The Mathematical Education of Elementary Teachers (ME.ET) Project

Handout 1

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http://meet.educ.msu.edu
Figure 1: ME.ET Conceptual Map
Table 1

*Information by State: Certification, Tests, Achievement*

<table>
<thead>
<tr>
<th></th>
<th>MI</th>
<th>NY</th>
<th>SC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of certifying Institutions</td>
<td>32</td>
<td>118</td>
<td>31</td>
</tr>
<tr>
<td>Number of NCATE(^1) certified institutions</td>
<td>16</td>
<td>25</td>
<td>22</td>
</tr>
<tr>
<td>Number of TEAC(^2) certified institutions</td>
<td>3</td>
<td>24</td>
<td>0</td>
</tr>
<tr>
<td>Praxis required?</td>
<td>no</td>
<td>no</td>
<td>yes</td>
</tr>
<tr>
<td>PRAXIS Pass Rate</td>
<td>NA</td>
<td>NA</td>
<td>90%</td>
</tr>
<tr>
<td>State Test Required?</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>Quality Counts (QC) K-12 Standards grade(^3)</td>
<td>B+</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>QC Teacher Quality Improvement Score(^3)</td>
<td>66</td>
<td>81</td>
<td>92</td>
</tr>
<tr>
<td>New certifications from in-state(^4)</td>
<td>7641</td>
<td>32128</td>
<td>2049</td>
</tr>
<tr>
<td>New certifications from out of State(^4)</td>
<td>977</td>
<td>0</td>
<td>1514</td>
</tr>
<tr>
<td>Percent out of state</td>
<td>11%</td>
<td>0%</td>
<td>42%</td>
</tr>
<tr>
<td>NAEP Information(^3,4)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>%Proficient and above (Math) 4th grade, 2003</td>
<td>38%</td>
<td>36%</td>
<td>36%</td>
</tr>
<tr>
<td>%Proficient State Test</td>
<td>65%</td>
<td>78%</td>
<td>34%</td>
</tr>
<tr>
<td>Difference, NAEP-State</td>
<td>31</td>
<td>45</td>
<td>2</td>
</tr>
<tr>
<td>NAEP 4th Math (mean, US public 237)</td>
<td>238</td>
<td>238</td>
<td>238</td>
</tr>
<tr>
<td>Mean for White students (US public 246)</td>
<td>245</td>
<td>247</td>
<td>250</td>
</tr>
<tr>
<td>Mean for Black students (US public 220)</td>
<td>211</td>
<td>222</td>
<td>223</td>
</tr>
<tr>
<td>NAEP 8th Math (mean, US = 278 )</td>
<td>277</td>
<td>280</td>
<td>281</td>
</tr>
<tr>
<td>Mean for White students (US public 286)</td>
<td>285</td>
<td>290</td>
<td>294</td>
</tr>
<tr>
<td>Mean for Black students (US public 257)</td>
<td>247</td>
<td>259</td>
<td>263</td>
</tr>
<tr>
<td>Quality Counts Info(^3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Middle School: Major or Minor in Math</td>
<td>minor(^5)</td>
<td>minor</td>
<td>Minor</td>
</tr>
<tr>
<td>Student teaching -- min wks</td>
<td>6</td>
<td>8</td>
<td>12</td>
</tr>
<tr>
<td>Standards aligned with test</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Teacher Prep Accountability Process</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

\(^1\)National Council for Accreditation of Teacher Education. Date from NCATE Web site, www.ncate.org

\(^2\)Techer Education Accreditation Council. Data from TEAC Web site, www.teac.org/

\(^3\)From Title II Web site

\(^4\)From NCES Web site, 2005 data

\(^5\)From Ed Weekly Quality Counts 2005 Web site

\(^6\)Michigan requires a subject area major or 3 minors for elementary education majors
Textbooks for mathematics classes for elementary teachers mentioned in the instructor survey (current edition is indicated):


Other textbooks mentioned in the instructor survey are (current edition is indicated):


Samples of objectives for teacher certification tests

**New York Objectives**

*Understand skills and concepts related to number and numeration, and apply these concepts to real-world situations*

- Selecting the appropriate computational and operational method to solve a given mathematical problem
- Demonstrating an understanding of the commutative, distributive, and associative properties
- Using ratios, proportions, and percents to model and solve problems
- Comparing and ordering fractions, decimals, and percents
- Solving problems using equivalent forms of numbers and problems involving number theory
- Analyzing the number properties used in operational algorithms (e.g., multiplication, long division)
- Applying number properties to manipulate and simplify algebraic expressions

(Objectives organized by process rather than topic)

**Michigan Objectives**

*Understand concepts and skills related to whole numbers, number theory, and numeration, and apply this knowledge in problem-solving contexts*

- Recognizing and comparing properties of whole numbers and the whole number system
- Recognizing different classes of problem situations related to whole number operations
- Applying concepts of number and numeration systems to compare, order, and round
- Recognizing the logic of and relationships among mathematical operations
- Applying mathematical operations in real-world situations
- Using a variety of materials, models, and methods to explore concepts and solve problems involving whole numbers and numeration

(Objectives organized by topic with separate objectives for fractions, algebra, etc.)

The SC test (Praxis II) is also organized by topic.
Figure 2

_instructor familiarity with policies and tests (n=49)_
Figure 3

Instructor use of primary textbook by type of use

- Selecting problems or exercises for assessments, evaluations, or tests: 34
- Selecting problems or exercises for work in class and homework: 43
- Deciding how to present a topic: 33
- Deciding which topics to teach: 35
- I do not use this resource: 5
Figure 4

Instructor use of resource, by resource and type of use (n=49)
Figure 5

*Instructors who do not use a given resource for any purpose (n=49)*