

Tmss background.

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**Using TIMSS in a World of Change:
Comments at the National Academy of Sciences***

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***Opinions are those of the author alone and do not necessarily represent those of the World Bank or any of its affiliated institutions.**

Using TIMSS in a World of Change: Comments at the National Academy of Sciences

Myron Atkin and Paul Black have authored a compelling paper with three principal conclusions.¹ First, is that there is universal unhappiness with science and math in OECD countries, and this unhappiness appears to be unrelated to rank order of science and math performance on international tests. Second, is that policy-oriented prescriptions are not simple, and studies such as TIMSS raise more questions than they answer. Third is that the 'splintered vision' may not be a fair characterization of the U.S. problem.² National standards do not necessarily characterize U.S. competitors. Where they exist, national standards differ in the concepts they identify as important and the impact they have on teachers and students. If a country has a single vision that does not mean it will be satisfied with its science and math. These conclusions lead Atkin and Black to infer that world class standards are an appealing but ambiguous banner. Perhaps it would be better for countries to concentrate on what they do not like about their education systems instead of trying to connect high performance and educational characteristics.

Atkin and Black's argument contains a flashing yellow light, a warning to us. They warn us to hold our expectations to what is reasonable; to not be precipitous in our conclusions; to manage the rhetoric of our political leaders. Good advice, but it is the advice of academia, not of politics or economics. The fact is, at least in my experience, the political and economic world of education already operates on the basis of international standards. The horse is out of the barn, the spirit already out of the bottle. Perhaps the function of the academic world is not to ask whether standards should exist, but to ask other questions: how well defined are they? How measurements can be improved? What new ones are there for us to consider?

Why do I say that standards already exist? Let me, in the few minutes I have with you this morning, define the existing standards; give some examples of them; suggest results already available from the TIMSS study which illustrate new standards; and point out one standard where the United States has already attained 'first in the world' three years before the deadline of the year 2000.

Standards which exist

Political and economic leaders around the world use the term 'standards' frequently. But so far as I am aware, none, save the Americans, employ the term "World Class Standards". More common is the use of: "International Standards," "European Standards," "World Standards." The lesson we should draw is to not overly tax ourselves over terminology, but rather concentrate on the different concepts which standards imply.

¹ J. Myron Atkin and Paul Black, "Using TIMSS in a World of Educational Change".

² A Splintered Vision: An Analysis of U. S. Mathematics and Science Curricula, available through the National Library of Education, Washington D.C.

The term itself (standards) has three separate meanings. First, as in first in the world. This can imply either a leader in setting the standard in the first place, such as space flight, or being first in an already existing standard, such as an olympic sport. Second use is that of an ideal norm. Many countries use labor market adaptability as an ideal performance norm. The third use is a minimum criterion for entry or a license to practice. The effort to establish European vocational standards is an example of this.

Illustrations

- The current debate over standards between Moscow Municipal Schools and the Russian Federal government. This hinges on the degree to which students need to be motivated by the curriculum. The standard favored by the Moscow school system is that of a 'world standard' sought by all large urban school systems experiencing difficulty motivating children.
- The European Union's trade policy and its educational applications. Open economies require free trade. Free trade implies economic competition, including competition in labor markets. This requires adaptation and restructuring of educational institutions. Programs to accomplish this:
 - Internally within Europe: Leonardo, Socrates and the Europe III Programs
 - Foreign Policy programs: The Mediterranean initiative in the Middle East and North Africa, and the TACIS and PHARE Programs in Europe and Central Asia.
- Competition in higher education.
 - restructuring of British universities.
 - league tables on the quality of scientific research³

Standards Emanating from TIMSS

From the results thus far it would seem that at least four kinds of standards have already emerged from the TIMSS study. They represent all three types – as noble prizes which set precedent; as an ideal norm, and as a minimum. For instance:

³ Higher Education Funding Council 1996 Research Assessment Exercise, available through Northavon House, Coldharbour Lane, Bristol BS 16 1QD, England.

Individual Country Standards

Just because one country may not regard a particular finding as important, does not mean that others will not find it important. Colombians, for instance, will study very carefully the age/grade ranges and will have to debate why their country is such an outlier. After viewing the video-tape results, Americans may have to re-define for themselves minimum standards of non-interruptions during lessons. All countries will now review the sequencing of subject matter and the age of assumed appropriate entry for particularly subject matter (e.g. algebra). The point here is that standards which may apply to one country on the basis of these TIMSS results, need not have to be a universal debate. These individual country standards are of the second type, that of ideal norms.

