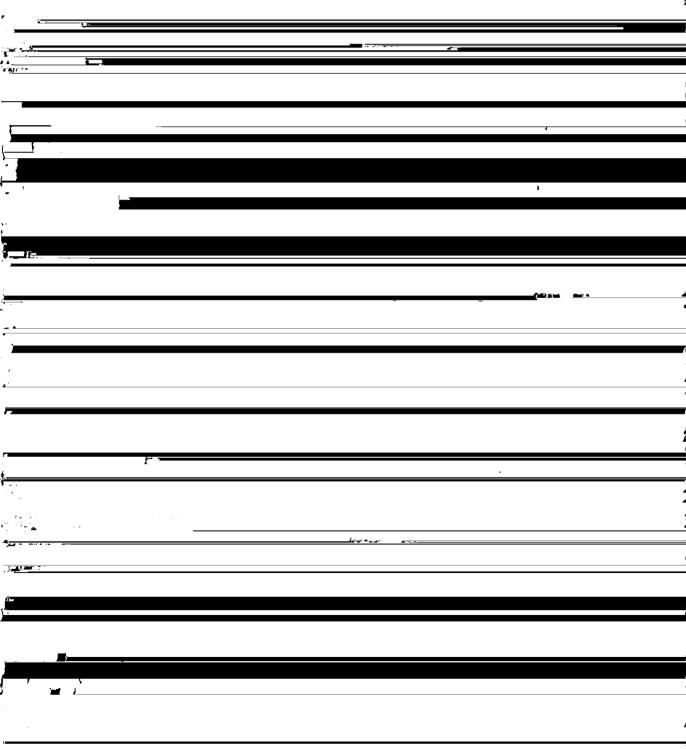
### Table 1 Structure of the Original Taxonomy

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L<sub>1</sub>11 <u>Knowledge of terminology</u>

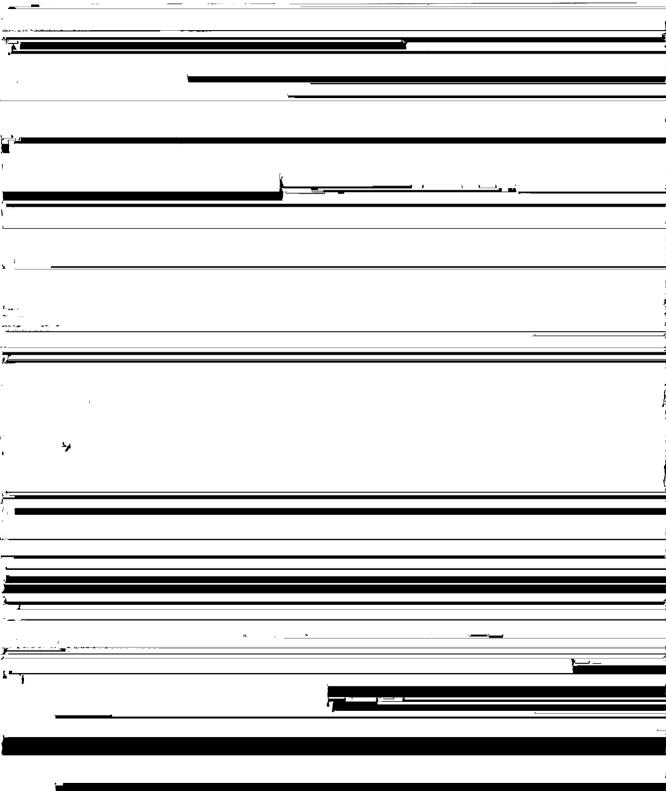
across the spectrum of categories. Almost always, these analyses have shown a heavy emphasis on objectives requiring only recognition or recall of information, objectives that fall in the *Knowledge* category. But, it is objectives that involve the under-



#### The Knowledge dimension

Like the original, the knowledge categories of the revised Taxonomy cut across subject matter

## Table 2 Structure of the Knowledge Dimension of the Revised Taxonomy



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| Revising Bloom's Taxonomy  |
| Write original compositions that analyze patterns and Understand through Create are usually considered |
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An Overview under 2. Understand. Since the student is asked to more important and long-lasting fruits of educaexplain the "consequences of the Parliamentory tion .. the more complex ones Acts," one can infer that "consequences" refers to In addition to showing what was included, generalized statements about the Acts' aftereffects the Taxonomy Table also suggests what might have and is closest to Bc. Knowledge of theories, models, been but wasn't. Thus, in Figure 2, the two blank and structures. The type of knowledge, then would hottom rows raise questions about whathen them

be *B. Conceptual Knowledge*. This objective would be classified in cell B2.

