing to assist the reform effort by leading workshops, doing demonstration teaching, working of district task forces or contributing in a multitude of other ways.)

1 0	2		~	<i>,</i>
1 2	3	4	5	6
Very Low	Some		Very High	Unknown
B) Cu	rrent Statu	s		
1 2	3	4	5	6
Very Low	Some		Very High	Unknown
C) M	ost Likely S	Statu	ıs in Two Yea	rs
C) M	ost Likely S	Statu	ıs in Two Yea	rs
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C) Model 1 2 Very Low	ost Likely S 3 Some	Statu 4	is in Two Yea 5 Very High	rs 6 Unknown
C) M 1 2 Very Low D) Ov	3 Some verall Contr	Statu 4	ts in Two Yea 5 Very High tion of CUSEI	rs 6 Unknown R to this capacity
$\begin{array}{c} C) M \\ \hline 1 & 2 \\ Very Low \\ D) Ov \\ \hline 1 & 2 \end{array}$	ost Likely S 3 Some verall Contr 3	Statu 4 ribut	tion of CUSEF	rs 6 Unknown R to this capacity 6

10) **Principals**. The degree to which the district/project has been able to identify, support and draw upon a group of **school principals** who are leading the science reform effort in their own schools; in addition, they are knowledgeable about, and actively involved in, the effort to improve elementary science education in this district:

1 2	3	4	5	6
Very Low	Some		Very High	Unknown
B) Cu	rrent Status	5		
1 2	3	4	5	6
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$\frac{\text{C) Mo}}{1 2}$	ost Likely S	tatu	tery mgn us in Two Yea	rs 6
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C) Mo C) Mo 1 2 Very Low D) Ov	Some 3 Some verall Contri	tatu 4 ibut	very High s in Two Yea 5 Very High ion of CUSEI	rs 6 Unknown ₹ to this capacity
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11) **District Elementary Science Coordinator or Science Specialist**. The degree to which the district has designated a **permanent position** (and accompanying support) **for a <u>district administrator</u>** who is expected to provide strong and stable leadership for the effort to promote a district-wide standards-based elementary science education reform effort:

1 2	3	4	5	6
Very Low	Some		Very High	Unknown
B) Cu	rrent Statu	S		
1 2	3	4	5	6
Very Low	Some		Very High	Unknown
$\frac{C}{1} \frac{M}{2}$	ost Likely S	Statı 	ıs in Two Yea	rs6
C) Motor $\frac{1}{1}$ C) Very Low	ost Likely S 3 Some	Statu 4	us in Two Yea 5 Very High	rs 6 Unknown
C) Me 1 2 Very Low D) Ov	ost Likely S 3 Some verall Contr	Statu 4	us in Two Yea 5 Very High tion of CUSEI	rs 6 Unknown R to this capacity
$\begin{array}{c} C) M \\ \hline 1 & 2 \\ Very Low \\ \hline D) Ov \\ \hline 1 & 2 \end{array}$	ost Likely S 3 Some verall Contr 3	Statu 4 ribut	us in Two Yea 5 Very High tion of CUSEI 5	rs 6 Unknown ₹ to this capacity 6

12) **The Superintendent.** The degree to which the **District Superintendent** is interested in the success of the elementary science education program and is willing to assume a proactive role, making elementary science education reform a public priority. Also, the degree to which the Superintendent is able and willing to provide the resources necessary to further the elementary science education reform effort in this district at this time:

1 2	3 4	5	6
Very Low	Some	Very High	Unknown
B) Curr	ent Status		
1 2	3 4	5	6
Very Low	Some	Very High	Unknown
C) Mos	t Likely Stati	ıs in Two Yea	rs
C) Mos	t Likely Statu	ıs in Two Yea	ITS
C) Mos 1 2 Very Low	t Likely State	us in Two Yea	rs 6 Unknown
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C) Mos 1 2 Very Low D) Ove 1 2	t Likely Statu 3 4 Some rall Contribut 3 4	us in Two Yea 5 Very High tion of CUSEI 5	urs 6 Unknown R to this capacity 6

13) *Administrative Supporters and Science Advocates.* The degree to which there exists at least a few <u>key upper-level district administrators</u> (e.g., the assistant superintendent of Curriculum and Instruction, Area Superintendents, a key Financial Officer) who are involved in and actively supporting the elementary science education reform:

1 2	3	4	5	6
Very Low	Some		Very High	Unknown
B) Cu	rrent Statu	S		
1 2	3	4	5	6
Very Low	Some		Very High	Unknown
5				
$\frac{C}{1} = \frac{1}{2}$	st Likely S	Statu 	us in Two Yea	rs 6
$\frac{C}{1} \frac{C}{2}$	st Likely S	Statu 4	is in Two Yea	rs 6 Unknown
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C) Mo 1 2 Very Low D) Ov 1 2	st Likely S 3 Some erall Contr 3	Statu 4 ribut	us in Two Yea 5 Very High tion of CUSEI 5	rs 6 Unknown R to this capacity 6

14) *School Board Members*. The degree to which the <u>School Board</u> is knowledgeable about and supportive of the elementary science education reform effort:

1 2	3 4	5	6
Very Low	Some	Very High	Unknown
B) Cur	rent Status		
1 2	3 4	5	6
Very Low	Some	Verv High	Unknown
C) Mos	st Likely Stat	us in Two Yea	rs
$\frac{C}{1} = \frac{1}{2}$	st Likely State	us in Two Yea	irs6
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$\frac{C) \text{ Mos}}{1 2}$ $\frac{1}{2}$ \frac	st Likely Statu 3 4 Some	very High us in Two Yea 5 Very High tion of CUSEI	This will be a constrained of the second sec
$\begin{array}{c} \text{C) Mos} \\ \hline 1 & 2 \\ \text{Very Low} \\ \hline D) \text{ Ove} \\ \hline 1 & 2 \end{array}$	Some 3 4 Some vrall Contribut 3 4	very High s in Two Yea Very High tion of CUSEI	6 Unknown R to this capacity 6

15) Elementary Science Classroom "Exemplars". The degree to which there are available in the district **sources of classroom expertise** (e.g., classroom teachers who can present visible examples and models of exemplary, inquiry-based science teaching):

1		2	1	5	6
ı Very	Low	Some	4	Very High	Unknown
E	B) Curre	ent Status	5		
1	2	3	4	5	6
Very	Low	Some		Very High	Unknown
1	2	3	4	5	6
1 Verv	2 Low	3 Some	4	5 Very High	6 Unknown
I	D) Over	all Contri	ibu	tion of CUSEF	R to this capacity
1	2	3	4	5	6
Very	Low	Some		Very High	Unknown
very Com	ments:	Some		very Hign	Unknown

Scientists and Scientific Expertise. The degree to which the district/project has developed a relationship with and has working access to <u>sources of scientific expertise</u> (e.g., university faculty or graduate students, local industry scientists, high school teachers, local science museum staff). The degree to which the district/project helps design and provide appropriate and useful supportive roles for these people (e.g., enabling them to ensure the content integrity of kits, or teach science content to elementary teachers, etc.):

1 2	3	4	5	6
Very Low	Some		Very High	Unknown
B) Cu	irrent Statu	S		
1 2	3	4	5	6
Very Low	Some		Very High	Unknown
C) Me	ost Likely S	Statı	ıs in Two Yea	rs
C) Mo	ost Likely S	Statu 4	ıs in Two Yea	rs 6
$\frac{C) Me}{\frac{1}{2} Very Low}$	ost Likely S	Statu 4	us in Two Yea 5 Very High	rs 6 Unknown
C) Me 1 2 Very Low D) Ov	3 Some verall Contr	Statu 4	us in Two Yea 5 Very High tion of CUSEI	rs 6 Unknown R to this capacity
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Partner Organizations. The degree to which there are symbiotic <u>connections or</u> <u>partnerships between the project/district and other institutions</u>, agencies, and/or program aimed at science education improvement (e.g., Boces, universities, science museums, industry roundtables; other NSF reform projects):

A) Stat	us at the Star	t of the CUSE	R Affiliation
1 2	3 4	5	6
Very Low	Some	Very High	Unknown
B) Curr	rent Status		
1 2	3 4	5	6
Very Low	Some	Very High	Unknown
$\frac{C) Mos}{1 2}$	t Likely State $\frac{3}{4}$	is in Two Yea	urs6
Very Low	Some	Very High	Unknown
D) Ove	rall Contribu	tion of CUSEI	R to this capacity
1 2	3 4	5	6
Very Low	Some	Very High	Unknown
Comments:			

Political Leadership. The degree to which there is **<u>strong external political leadership</u>** (individual or group) that is organized and committed so that it is effective in playing an advocacy role for elementary science, both within and outside of the district .