Standards of Measurement

From TIMSS a new standard has arisen which seems to contain three elements: what is expected to be learned; what has been taught; and what has been learned. Measures of learning are now expected to be sensitive to curriculum content, performance expectations, and learning opportunity. This new standard is of the third type, that of a minimum.

Sources of Data

After TIMSS, it will no longer be possible to reach a conclusion on the basis of a single data source. In depth understanding will be the norm, and this will require surveys, cases, and video observations, whose topics and themes are all interwoven. The era of ideological debate between qualitative and quantitative research is over. (Thank goodness) In this regard, the TIMSS study has set a new standard for the world : for genuine insight, all sources are necessary. This category of standard falls into the first type, that of a pioneer, one which sets new precedent.

Data Quality

After TIMSS it will no longer be possible to collect and report bad data and get away with it. There are now international standards of sampling, impartiality of questionnaire design, quality control, and reporting. TIMSS has set a record for international cooperation in these concepts.

* Other examples of these principles can be found in: National Academy of Sciences, A Collaborative Agenda for Improving International Comparative Studies in Education, Washington D.C., 1993; James W. Guthrie and Janet S Hansen (eds.) Worldwide Education Statistics: Enhancing UNESCO's Role, National Academy of Sciences, Washington D.C., 1995.

World Class Standard: An Award (to the United States) Right Now

Here I do not mean to be flippant. Nor by what I am about to say, do I wish to appear 'jingoistic'. Every international research exercise requires partners and commitment, from each institution and from each country. Nevertheless, I have followed IEA for a quarter of a century. I had the honor of serving for eight years on the NAS Board which helped the USDOE, NSF and other agencies manage the institutional and managerial crises associated with these international studies. I have worked with many European countries and with numerous countries in Asia, Latin American, the Middle East, and the former Soviet Union in framing their response to the new initiatives emanating from Washington or from OECD because of Washington. I have personally witnessed the reaction of education ministers to the compelling publications of Education at a Glance, and Education in States and Nations. I have seen both IEA and OECD grow from being parochial cottage industries with only an idealized concept of comparative advantage, to being — and I do not say this lightly — 'world class institutions'.

In our debate over standards, and over what we might learn from TIMSS, we should guard against the temptation of losing sight of the forest.¹ We should guard against losing sight of how far the world has come in the last decade since TIMSS and other international indicator data collection efforts were first conceived. In this effort, a new standard of excellence has been set, a standard of cooperation never before experienced across states and among countries.

There is a prize to be awarded today. A prize which every congressional official should be proud to honor. Both political parties. All presidents — Republican and Democratic. All governors. All teachers associations. All Chief State School Officers. This prize goes to the United States for leadership in the field of education research. For having the vision, and for having the tenacity, and may I say it, for having the diplomacy to lead others toward a common vision, a common standard of excellence.

And to whom is this prize awarded? To which individuals? To which institutions? To Emerson Elliot of course and the National Center for Education Statistics. To Jeanne Griffith. Eugene Owen. Lois Peak. To Larry Suter of the National Science Foundation.. To Al Beaton who saved the day when no one was sure it could be done. To Dorothy Gilford, Janet Hansen, Mike Smith, Michael Kirst, Gordon Almbach, Ed Haertel, Francisco Ramirez, Mary Lindquist, Paul Lemahieu, Andrew Porter, Richard Shavelson, Lloyd Bond, Floraline Stevens, Jim Guthrie, Jack Schwille, Judy Tórnay-Purta. And to many, many others, in and outside this room. It is

¹ Progress on this issues can be traced by consulting : Stephen P. Heyneman, "Research on Education in Developing Countries," International Journal of Education Development 4 No. 4, 1984, pp. 293-304; "Educational Quality and the Crisis of Educational Research," International Review of Education, 39 no. 6, 1993, pp. 511-517; "Comparative Education: Issues of Quantity, Quality and Source," Comparative Education Review 37 November, 1993, pp. 372-88; and Jeffrey M. Puryear, "International Education Statistics and Research: Status and Problems," International Journal of Educational Development 15 No. 1 1995, pp. 79-91.

important to stop a moment and to recognize these individual and institutional contributions because they have changed the world of education.