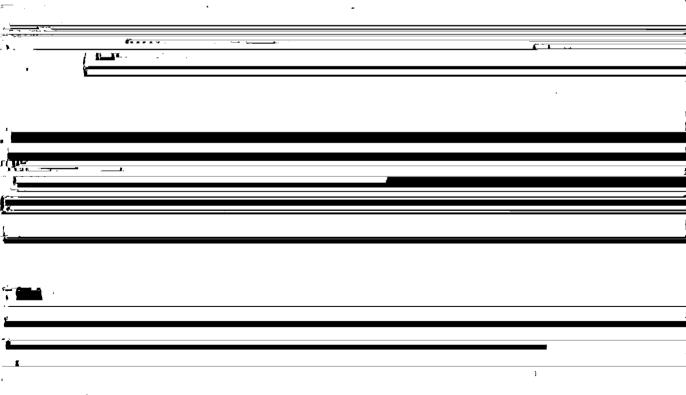
The key verb in the third objective is "write." Like the classification of the State of Minnesoto's

might have been procedural or metacognitive knowledge objectives that could have been included. For example, are there procedures to follow in additing that the toppler could applicable that the

# The Role of Metacognitive Knowledge in Learning, Teaching, and Assessing

s Krathwohl (This Issue) states, the revised Taxonomy contains four general knowledge categories: Factual, Conceptual, Procedural, and Metacognitive. While the first three categories were

general developmental trend vary from theory to theory, but they include the development of metacognitive knowledge, metacognitive awareness, self-awareness, self-reflection, and self-regulation.



Finally, there are a number of general strategies for problem solving and thinking. These strategies represent the various heuristics individuals can use to solve problems, particularly ill-defined

ferent tasks, but this is not necessarily the most adaptive use of the hammer—particularly if there are other tools that are better suited to the task. In the same way, specific learning and thinking strat-

solution. In the problem-solving area they can inple, if one confronts a novel problem that is clude the knowledge of means-ends analysis as well ill-defined, then general problem-solving heurisas knowledge of working backward from the de

 $\Box$ 

|                 | some subject matter content and retained it over some | Recognizing (also called identifying) involves |
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Organizing (also called finding coherence, inefficiency, and affordability. Notice that in this assessment task, students must not only apply a tegrating, outlining, parsing, or structuring) involves wining how alamants fit or function within a

determining how well the plan is working. A sample objective in social science could be "Learn to detect inconsistencies within persuasive messages." A corresponding assessment task could involve

is followed by a convergent phase, in which a solution method is devised and turned into a plan of action (planning). Finally, the plan is executed as the solution is constructed (producing). Not sur-



aligned with a lesson's or unit's objectives, all things being equal, then one might reasonably infer that instruction has improved.

Certainly there may be other ways for improving instruction. Examples would include en-

set about to collect appropriate descriptions of teaching. We were not seeking descriptions of excellent teaching or descriptions authored by teachers who were considered "master teachers" or "national board certified teachers" (although our teachers may well fit into these categories). Rath-

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| activities and assessment tasks are distinct vet com- important details about the | nlav (a.g. spacific |
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teachers are able to raise the learning target of a particular lesson or unit, it can be argued that instruction has improved.

### The Paradox of Simplicity Versus Complexity in Improving Instruction

There is a sense, akin to one of Murphy's

conceptual understanding of war and resources, and learn how to make comparisons in general. For this teacher, the activity statement may be a "shortcut" method of describing what is going on in class. This objective, while clear to the teacher, is implicit.