1 2	3 4	5	6	
Very Low	Some	Very High	Unknown	
B) Cur	rent Status			
1 2	3 4	5	6	
Very Low	Some	Very High	Unknown	
$\frac{C}{1} \frac{Mo}{2}$	st Likely State	us in Two Yea	rs	
$\frac{C) Mo}{\frac{1}{2} Very Low}$	st Likely State	us in Two Yea 5 Very High	nrs 6 Unknown	
C) Mo 1 2 Very Low D) Ove	st Likely State 3 4 Some erall Contribu	us in Two Yea 5 Very High tion of CUSEI	urs 6 Unknown R to this capacity	
$ \begin{array}{c} C) Mo \\ \hline 1 & 2 \\ Very Low \\ D) Ove \\ \hline 1 & 2 \end{array} $	st Likely State 3 4 Some erall Contribu 3 4	us in Two Yea 5 Very High tion of CUSEI 5	urs 6 Unknown R to this capacity 6	

15) *National connections and expertise*. The degree to which district <u>leaders are connected</u> <u>with and involved in professional associations</u>, networks, and national projects involving science and math reform (e.g., NSTA, CUSER, NSRC, Exploratorium Institute for Inquiry):

1 2	3 4	5	6	
Very Low	Some	Very High	Unknown	
B) Cur	rent Status			
1 2	3 4	5	6	
Very Low	Some	Very High	Unknown	
C) Mos	st Likely Sta	tus in Two Yes	ars	
Very Low	Some	Very High	Unknown	
C) Mos	st Likely Sta	tus in Two Yea	ars	
Very Low	Some	Very High	Unknown	
C) Mos	st Likely Sta	tus in Two Yea	ars	
1 2	3 4	5	6	
Very Low	Some	Very High	Unknown	
Very Low	Some	Very High	Unknown	
C) Mos	st Likely Sta	tus in Two Yea	ars	
1 2	3 4	5	6	
Very Low	Some	Very High	Unknown	
Very Low	Some	Very High	Unknown	
C) Mos	st Likely Sta	tus in Two Yea	ars	
1 2	3 4	5	6	
Very Low	Some	Very High	Unknown	
D) Ove	erall Contribu	ition of CUSE	R to this capacity	
Very Low	Some	Very High	Unknown	
C) Mos	st Likely Sta	tus in Two Yea	ars	
1 2	3 4	5	6	
Very Low	Some	Very High	Unknown	
D) Ove	erall Contribu	ution of CUSE	R to this capacity	
1 2	3 4	5	6	

III. REFORM INFRASTRUCTURE

16) *Curriculum*. Overall extent to which the district has the capacity and will to identify, select and implement district-wide a <u>standards-based and inquiry-based curriculum</u> in elementary science:

1	2	3	4	5	6
Very Lo	ow	Some		Very High	Unknown
B)	Curren	nt Status	5		
1	2	3	4	5	6
		C		Vory High	Unknown
Very Lo	ow	Some		very mgn	Ulkilowii
$\frac{\text{C}}{1}$	Most 1 $\frac{1}{2}$	Some Likely S	statu	s in Two Yea	rs6
C) C) C) 1 Very Lo	ow Most l 2 ow	Some Likely S 3 Some	statu	very High us in Two Yea 5 Very High	rs 6 Unknown
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Very Lo C) 1 Very Lo D) 1	Most 1 2 ow Overa 2	Some Likely S 3 Some Il Contr 3	statu 4 ibut	very High is in Two Yea 5 Very High ion of CUSEF 5	rs 6 Unknown R to this capacity 6

A) Status at the Start of the CUSER Affiliation

17) *Instructional Materials.* Overall extent to which the district has the capacity and will to establish and implement a system for providing all its teachers with the <u>instructional</u> <u>materials</u> necessary to implement a district-wide inquiry-based ("hands-on") curriculum in elementary science:

1	2	3	4	5	6	
Very	/ Low	Some		Very High	Unknown	
I	B) Curr	ent Statu	S			
1	2	3	4	5	6	
Verv	Low	Some		Very High	Unknown	
(7) Most	Likely	Stati	is in Two Yea	rs	
(C) Most	Likely S	Statu	us in Two Yea	rs6	
(1 Very	C) Most $\frac{2}{2}$ Low	Likely S 3 Some	Statu 4	us in Two Yea	rs 6 Unknown	
(1 Very I	C) Most 2 7 Low D) Over	Likely S 3 Some all Contr	Statu 4	us in Two Yea 5 Very High tion of CUSEI	rs 6 Unknown R to this capacity	
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A) Status at the Start of the CUSER Affiliation

18) Professional Development for Teachers. Overall extent to which the district has the capacity and will to implement a coherent and districtwide professional development program that <u>can support teachers</u> in gaining the knowledge, skills and inclination to implement a standards-based and inquiry-based curriculum in elementary science:

1	2	3	4	5	6	
Very I	LOW	Some		Very High	Unknown	
B)	Curre	ent Statu	S			
1	2	3	4	5	6	
Very I	LOW	Some		Very High	Unknown	
C)	Most	Likely S	Stati	ıs in Two Yea	rs	
C)	Most	Likely S	Statı	ıs in Two Yea	rs	
C) 1 Very I	Most 2 Low	Likely S 3 Some	Statu 4	us in Two Yea	rs 6 Unknown	
C) 1 Very I D)	Most 2 Low Overa	Likely S 3 Some all Contr	Statu 4	us in Two Yea 5 Very High tion of CUSEI	rs 6 Unknown R to this capacity	
$\frac{C}{1}$ Very I D) $\frac{1}{1}$	Most 2 Low Overa	Likely S 3 Some all Contr 3	Statu 4 ibut	us in Two Yea 5 Very High tion of CUSEF 5	rs 6 Unknown R to this capacity 6	

19) Professional Development for District and Project Leaders. The degree to which the district/project has the intention and capacity to provide appropriate ongoing <u>professional</u> <u>development experiences for those who are the key leaders and supporters of the science education reform effort</u> (e.g., District science specialists, TOSAs; principals...).

1 2	3	4	5	6
Very Low	Some		Very High	Unknown
B) Cu	rrent Statu	S		
$\frac{1}{1}$ 2	3	4	5	6
Very Low C) Mo	Some	Statı	Very High 1s in Two Yea	Unknown rs
Very Low C) Mo $\frac{1}{1}$	Some	Statu	Very High 1s in Two Yea	Unknown rs
Very Low C) Mo 1 2 Very Low	Some ost Likely 3 3 Some	Statu 4	Very High us in Two Yea 5 Very High	Unknown rs 6 Unknown
Very Low C) Mo 1 2 Very Low D) Ov	Some ost Likely S 3 Some erall Cont	Statu 4 ribut	Very High us in Two Yea 5 Very High tion of CUSEI	Unknown rs 6 Unknown R to this capacity
$\frac{C}{1} \frac{C}{2}$ Very Low $\frac{C}{1} \frac{2}{2}$ Very Low $\frac{D}{1} \frac{C}{2}$	Some ost Likely 3 3 Some erall Contr 3	Statu 4 ribut	Very High us in Two Yea 5 Very High tion of CUSEF 5	Unknown rs 6 Unknown R to this capacity 6

20) *Financial Resources*. Overall extent to which the district has the capacity and will to acquire and designate the <u>financial resources necessary to implement a district-wide standards-based and inquiry-based program</u> in elementary science:

1 2	3	4	5	6
Very Low	Some		Very High	Unknown
B) Cu	rrent Statu	S		
1 2	3	4	5	6
Very Low	Some		Very High	Unknown
Very Low C) Mo $\frac{1}{2}$	Some ost Likely S	Statu 4	Very High 1s in Two Yea 5	Unknown rs <u> </u>
Very Low C) Mo 1 2 Very Low	Some ost Likely S 3 Some	Statu 4	Very High us in Two Yea 5 Very High	Unknown .rs 6 Unknown
Very Low C) Mo 1 2 Very Low D) Ov	Some ost Likely S 3 Some rerall Contr	Statu 4	Very High us in Two Yea 5 Very High tion of CUSEI	Unknown rs 6 Unknown ₹ to this capacity
Very Low C) Mo 1 2 Very Low D) Ov 1 2	Some Ost Likely S 3 Some verall Contr 3 3	Statu 4 ibut	Very High us in Two Yea 5 Very High tion of CUSEF 5	Unknown rrs 6 Unknown R to this capacity 6

IV. DISTRICT POLICIES AND PRIORITIES

21) *District Science Standards*. The degree to which the district has <u>reviewed and addressed</u> <u>its own science standards</u>, science framework and/or course of study so that it might better support the envisioned elementary science education reform effort:

1 2	3	4	5	6
Very Low	Some		Very High	Unknown
B) Cu	rrent Statu	s		
1 2	3	4	5	6
	~		Vor II: ab	Unknown
Very Low C) M	Some ost Likely S	Statu	is in Two Yea	rs
Very Low C) M	Some	Statu	very High is in Two Yea	rs
Very Low C) Mathematical Mathematical Control $\frac{1}{1}$ 2 Very Low	Some ost Likely S 3 Some	Statu 4	very High is in Two Yea 5 Very High	rs 6 Unknown
Very Low C) Ma 1 2 Very Low D) Ov	Some ost Likely S 3 Some verall Contr	Statu 4	very High is in Two Yea 5 Very High tion of CUSEF	rs 6 Unknown R to this capacity
Very Low C) Ma 1 2 Very Low D) Ov 1 2	Some Sost Likely S 3 Some verall Contr 3	Statu $ \frac{1}{4} $ ibut $ \frac{1}{4} $	very High is in Two Yea 5 Very High tion of CUSEF 5	rs 6 Unknown R to this capacity 6