When I first arrived in Washington in the mid- 1970s, my first job was with the Office of Child Development, to an interagency panel on youth and adolescence. The function of that panel was to monitor all research sponsored by the federal government. This covered the work of 24 federal agencies across five different departments. In 1975, out of 300 million dollars allocated to 3,000 youth and adolescence projects, there was only one project which collected information on another country.⁶ Moreover, the deputy director of NIE asked me privately to please not list it openly for fear that it would be declared a boondoggle by a Congressional committee. In 1975, international education research was virtually dead.

I do not mean to imply that the problems of funding are over, or that political risk to international education research is past. They will always be with us. What I wish to point out may be obvious to others, but not to Americans, that the United States and its educational institutions now lead the world in a standard of self assessment, in a standard of openness, in a standard of technical excellence, in a standard of research innovation. But please understand that this standard is not 'won' like an olympic award. It does not come as it would to a victor, where there is also a vanquished. It is a standard willingly and gratefully taken up, and joined by other countries, by other experts, and by other institutions.

I would only wish to note that the style of this unique achievement is typical. It comes so naturally, that Americans take no notice of it. World Class standards in education research have been achieved without anyone announcing them; without anyone claiming them; without any publication; without any ceremony. But the world has noticed, and so have I.

In essence, I agree with Atkin and Black. We should not interpret TIMSS narrowly or simplistically. But neither should we ignore what has occurred with TIMSS, and in the world of international education research generally. There is a new standard out there because of your efforts. A standard welcomed by all; envied by all; honored by all. Congratulations to you all.

M:\new\TIMSS

⁶ The project was to study the determinents of academic achievement on examinations using data from Ireland.

Improving Math Achievement by the Nation's Eighth Graders

Issue: In the State of the Union address, the President pledged the development of national tests in 4th grade reading and 8th grade math, challenging every state and community to test every student in these critical areas by spring 1999. He also called for a voluntary national math exam to be a tool for measuring progress--by every district, school, teacher, and student--toward achieving excellence in student performance.

The Third International Mathematics and Science Study (TIMSS) provides international benchmarking for such achievement. The Department of Education is developing a test based on TIMSS and (content) quality standards in mathematics. To address the issue of how we can actually improve the performance of students, an NSTC interagency working group (co-chaired by NSF and DoEd) will be established, probably through a Presidential Directive to the DPC and OSTP. This working group will develop plans to mobilize the resources of local communities that can help schools and districts prepare not only for this exam, but also for identifying the conditions and practices that improve academic achievement in all subjects. While the initial focus of the working group will be on mathematics, the lessons learned will be applied to science as well.

Agencies: OSTP, DPC, DoEd, and NSF (core group)

Status: Preliminary discussion has occurred between OSTP, DPC, NSF, and DoEd. A Presidential Directive is being prepared.

Impact: Students will have a much better opportunity of achieving international standards in math and eventually science as measured by national tests. In particular, the working group will identify resources (including human) to help all students learn.

Planned Report Releases for NAEP* and TIMSS**

<u>Date</u>	<u>Time</u>	<u>Location</u>	<u>Event</u>
February 27, 1997	2:00 pm	National Press Club Washington, DC	1996 NAEP Mathematics Results for the Nation (grades 4/8/12) and the participating States (grades 4/8)
May 2, 1997	11:00 am	EWA Annual Conference Washington, DC	1996 NAEP Science Results for the Nation (grades 4/8/12) and the participating States (grade 8)
June 10, 1997	10:00 am	Boston College Boston, MA	TIMSS 4th grade results for 29 countries
	11:00 am	National Press Club Washington, DC	TIMSS 4th grade results for the U.S.
July 1, 1997	10:00 am	National Press Club Washington, DC	TIMSS-NAEP Linking Study in mathematics (grades 4/8) and science (grade 8) linking 40 states and 41 countries at the 8th grade and 43 states and 29 countries at the 4th grade

* National Assessment of Educational Progress

** Third International Mathematics and Science Study

DRAFT

STRENGTHENING MATH AND SCIENCE EDUCATION: A KIT OF RESOURCES FOR SCHOOL DISTRICTS

Note: This toolkit, comprised of individual modules that can be used independently or together as part of a systemic strategy, will be available in July 1997.

Teaching Module.