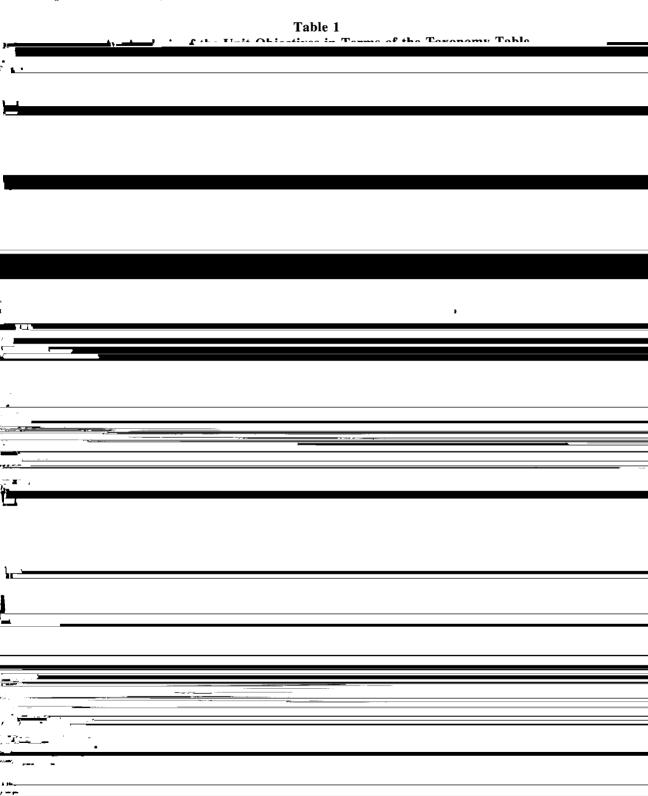
A second explanation for the conflation of objectives and activities is associated with the current much toward performance assessment (Wig-

problem, one classified as similar in cognitive chalcommon sense—they are not so easy to implement. lenge to the first, the tendency is to use the same Somewhat paradoxically, the conflation of objectives activities and assessment tasks makes it disstrategy or approach used the last time thus di-

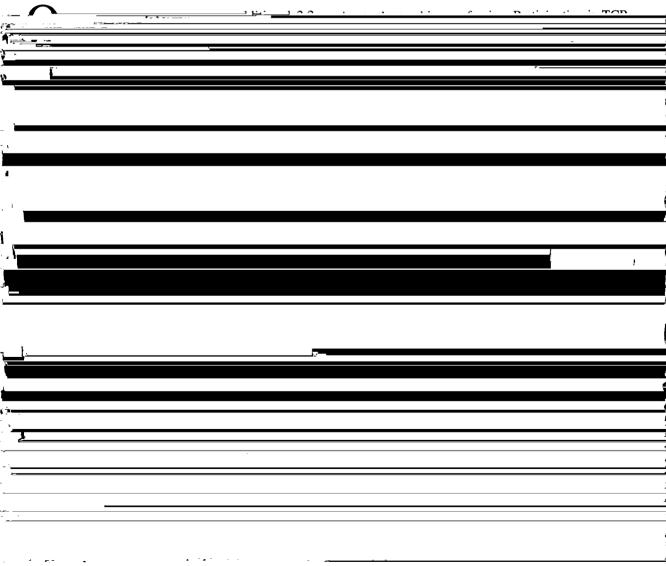
WC1. Understand and be able to explain the

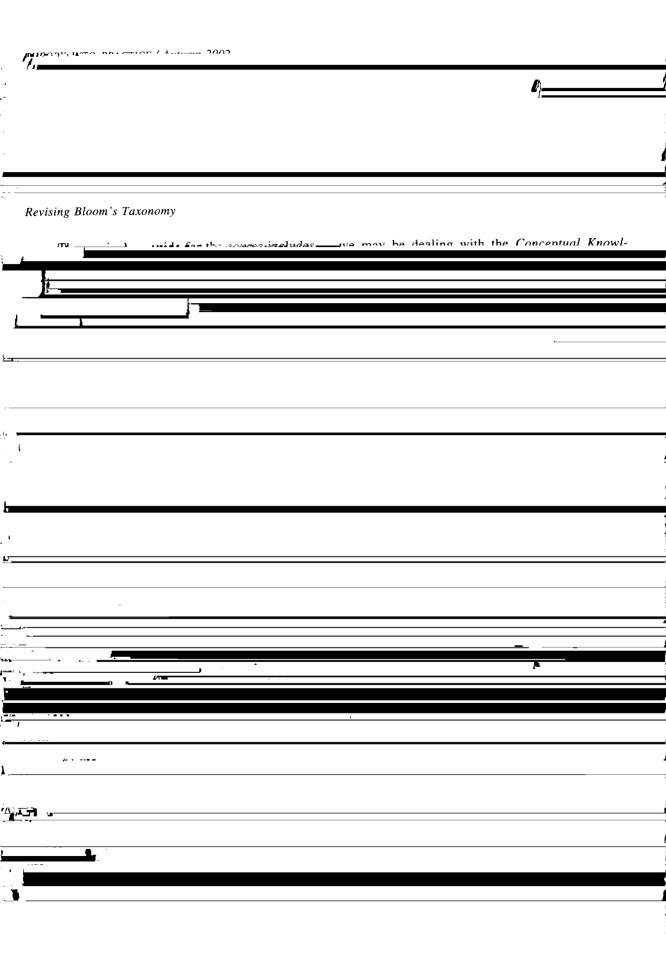
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perception that initial learning in several of these