A) Status at the Start of the CUSER Affiliation

22) *Formal District Science Assessment Policies*. The degree to which the district has reviewed and addressed <u>its own formal testing policies and practices</u> so that they might better support the envisioned elementary science education reform effort:

A)	Status	at the S	tart	of the CUSEF	R Affiliation	
1	2	3	4	5	6	
Very I	LOW	Some		Very High	Unknown	
B)	Currer	nt Status	5			
1	2	3	4	5	6	
Very L	LOW	Some		Very High	Unknown	
C)	Most I	Likely S	tatu	s in Two Year	'S	
1	2	3	4	5	6	
Very L	LOW	Some		Very High	Unknown	
D)	Overal	ll Contri	ibut	ion of CUSER	to this capacity	
1	2	3	4	5	6	
Very L	LOW	Some		Very High	Unknown	
Comm	ents:					

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23) *Informal Science Assessment Policies*. The degree to which the district/project has supported teachers at the classroom level in <u>developing informal assessment practices</u> so that they might better support this elementary science education reform effort:

A) Statu	is at the S	Star	t of the CUSE	R Affiliation	
1	2	3	4	5	6	
Very	Low	Some		Very High	Unknown	
B) Curr	ent Statu	8			
1	2	3	4	5	6	
Very	Low	Some		Very High	Unknown	
C) Most	Likely S	Stati	ıs in Two Yea	rs	
1	2	3	4	5	6	
Very	Low	Some		Very High	Unknown	
D) Over	all Contr	ibu	tion of CUSEI	R to this capacity	
1	2	3	4	5	6	
Very	Low	Some		Very High	Unknown	
Comr	nents:					

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24) *Science Reform and Site-based Management*. The degree to which the district has designed its elementary science education reform so that it is **supportive of and congruent with school restructuring and site-based managed reforms** (e.g., proactively working with individual schools and/or supporting pilot schools through schoolwide professional development efforts):

1 2	3	4	5	6
Very Low	Some		Very High	Unknown
B) Cu	rrent Statu	IS		
1 2	3	4	5	6
1 4				
C) Mo	Some	Statı	Very High 1s in Two Yea	Unknown
$\frac{1}{C} \frac{2}{Mc}$	Some	Statu	Very High 1s in Two Yea	Unknown urs
$\frac{1}{1} \frac{2}{2}$ Very Low $\frac{1}{1} \frac{2}{2}$ Very Low	Some st Likely 3 Some	Statu 4	Very High 1s in Two Yea 5 Very High	Unknown urs 6 Unknown
$\frac{1}{1} \frac{2}{2}$ Very Low $\frac{1}{1} \frac{2}{2}$ Very Low $\frac{1}{2}$ D) Ov	Some ost Likely 3 Some erall Cont	Statu 4 ribut	Very High us in Two Yea 5 Very High tion of CUSEI	Unknown urs 6 Unknown R to this capacity
$\frac{1}{1} \frac{2}{2}$ Very Low $\frac{1}{1} \frac{2}{2}$ Very Low $\frac{1}{1} \frac{2}{2}$	Some st Likely 3 Some erall Cont 3	Statu 4 ribut	Very High as in Two Yea 5 Very High tion of CUSEI 5	Unknown urs 6 Unknown R to this capacity 6

25) *Science Reform and Literacy*. The degree to which this district has <u>integrated elementary</u> <u>science education reform</u> with its higher priority efforts to promote basic literacy and/or mathematical competency in its elementary students:

1 2	3	4	5	6
Very Low	Some		Very High	Unknown
B) Cur	rent Statu	S		
1 2	3	4	5	6
				·
Very Low C) Mo	Some st Likely S	Statı	Very High 1s in Two Yea	Unknown rs
Very Low C) Mo	Some st Likely S	Statu	Very High 1s in Two Yea	Unknown rs
Very Low C) Mo $\frac{1}{2}$	Some st Likely S	Statu	Very High 1s in Two Yea	Unknown rs 6
Very Low C) Mo 1 2 Very Low	Some st Likely S 3 Some	Statu 4	Very High us in Two Yea 5 Very High	Unknown rs 6 Unknown
Very Low C) Mo 1 2 Very Low D) Ove	Some st Likely S 3 Some erall Contr	Statu 4	Very High us in Two Yea 5 Very High tion of CUSEF	Unknown rs 6 Unknown R to this capacity
Very Low C) Mo 1 2 Very Low D) Ove 1 2	Some st Likely S 3 Some erall Contr 3	Statu 4 ibut	Very High us in Two Yea 5 Very High tion of CUSEF 5	Unknown rs 6 Unknown R to this capacity 6