A centerpiece of this guide is the videotape from the Third International Mathematics and Science Study (TIMSS) that shows clips from typical classrooms in the United States, Japan, and Germany. Discussion questions and other support materials will help teachers reflect and compare their practices with other educators in the U.S., Germany, and Japan, including pedagogy that strengthens understanding of math concepts, demonstrates how to solve problems, reinforces basic arithmetic skills, and encourages students to present solutions to the class and learn from one another. A guide for moderators in presenting workshops will enhance this module's effectiveness as a professional development tool. The U.S. Department of Education is working with AFT, NCTM, and ASCD to produce this module.

Curriculum Module.

This guide helps districts evaluate their current math and science curricula in light of key findings from TIMSS. TIMSS found that the content in U.S. eighth grade math classrooms compares to the seventh grade level in leading countries, that U.S. math curricula cover more topics and are less focused than those of other countries, and that U.S. eighth grade math textbooks cover as many as 35 topics while those of Japan cover as few as 5. This guide will provide tools and methodologies for analyzing curriculum so that districts can compare what they expect from students to the curricula of leading countries whose students are high achievers in math and science.

Assessment Frameworks Module.

This module will publish the math and science frameworks from TIMSS and the National Assessment of Educational Progress (NAEP), along with a guide for districts on how to examine their own curriculum frameworks and a resource guide. Districts can use this module to help prepare their students for the eighth-grade math test available in 1999 that will show whether students are mastering critical basic and advanced skills early enough to succeed in high school, college, and the workforce.

State/District Student Achievement Module.

In 1997 and 1998, approximately 60 states and school districts will be able to administer the TIMSS test to a sample of their students, comparing their math and science achievement to students in the U.S. as a whole as well as to their peers in 40 countries. TIMSS test results will include specific data on areas of student strengths and weaknesses in subjects such as algebra, geometry, measurement, and fractions and number sense in math and biology, earth science, chemistry, and physics in science. As part of the assessment, students, teachers, and administrators will answer questionnaires that will provide states and districts with additional useful information about math and science teaching and learning. States and districts will be assisted in interpreting test results, which will help policymakers prepare students for the new individual-level national tests to be offered in 1999.

1997 ■ ■ ■

DISTRICT TIMSS BENCHMARKING

First in the World Challenge for Mathematics and Science Education

In his recent State of the Union address, President Clinton challenged every community and state to adopt national standards of excellence in education. He called for voluntary administration of individual level national tests in reading at grade 4 and mathematics at grade 8 to monitor progress towards these standards, beginning in 1999. At the 8th grade, the national test will be comparable to the mathematics section of the Third International Mathematics and Science Study (TIMSS).



As part of the President's initiative, the U.S. Department of Education will provide states and districts an immediate opportunity this spring (1997) to administer the TIMSS mathematics and science tests to a random sample of their students. Obtaining comparisons of 8th grade performance with that of students' peers in more than 40 countries will help those states and districts develop concrete plans for meeting international benchmarks of performance.

In addition to learning their students' relative standing around the world in mathematics and science achievement, districts also would be able to make comparisons regarding a number of student, school, and instructional factors. Students fill out questionnaires about background factors related to achievement, including their opinions about mathematics and science. Teachers answer questions about lesson structure and context, as well as about teaching math and science. School administrators answer questions about the implemented curriculum, staffing levels, availability of resources, in-service education, and retention rates. Much can be learned by thinking about the different forms that education can take across countries and comparing these to the situation in your own state or district.

The assessments will be conducted by the TIMSS International Study Center at Boston College, using the same administrative procedures and applying the same technical standards as the international project. The TIMSS International Study Center will work with Westat, Inc., who implemented TIMSS in the United States.

Participation Parameters



- Districts may choose to participate at one or more of the grades 4, 8, and 12. At grade 12, students are tested in mathematics and science literacy. In addition, there are two subgroups at grade 12: separate samples of students taking calculus are tested in advanced mathematics; and those taking physics are tested in physics.
- The school sample will be selected by Westat and generally will include from 25 to 50 schools per grade, depending on the size of the district. The student sample will include 1000 students for any one of the samples. If there are fewer than 25 schools in the district, all schools will be included, and the per school sample will be increased to still yield a total of 1000 students per sample. Smaller districts are encouraged to form consortiums.
- Westat staff will select the student sample either at the district office, at the schools, or from lists mailed to Westat's offices.
- Teacher questionnaires will be distributed to the mathematics and science teachers of sampled students at grades 4 and 8. A school questionnaire will be distributed to the principals of all participating schools.
- Estimated time for student assessments is 115-155 minutes. Teacher and School Questionnaires take approximately 1 hour to complete.