# The Revised Taxonomy and Prospective Teachers





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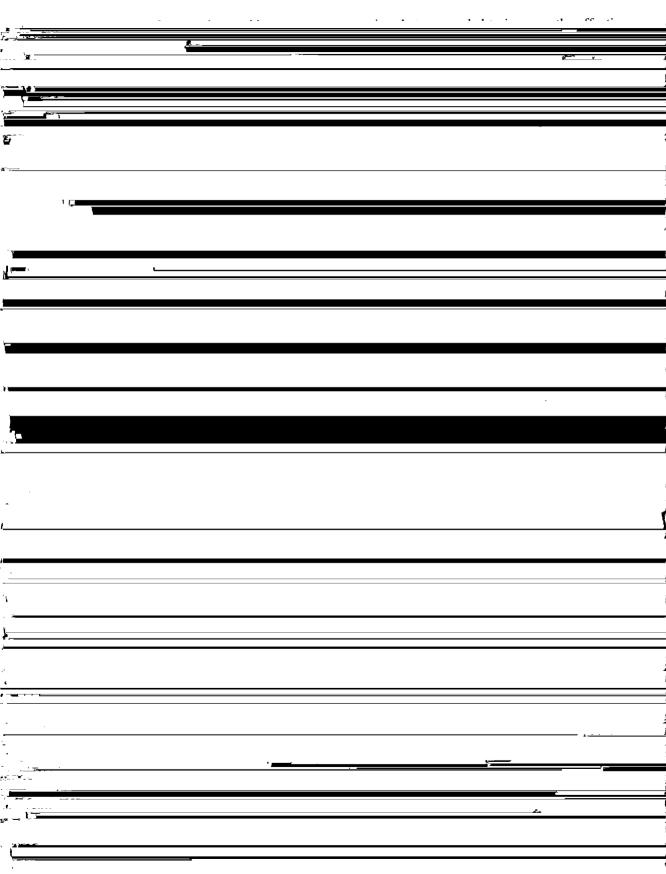
THEORY INTO PRACTICE / Autumn 2002 Revising Bloom's Taxonomy

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|                  |  | The Cognitive P                        | rocess Dimension |      |
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## Curricular Alignment: A Re-Examination

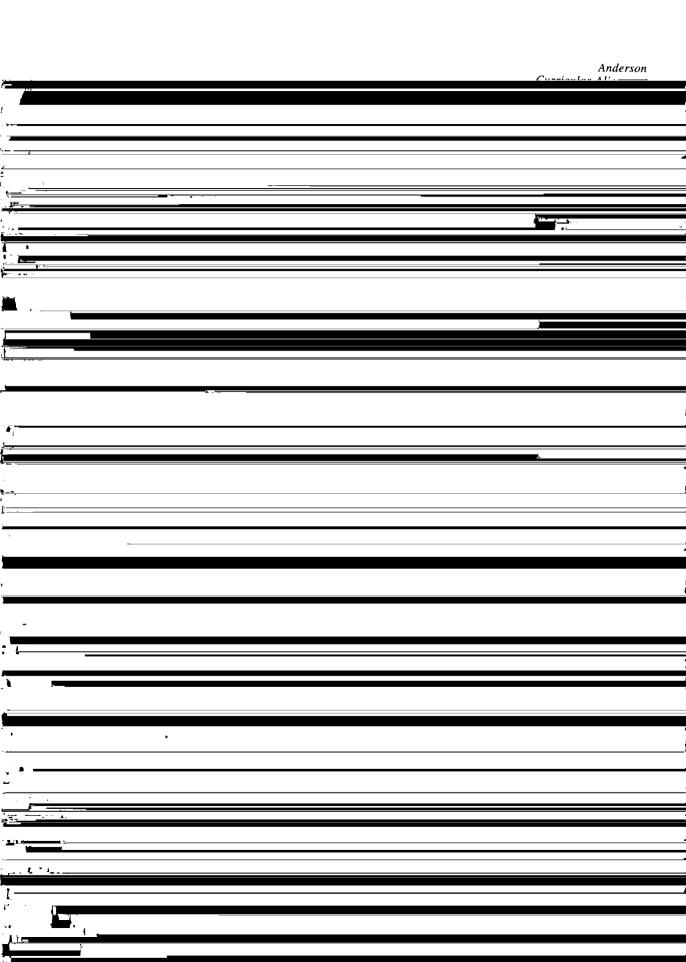
HERE IS A STORY that needs to be told. . . . It is a story about children and also about curricula—curricula transforming national visions and aims into intentions that shape children's opportunities for