26) *Science Reform and Equity* The degree to which the district has sought to <u>integrate this</u> <u>elementary science education reform with the broader efforts of the district to increase</u> <u>equity</u> (e.g., bilingual programs, magnet schools, Title 1) so that the elementary science reform effort can "piggyback" on and be compatible with other equity-related reform efforts:

1	2	3	4	5	6
Very Lo	ow	Some		Very High	Unknown
B)	Curr	ent Statu	S		
1	2	3	4	5	6
х 7 т		~			TT 1
very Lo	ow	Some		Very High	Unknown
C)	ow Most	Some	Statı	Very High 1s in Two Yea	Unknown
$\frac{C}{1}$	ow Most 2	Some Likely S	Statı 4	Very High us in Two Yea 5	Unknown urs 6
C)	ow Most 2 ow	Some Likely S 3 Some	Statu 4	Very High us in Two Yea 5 Very High	Unknown Irs 6 Unknown
C) C) 1 Very Lo D)	ow Most 2 ow Over	Some Likely S 3 Some all Contr	Statu 4	Very High us in Two Yea 5 Very High tion of CUSEI	Unknown rrs 6 Unknown R to this capacity
$\frac{C}{1}$ Very Lo $\frac{D}{1}$	ow Most 2 ow Over 2	Some Likely S 3 Some call Contr 3	Statu 4 ibut	Very High us in Two Yea 5 Very High tion of CUSEI 5	Unknown urs 0 Unknown R to this capacity 6

INVERNESS RESEARCH ASSOCIATES

27) *Science Reform and Broader District Policies.* Overall degree to which the district is addressing its own broader policies and practices (e.g., textbook adoptions, materials support structures) so that the district context is supportive and/or aligned with an inquirybased and standards-based elementary science education reform:

1	2	3	4	5	6
Very	Low	Some		Very High	Unknown
В) Curre	ent Statu	s		
1	2	3	4	5	6
.	-	C		Vory High	Unknown
Very	Low	Some	tot	very mgn	
Very C $\frac{1}{1}$	Low) Most 2	Some Likely S	Statı 	us in Two Yea	rs
Very C 1 Very	Low) Most 2 Low	Some Likely S	Statu	very High us in Two Yea 5 Very High	rs 6 Unknown
Very C 1 Very D	Low) Most 2 Low) Over	Some Likely S 3 Some call Contr	Statu 4	very High is in Two Yea 5 Very High tion of CUSEI	6 Unknown R to this capacity
Very C 1 Very D 1	Low) Most 2 Low) Over 2	Some Likely S 3 Some rall Contr 3	Statu 4 ibut	very High us in Two Yea 5 Very High tion of CUSEI 5	6 Unknown R to this capacity 6

A) Status at the Start of the CUSER Affiliation

28) *A Proactive Stance to Barriers.* Overall degree to which the district is proactively and deliberately <u>identifying and resolving systemic barriers and blockages</u> that stand in the way of the progress of the elementary science reform program (e.g., finding creative solutions to chronic teacher substitute shortages, organizing time for classroom coaching, etc.):

1	2	3	4	5	6
Very Lo	OW	Some		Very High	Unknown
B)	Currer	nt Status	5		
1	2	3	4	5	6
X 7		Some		Verv High	Unknown
C)	Jw Most I	Likely S	tatu	is in Two Yea	rs
$\frac{C}{1}$	Most I	Likely S	tatu	is in Two Yea	rs
$\frac{C}{1}$	Most I 2 2	Likely S	tatu 4	s in Two Yea 5 Very High	rs 6 Unknown
C) 1 C) 1 Very Lo D)	Most I 2 ow Overal	Likely S 3 Some	tatu 4 ibut	5 Very High	rs 6 Unknown R to this capacity
C) 1 C) 1 Very Lo D) 1	Most I 2 ow Overal 2	Likely S 3 Some Il Contri	tatu 4 ibut	very High 5 Very High ion of CUSEF 5	rs 6 Unknown R to this capacity 6