Roles and Responsibilities

Districts will be responsible for:

- Obtaining cooperation of sample schools,
- Obtaining lists of classes/students, and
- Coordinating assessment activities.

TIMSS will be responsible for:

- Selecting school and student samples,
- Conducting the assessment sessions,
- Processing assessment booklets and questionnaires, and
- Producing reports and data tapes.

TIMSS Schedule

Feb-April 1997

Districts secure cooperation and schedule assessments.

May 1997

Assessments conducted.

Late Fall 1997

Districts receive preliminary data.

Spring 1998

Districts receive reports and data files.

What Districts Can Learn

TIMSS data may answer the following questions:

- How do students in a particular district compare to similar students in countries around the world?
- How do the resources available to teachers and their instructional practices compare to those in countries that successfully prepare their students for the global marketplace?

Costs

The cost to participate in the assessment is approximately \$50,000 per grade, depending on the size of the district and the number of grades tested.

Reporting

Each district will receive a short descriptive report containing TIMSS scores for mathematics and science and for major content areas of mathematics (e.g. numbers, geometry, algebra) and science (e.g. earth science, life science). Information on key background factors will be reported, including resources and classroom instructional strategies. Each district will receive a data tape of its results.

Contacts:

Marty Orland, National Center for Education Statistics (202)219-2297
Ina V.S. Mullis, TIMSS International Study Center (617)552-3173

PLEASE NOTE: For districts unable to participate in the Spring of 1997, the TIMSS benchmarking assessment opportunity also is available in the Spring of 1998.

TIMSS BUSINESS GUIDE

Precis: February 25, 1997

Nelson Smith, for the National Alliance of Business

Scope/Format: Text to run about 16-18 pages, with highlighted boxes showing charts/graphs, plus examples of effective business practices supporting math/science standards. Executive summary (2 pages) in front. Chapter headings as shown, with appendix of resources in back. Sections as follows:

I. WHAT IS TIMSS?

Brief intro to the test itself: the most comprehensive, reliable, in-depth international education study ever done. Presents the "horse race" results in math and science, but also shows how different countries arrange the curriculum and teach it, how much and how well students study, and how they spend time outside the classroom. Also describes forthcoming TIMSS-related releases.

II. WHY IS IT IMPORTANT TO BUSINESS?

The knowledge content of work is rising dramatically. Both math and science are critical element. *Cite science content of industrial skill standards; math problems from Chrysler entry-level worker test; tripling since 1987 in "statistical analysis" training done by US manufacturing companies, etc.*

The economy is globalizing. Our workers (and hence our students) are competing against every other country in the world.

III. HOW ARE WE DOING?

We are far from being "first in the world" in math and science, as promised in the national education goals. US students score below the international average in eighth-grade math and above the international average in eighth-grade science (etc.)

IVa. WHAT DO WE TEACH?

Brief section focusing on three issues: **Content differences** (cite fragmented math curriculum, wide/shallow coverage, lagging attainment in US); **Structural differences** (unified vs. decentralized decisionmaking); and **Time** (more US time spent in class, but less productively; role of homework, etc.)

IVb. HOW DO WE TEACH?

Classroom practice (Cite case studies, especially on ability grouping/tracking and teaching skills vs. developing concepts; gap between belief and reality on NCTM

standards); **Teacher preparation** (including subject-matter knowledge base, induction methods, and inservice requirements); and **"Daily life"** (including how school day is organized to provide peer support; other community resources.)

V. QUESTIONS FOR YOU AND YOUR COMMUNITY...

What do we expect of our own students? Are our own standards consistent with high expectation for students? (*Check local frameworks, state standards; compare math/science curricula against NCTM recommendations and science standards*)

Are we willing to adopt high-stakes tests? (Do chart or table laying out chronology and consequences of testing regimes in US/other countries. Might show that we test far more, but with less impact. Show sample questions.)

Do we use the results of testing to guide policy? Do we put our money where our mouth is? (Have we invested in up-to-date texts, good lab equipment, proven programs?)

How can we support more effective teaching? What do the videos and case studies suggest about change inside the classroom -- and about resources needed for ongoing improvement?

What business itself can do: As business people, do we organize around high standards or public relations (give examples of constructive business support in math/science). Is philanthropy aligned with human resource policies and other corporate strategies, to support high standards?

How can business help educators adopt a "continuous improvement" approach -- for example, in using TIMSS-style data to implement NCTM standards more thoroughly?

From 2/27/97 mtg at ED

Algebra Strategy

Overall Goals

All students will be able to do and understand algebra by the end of 8th grade.

Proficiency Goal: All at international average and many more above it.

National Awareness Goals

1. Over next two years, as integral part of President and Secretary's "crusade for standards" and focus on reading and math, build public support for algebra by end of 8th grade and voluntary national 8th grade math test.
2. Over next two years, create public awareness of changes needed in content and pedagogy to meet world class standards in math. (Q-science too?)

Steps to reach goals:

Develop and disseminate high quality material that encompasses standards, tests, importance of reading well by end of 3rd grade, algebra by end of 8th grade and 3-5 things must know about TIMSS. (Materials include: summary of TIMSS findings, expert paper on what research says about math teaching,

Awareness of algebra goal, new tests and key TIMSS findings by:

Chiefs-100%

State Boards- 75%

Governor Ed Aides-90%

State Legislatures, Ed Comm. - 70%

Local Boards - 60%

Local Supers -75%

Principals - 75%

Math/Science Teachers - 80%

Parents of school aged children -- xx??

Business community

Highlight succesful programs, states/districts doing algebra by 8th grade.

Generate Favorable Press Coverage, including:

You should check w/ Jennifer re: Govs)
checks - she may have gotten things
disseminated via NSA i also - although
you still might want to send again
from Riley

Op-eds from bi-partisan opinion leaders
meetings with editorial boards
local press events tied to NAEP-TIMSS link
targeted work with science press

Other Dissemination Strategies:

- o identify national spokesperson and "commission"
- o Partner with NAS and NSF
- o Regional meetings organized by outside organizations (e.g. NCTM) as well as ED-funded projects
- o Listserve
- o Targeted mailings- where possible, have groups send out own materials to their members
- o Articles in group newsletters, education press, science press
- o Convention speakers at regular education conventions, plus non-traditional fora such as key science/math/technology groups, business groups
- o Regional meetings on TIMSS -- work with NCTM + labs and Eisenhower consortium to set up.
- o TIMSS the movie-- with targeted wrap around materials developed by and for: (1) business; (2) local school boards; (3) parents
- o Sattillite meeting on TIMSS/Algebra goal

Committing to Test and 8th grade Algebra

1. By 1999, 40 states signed up to take 4th grade reading and 8th grade math test.
2. By 1998, up to 50 states and districts signed up to take TIMSS.
3. By 1999, 20(?) states and key districts commit to algebra goal.

Steps to Reach Goals:

Continue to solicit states and districts for 1998 test -- work with foundations to generate financial support for test takers. (Meetings with foundations planned for NYC and California)

Within 6 months get critical mass to sign on to algebra goal and 1999 test:

Target states: Maryland, Michigan, Colorado, NC,
Deleware, California, Ohio

Target Districts: Boston, Philadelphi, Chicago,
Seattle, Houston, DC

Within 6 months, gain endorsements from key constituency groups to promote national efforts and state and local action. Target groups for algebra:

all major k-12 groups, Uban League, Business Coalition for Education Reform, scientific associations and societies, higher education groups.

Standards Goals

By 1999, 50% states and large districts will have put in place a review and, where appropriate, begun to modify their math (and science?) content/performance standards and assessments to make them world-class (or: "TIMSS-comparable;" or sufficiently rigorous and focused to promote achievement on the national test??)

By 1999, 20% districts review and modify their math cirriculum to reflect the lessons of TIMSS

Steps to Reach the Goals

Cirriculum benchmarking tool developed by NCES

Cirriculum analysis tool developed by OERI

Develop other high quality materials (both analytical tools and model cirriculum) with partners - NAS, NSF, NCTM, Kirk's internet project etc...

Engage NCTM, math superintendent

Teaching Goals

By 1999, x% of middle school math teachers will have participated in intensive professional development to improve math (and science?) instruction based on the lessons of TIMSS.

By 1999, 50% of states and key districts will have reviewed and modified their professional development strategies based on TIMSS.

By 1999, xx teacher preparation programs will have improved their training programs to reflect the lessons of TIMSS.