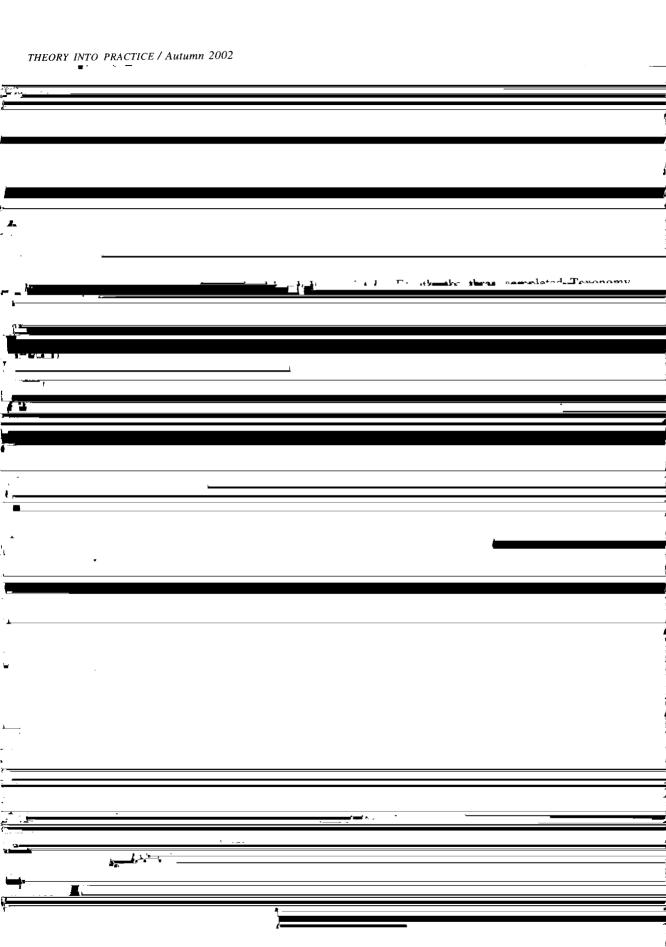
learning through schooling. (Schmidt & McKnight, 1995, p. 346)

We must "[change] the question from 'What students know and can do' to 'What students know and can do as a result of their educational experiences." (Burstein & Winters, 1994)

Content Coverage, Opportunity to Learn, and Curriculum Alignment

Figure 1 contains three primary components of curriculum: objectives (also known in today's vocabulary as content standards or curriculum standards), instructional activities and supporting materials, and assessments (including standardized tests). The sides of the triangle represent relation-