A) Status at the Start of the CUSER Affiliation

V. CLIMATIC CONDITIONS THAT INFLUENCE REFORM

A) Status at the Start of the CUSER Affiliation

29) *Overall State Political and Policy Climate*. The overall degree to which <u>major state</u> <u>policies (e.g. accountability) and current state political climate are supportive</u> of the district's effort to improve elementary science education:

1 2 3 4 5 6 Not Mixed Very Unknown Supportive Supportive B) Current Status 2 3 1 4 5 6 Not Very Mixed Unknown Supportive Supportive C) Most Likely Status in Two Years 1 2 3 4 5 6 Not Mixed Very Unknown Supportive Supportive

30) *State Science Standards and Testing.* The overall degree to which <u>state science standards</u> <u>and science tests are supportive</u> of the district's effort to improve elementary science education:

1 4	2 3	4	5	6	
Not		Mixed	Very		Unknown
Support	ive		Supportive		
B) (Current S	Status			
1 2	2 3	4	5	6	
Not		Mixed	Very		Unknown
Support	ive		Supportive		
C) 1	Most Lik	cely Statu	s in Two Years		
				(
1 2	2 3	4	5	6	
1 2 Not	2 3	4 Mixed	5 Very	6	Unknown

31) *District and Local Community Political Climate*. Overall extent to which <u>local district and</u> <u>community political conditions</u> affect the district's effort to develop a plan and process for improving elementary science education in the district:

1 2	3	4	5	6	
Not	Μ	ixed	Very	U	nknown
Supportive	e	Su	pportive		
B) Cu	rrent Stat	us			
1 2	3	4	5	6	
Not	Μ	ixed	Very	U	nknown
Supportive	e	Su	pportive		
C) Mo	ost Likely	Status in	Two Years		
1 2	3	4	5	6	
Not	Μ	ixed	Very	U	nknown
Supportive	2	Su	pportive		

32) *District and Local Community Financial Conditions*. Overall extent to <u>which local district</u> <u>and community financial conditions</u> affect the district's effort to develop a plan and process for improving elementary science education in the district:

1 2	3	4	5	6	
Not	Ν	lixed	Very		Unknown
Supportive	•	S	Supportive		
B) Cu	rrent Sta	tus			
1 2	3	4	5	6	
Not	N	lixed	Very		Unknown
Supportive	;	S	Supportive		
C) Mo	ost Likely	v Status	in Two Years		
1 2	3	4	5	6	
Not	Ν	lixed	Very		Unknown
Supportive	•	S	Supportive		

33) District professional culture and climate. The overall professional "culture" and "climate" in the district (the working conditions, professional culture and overall morale in the district) that influence the willingness of all those working in the district to initiate and sustain reform efforts:

A)	Status at	the Start	of the	CUSER	Affiliation
----	-----------	-----------	--------	-------	-------------

1	2	3	4	5	6	
Not		Ν	lixed	Very		Unknown
Supp	ortive		2	Supportive		
E	B) Curre	ent Sta	tus			
1	2	3	4	5	6	
Not		Ν	lixed	Very		Unknown
Supp	ortive		S	Supportive		
C	C) Most	Likely	v Status	in Two Year	8	
1	2	3	4	5	6	
Not		Ν	lixed	Very		Unknown
Supp	ortive		S	Supportive		

- 34) District Turbulence and Instability. Overall extent to which unexpected or rapid <u>changes</u> in the local district or community (e.g., new superintendents, teacher turnover, growth, the number and pace of new reforms) affect the ability and willingness of the district to promote elementary science education:
 - 1 2 3 4 5 6 Not Mixed Very Unknown Supportive Supportive B) Current Status 2 3 1 4 5 6 Not Very Mixed Unknown Supportive Supportive C) Most Likely Status in Two Years 2 3 4 5 1 6 Not Mixed Very Unknown

Supportive

A) Status at the Start of the CUSER Affiliation

Comments:

Supportive

VI. SUMMARY JUDGMENTS

This section summarizes the previous sections and asks the rater to make judgments about the overall status of the capacity of the district to engage in a successful elementary science education reform effort and the probability of its continued success.