Strategies include:

Teaching videos and guidebook developed by OERI

Developing other high quality materials

Providing and training existing professional development programs with these materials through our partners

Sponsor or support sponsorship of workshops for teachers and teacher trainers

Improving federal programs supporting math science instruction.

By 1999, improvements are made in key federal programs to improve their effectiveness as part of a broader strategy to prepare for test and reach world-class math/science standards.

Strategies include:

Interagency working group

Pushing algebra message and new materials in all program materials (e.g., Title I guidance, all meetings with RTAC directors, IASA Conferences, OSEP

Leadership conferences, New American High Schools)

[Questions re presidential directive to do schools; should there be something more explicit re preparation/resources]

TIMSS Meeting -- February 13, 1997

Today:

Changing of the Guard

Update chart

TIMSS: the Movie

-- viewing

-- distribution strategy

TIMSS report: distribution strategy

OERI TIMSS binder

Inter-agency Working Group

Other items....

TIMSS Challenge District

For next meeting:

Outreach

-- What we've already done

-- Future plans

Revised options on summer workshops

Lesson plans on-line

Govarn Nides

New Shows

NEA, AFT

AAAS, NCTM

Assess Comm

Math Sci Superv

2000

Organization / E's

NAB, BRT, Goals Panel, CEDAR

Movie Distribution

① NAB will send out to VCEE
retail partners -

community update guide to go
w/ - 1st draft
also ring

② Other communities -
PTAs -

tailored materials

marby - widmeyer can
work for us

Share NAB template

w/ Widmeyer -

ask the to

tailor

should be a catalyst
for conversation.

Stigler
Video Viewing
next
Thursday
w/ Timpane

Separate video -

the 6 classroom

75 minutes - very very soon

Stigler - written transcript
+ Quercus

Teacher
Video

also ok for
school bus

Beginning work soon - hands-on
for teacher w/ snippet of
classroom stuff - part of
instructional toolkit

Kevin -
rep
on fair
trial

2/13/97 TIMSS
meeting

TIMSS: the Movie

- parents
- school boards
- state boards

business covered by NAB

Do a release event at a state/district
that will take challenge in 97/98.

Jennifer will work w/ Bob, Kate, ~~James~~
on a proposed distribution.

+ sense of different acts for whom

parent
business
policy maker
teacher
general audience

Timeline -

NABP release - will raise low down
NABP compare to TIMSS -

Likey with event - * -
It won't be so specific -

Maths 22,000

Have a Pen Thru left

Can order from GPO -
then ~~for~~ for sale -

Push the book ; can buy from BPO
or xeroxed copies.

Can make more of 4-page brochure —
include GPO order #. movie

Copy - \$ Brochure -

Times challenge District

Stable: Missouri Very intense -
basically looks done - not sure
will be all grade levels -
Just need to check that

Oregon - 8th grade on (cost)

Chris - Need more to be heard q-estm

Double check w/ N.G. —

District: Corpus Christi - 1998
City of Corpus - Ref. Mat/Su
" " Prob 1000 4/10/98

GM -
AASA - FIW

Kenney - very involved - maybe
98 rate for 1999

First in the World Challenge

Center Out - College ed partnership

Santa Barbara, CA -

If we are going to do this - need to think
about how much to push this.

Have one outreach effort -

Timeline - work between community/partnership -

Eq 2000 - not this year - but maybe next
year.
Challenge grants.

Binder -

§ on labs, conserving, Kenney, RTECS

§ on kind program type WDN,
promising practices -
examples

Go back to developer to check
an relate to TIMES.

§ - What's on table but not decided -
FIE, etc.

§ - Additional ideas - promising.

EX Strong video of outstanding
teacher in 6 countries

no confidentiality issue.

Maybe could get some foundation to
look / fund

Thursday at 3 pm

Jennifer will look at what we already
have -

have seen Frost / Fritz
to come next week

Reginald events -

ORagan events -

President of District Water Supervision

Twiss Day Ric summer -

late early Day

Sadelote -

Maybe of VP

2 pm Truck slay

Kevin:

These are the states I would try to line up for TIMSS:

States in Achieve

North Carolina

Michigan

Wisconsin

Ohio

Nevada (not likely to participate but should be contacted if others are)

Colorado (already participating)

Other potential participants

California

New York

Maryland

Kentucky