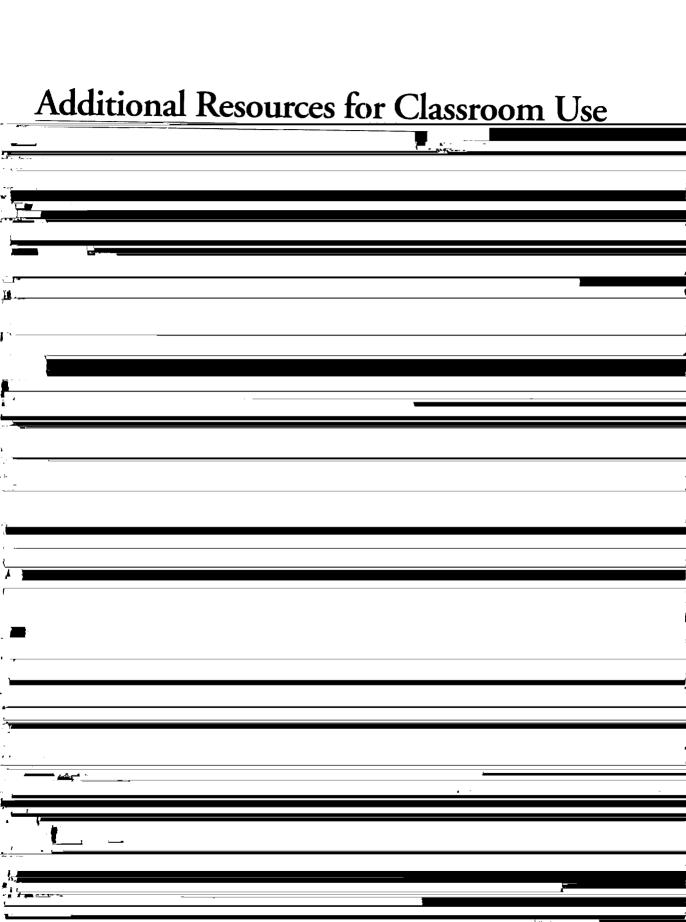
## The Value of Curriculum Alignment

Even if the reader is convinced that the Taxonomy Table is a useful tool for estimating and increasing curriculum alignment, one question remains: Why should teachers be concerned about curriculum alignment? At least four answers to this research, students learn more in the college-preparatory classes" (p. 333). Consequently, "low-achieving high school students are capable of learning much more than is typically demanded of them. The key is to provide a serious, meaningful curriculum: 'hard content for all students'" (p. 336).

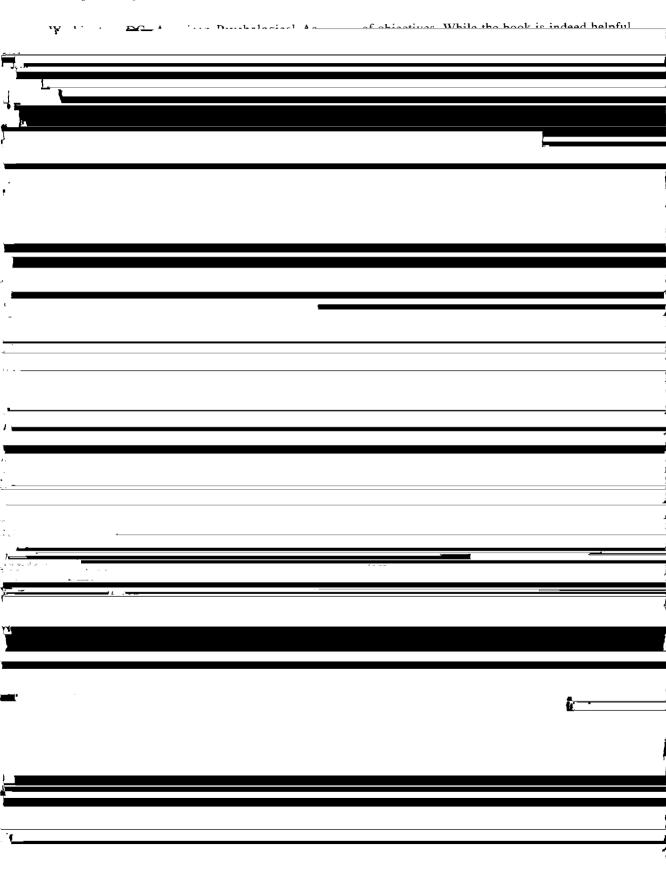
curriculum: 'hard content for all students'" (p. 336). curriculum alignment? At least four answers to this quartion and he sisten \_A third reason for the increase ١ The first is foreshadowed by the quotations with lum alignment is that poorly aligned curriculum THEORY INTO PRACTICE / Autumn 2002 Revising Bloom's Taxonomy

Harskamp, E., & Suhre, C. (1994). Assessing the opmethodology to explain "opportunity to learn."

Journal of Classroom Interaction, 27(2), 1-2. portunity to learn mathematics. Evaluation Review,



THEORY INTO PRACTICE / Winter 2002 Promoting Thinking Through Peer Learning



respects, Marzano's taxonomy is similar to the revision described in this issue of TIP. At the same or helping beginning teachers learn to teach. East Lansing, MI: National Center for Research

time, there are notable differences that should be on Teacher Education. evident to those reading both volumes.

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|            | life in classrooms. The organization of the text |   |
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