35) *Overall Development of Increased Internal Capacity*. Overall degree to which this district has developed its <u>own internal capacity for initiating and sustaining</u> elementary science education reform (e.g., its leadership, resources, relationships, infrastructure, and implementation progress):

1	2	3	4	5	6	
Very	Low	Some		Very High	Unknown	
B) Curre	ent Statu	s			
1	2	3	4	5	6	
Very	Low	Some		Very High	Unknown	
	<i>,</i>	2				
1	2	3		5	6	
1 Very	2 Low	3 Some	4	5 Very High	6 Unknown	
1 Very D	2 Low) Over	3 Some all Contr	4 ibut	5 Very High tion of CUSEF	6 Unknown R to this capacity	
$\frac{1}{1}$ Very D 1	2 Low) Over 2	3 Some all Contr	4 ibut	5 Very High tion of CUSEF	6 Unknown R to this capacity 6	

A) Status at the Start of the CUSER Affiliation

36) *Visible Success in Program Development.* The overall degree to which the district/project has <u>made visible progress</u> in implementing its elementary science reform program, thereby building a positive reputation for the initiative and showing visible and publicly-recognized evidence of success (e.g., establishing a Materials Center, model classrooms, press releases, test scores, testimonials, etc.) that can buoy and further support additional reform activities:

1	2	3	4	5	6
Very L	ωw	Some		Very High	Unknown
B)	Curre	ent Statu	S		
1	2	3	4	5	6
Very L	.OW	Some		Very High	Unknown
5					
C)	Most	Likely S	tatu	us in Two Yea	rs 6
$\frac{C}{1}$ Very L	Most 2 .ow	Likely S	tatu 4	us in Two Yea	rs 6 Unknown
C) 1 Very L D)	Most 2 .ow Overa	Likely S 3 Some all Contr	tatu 4 ibut	us in Two Yea 5 Very High tion of CUSEI	f 6 Unknown ₹ to this capacity
$\frac{C}{1}$ Very L D) $\frac{D}{1}$	Most 2 .ow Overa 2	Likely S 3 Some all Contr 3	ibut	us in Two Yea 5 Very High tion of CUSEF 5	rs 6 Unknown R to this capacity 6

A) Status at the Start of the CUSER Affiliation

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37) *Intentionality.* The <u>overall "seriousness" and priority</u> that this district places upon elementary science education reform:

A) Status at the Start of the CUSER Affiliation

,				
1 2	3 4	5	6	
Very Low	Some	Very High	Unknown	
B) Curr	rent Status			
1 2	3 4	5	6	
Very Low	Some	Very High	Unknown	
C) Mos	at Likely Stat	us in Two Yea	rs	
1 2	3 4	5	6	
Very Low	Some	Very High	Unknown	
D) Ove	rall Contribu	tion of CUSEI	R to this capacity	
1 2	3 4	5	6	
Very Low	Some	Very High	Unknown	

38) Signal-to-noise Ratio. Overall, any district's efforts to reform elementary science education are inevitably a small "signal" in an otherwise noisy district environment. The degree to which the <u>signal-to-noise ratio</u> of elementary science reform in this district is strong enough to be significant:

1 2	3	4	5	6
Very Low	Some		Very High	Unknown
B) Cu	irrent Statu	S		
1 2	3	4	5	6
Very Low	Some		Very High	Unknown
C) M	ost Likely S	Statu	ıs in Two Yea	rs
$\frac{C}{1} \frac{C}{2}$	ost Likely S	Statu 4	is in Two Yea	rs 6
C) M $\frac{1}{1}$ 2 Very Low	ost Likely S	Statu 4	us in Two Yea 5 Very High	rs 6 Unknown
C) M 1 2 Very Low D) O	ost Likely S 3 Some verall Contr	Statu 4 ribut	us in Two Yea 5 Very High tion of CUSEI	rs 6 Unknown R to this capacity
$\begin{array}{c} C) M \\ \hline 1 & 2 \\ Very Low \\ D) O \\ \hline 1 & 2 \end{array}$	ost Likely S 3 Some verall Contr 3	Statu 4 ribut	us in Two Yea 5 Very High tion of CUSEI 5	rs 6 Unknown R to this capacity 6

INVERNESS RESEARCH ASSOCIATES

39) *Trajectory.* The overall <u>trajectory</u> of the elementary science program in this district:

1 2	3	4	5	6
Downward	Flat		Upward	Unknown
(Worsening			(Improving	
Rapidly)			Rapidly)	
B) Curre	ent Sta	tus		
1 2	3	4	5	6
Downward	Flat		Upward	Unknown
(Worsening			(Improving	
Rapidly)			Rapidly)	
C) Most	Likely	y Statu	s in Two Year	°S
1 2	3	4	5	6
Downward	Flat		Upward	Unknown
(Worsening			(Improving	
Rapidly)			Rapidly)	
D) Over	all Cor	ntributi	on of CUSER	to this capacity
1 2	3	4	5	6
Downward	Flat		Upward	Unknown
(Worsening			(Improving	5
Rapidly)			Rapidly)	
Comments:				

Other summary comments or thoughts: