

**Action Research Study
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Title of the Study:	Why do our students do well in the revision and do badly in exams?
Location or Institution (optional)	Al-Shaqab Primary Independent School for Girls
Abstract	<p>For this study, the four teachers who teach upper division science (grades 4-6) in one school collaborated to examine the question, "Why do our students do well on the revisions and poorly on the exams?" After discussions together and a review of the literature, we had three hypotheses. The first hypothesis was that revisions may not match the test in Bloom's Taxonomy levels. Our second hypothesis was that English-language may be the issue, that perhaps the level of English required on the exam was higher than the level of English required for the revision. The third hypothesis is that our instructional methods during the revision sessions did not adequately judge the level of achievement of the students. To research this issue, the first thing we did was to do a test-item analysis to see specifically what questions were giving students the most problems. We then used Bloom's Taxonomy to rate the level at which we reviewed each standard included in the unit and the level at which we tested this same standard to see if the levels matched. Next, we rated the questions related to each standard as to the English levels at which they were reviewed and tested to see whether these matched. A university partner also observed our classrooms to see whether we: (1) included all students in the revision activities, (2) required the students to actually demonstrate mastery of the standard in the kinds of questions and tasks we ask them to complete, and (3) reviewed all the standards that would be tested. Our findings suggest that although English is a problem for students in both revisions and tests, the most serious issue is the Bloom's levels at which the concepts and skills are taught, reviewed, and assessed.</p>
Grade Level:	primary
Data Collection Methods:	questions, interview, observation
Subject/Topic:	Science



**" Why do our students do well in the revision
and do badly in exams? "**

Action research

For

Science department in Al-Shaqab Primary Independent School for
Girls

Upper grade coordinator + upper grade Science teachers

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Question: Why do our students do well in the revision and do badly in exams?

Literature Review

We divided our literature into three parts: Teacher-made reviews and tests, Bloom's Taxonomy and assessment, and ESL and assessment because we suspected that our problem was in one of these areas.

Teacher Made Tests

As part of Qatar's Education Reform, teachers have responsibility for curriculum and assessment development (Brewer, Zellman, & Ryan, 2007). This decision is supported by research that shows that most teachers trust and use teacher-made tests more than professionally-designed instruments (Frey, Petersen, Edwards, Pedrotti, & Peyton, 2005; Pigge & Marso, 1993) and that use of classroom tests produces higher pupil performance (Hill & Wigfield, 1984). The Hill and Wigfield study also showed that most inservice training related to standardized tests rather than teacher-made tests, so that teachers actually do not get training and support in developing their own tests. In addition, teachers and students often do not agree about what information is important to test and, even more important, that teachers often do not actually test what they think is important to learn (Notar, Zuelke, Wilson, & Yunker 2004). This made us realize that we need to carefully study the content of our tests to make sure they are testing what is important to learn and that students know what to expect on our tests.

Bloom's Taxonomy

The most effective teaching strategies require higher order thinking, but the most used strategies seem to involve lower order thinking. A comparison between Bloom's level of the standards that students are to be learning and actually learn in the classroom and are tested on is important in understanding whether students are actually meeting standards. Manthey (2005), for example, found that there was often a mismatch between the standard and what was taught and tested. Students, as well as teachers, may not understand what they are supposed to be learning and to what depth Dickie (2003), for example, found that physics students believe that learning formulas is more important than understanding physics concepts, and physics test reinforce that idea. These studies helped us realize that it is important to check the Bloom's levels of the standards and the classroom activities, but that it is also important to check the Bloom's levels of the revision and the test questions to see if we are reviewing at the proper level for what we what students to know and do on the tests.

ESL and Testing

The third part of our literature review had to do with assessment in a second language. The literature indicates that often tests do not accurately show what ESL students know. For example, Barrera (2006) found that often educators confuse problems with language with behaviors associated with learning disabilities. Students may even be diagnosed as having special needs because of language and cultural issues (Case & Taylor, 2005). Studies in the US have found that second language students were often put in special needs classes up to four times as often as native language speakers (Artiles, Rueda, Salazar, & Higareda, 2005; Harvard, 2001). These studies show how difficult it is to test a student in a language that is not her first language. Davison (2004), after a study of testing in several different countries, concluded that we may

have to find new ways to think about test validity that includes the professional judgment of the teacher, interaction, and trust. Although these studies do not provide any solutions, they do show that testing in a second language may not only be difficult, but may also give invalid results. In summary, our review of the literature helped us realize that revisions and tests should be carefully examined to see if there are problems with the language and if the Bloom's levels match, and that we may also need to help our students clearly understand what is needed on tests.

Methods:

Classroom Observation Report

Three classes were observed by the university partner during a revision. Rather than use a standard instrument, the observer took notes for later reflection. The questions she was examining were:

1. Were all students given an opportunity to give answers individually or were group answers given to the questions?
2. Were the questions asked in the revision similar to the exam in content/concepts covered and in level of difficulty?
3. Did the teacher clearly clarify misconceptions and lack of knowledge during the revision?

Question 1. Were all students given an opportunity to give answers individually?

In all three classes, students were allowed to give answers individually. In one class, the teacher drew names; in another students had brought objects from home and were allowed to tell how their object illustrated the concept. All teachers were careful to include all students in the revision.

Question 2. Were the questions asked in the revision similar to the exam in content/concepts covered and level of difficulty?

Clearly yes. The questions asked in the revision were very closely like the questions asked in the exam.

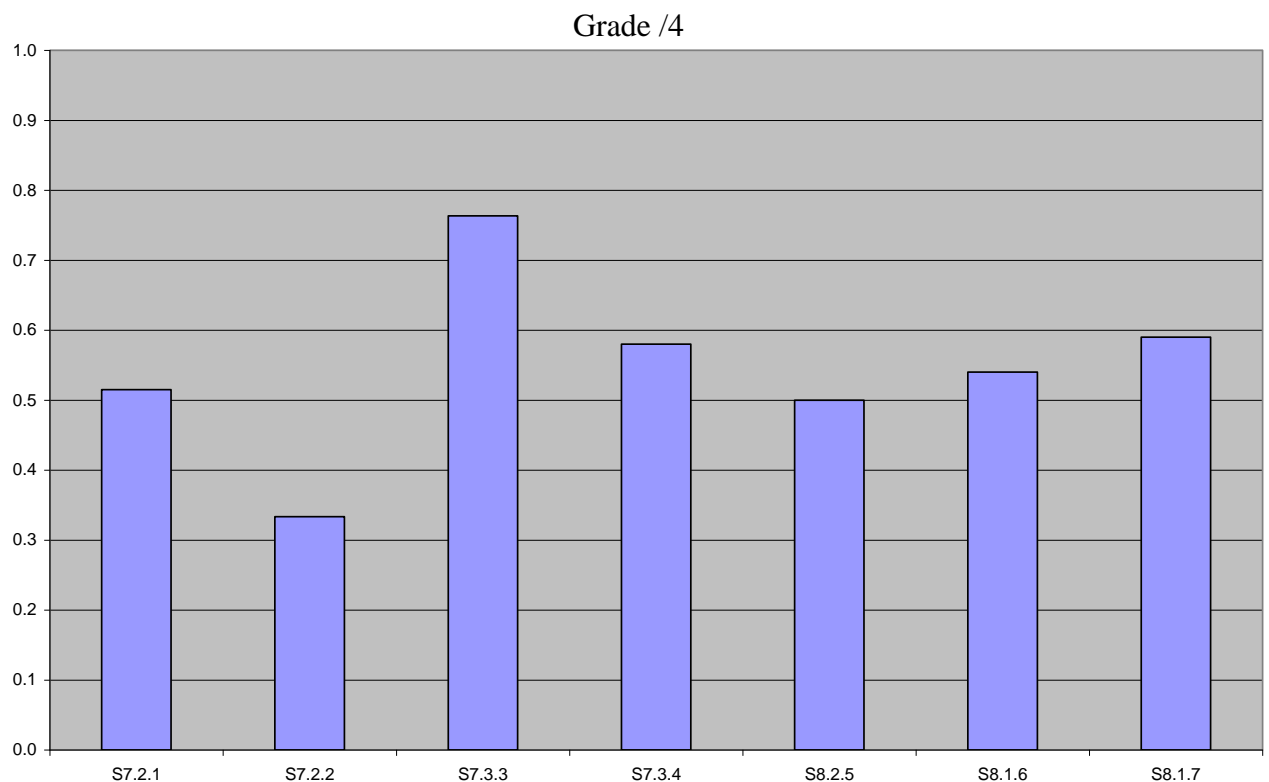
Question 3. Did the teacher clearly clarify misconceptions and lack of knowledge?

The answer to this question relates back to question one. Often teachers corrected students' answers' without clearing up the lack of knowledge. The focus was more on getting the correct answer than clearly understanding the concept.

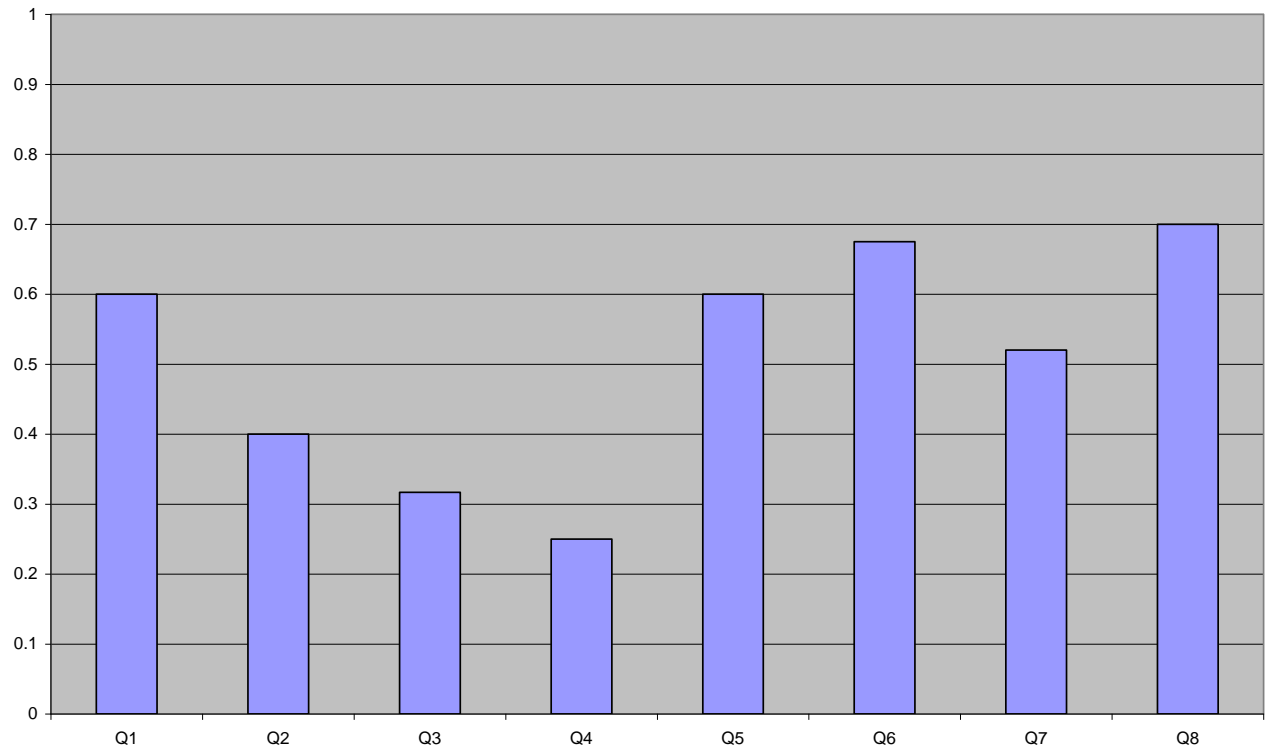
Recommendations

1. Although almost all students were included in the revision, it was impossible to know whether other students also understood that questions. What might strengthen the revision process is to ask several other students to give answers related to the same question to make sure they really understood the concept and were just not writing down the “correct” answer.
2. It might be helpful to explore a little deeper into students’ understanding. One teacher often asked “why” after the student gave a correct answer and even after a student gave an incorrect answer. This would be a good process to use more often to (1) make sure students really understand and (2) find out what is causing them to misunderstand.
3. The questions asked in the revision were very closely like the questions asked in the exam; however, this may lead students into thinking they can memorize answers rather than understand concepts. Then, if the question changes a little, the memorized answer doesn’t work. I recommend trying to ask questions during learning activities and during revisions that use higher levels of Bloom’s – that examine the concept in multiple settings. For example, asking, “What if...(I changed this; or added that, or looked at it from this way, or tested it with....)”.

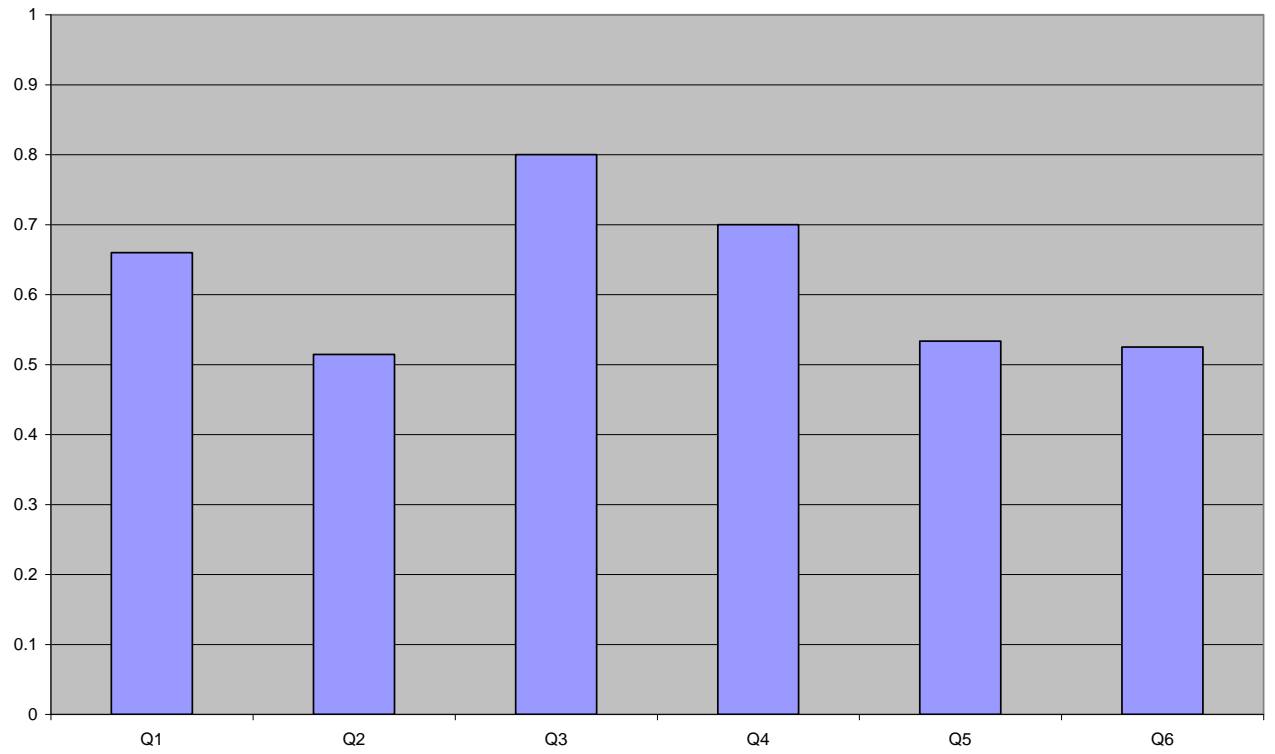
Test score analysis.



Grade /5

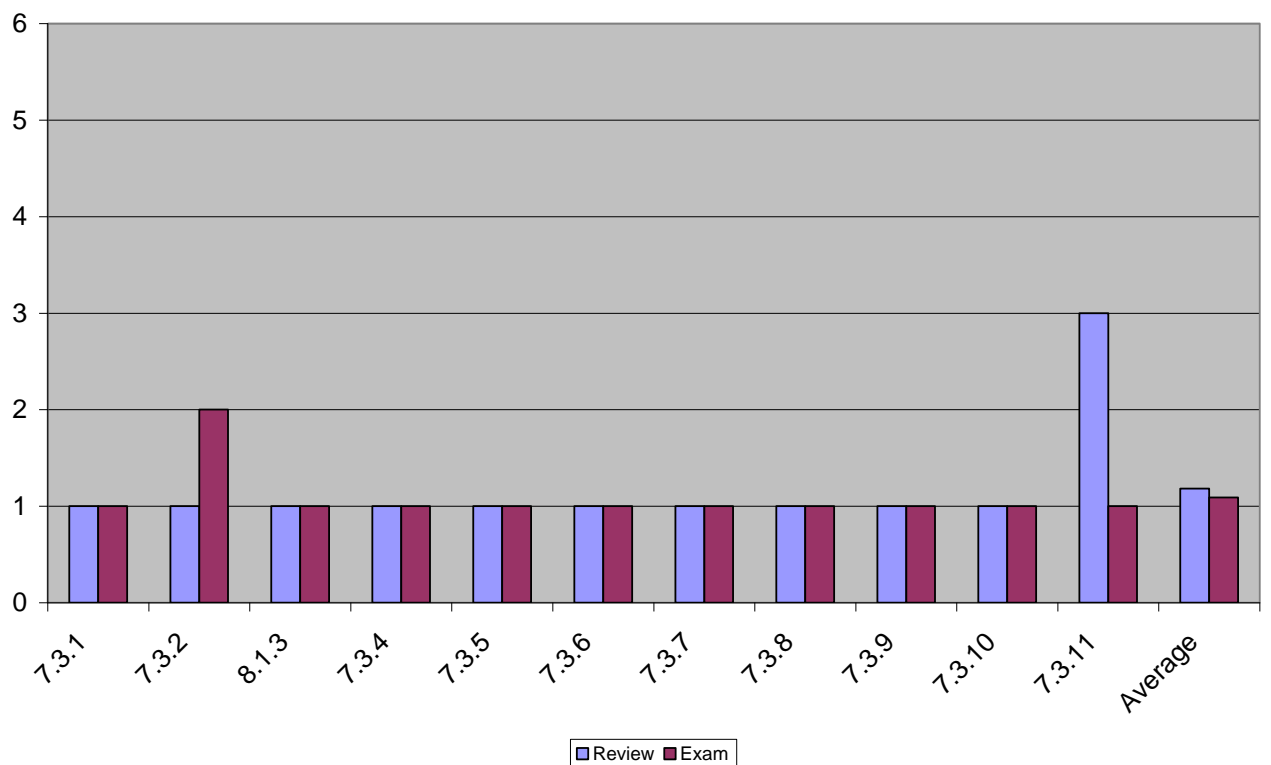


Grade / 6

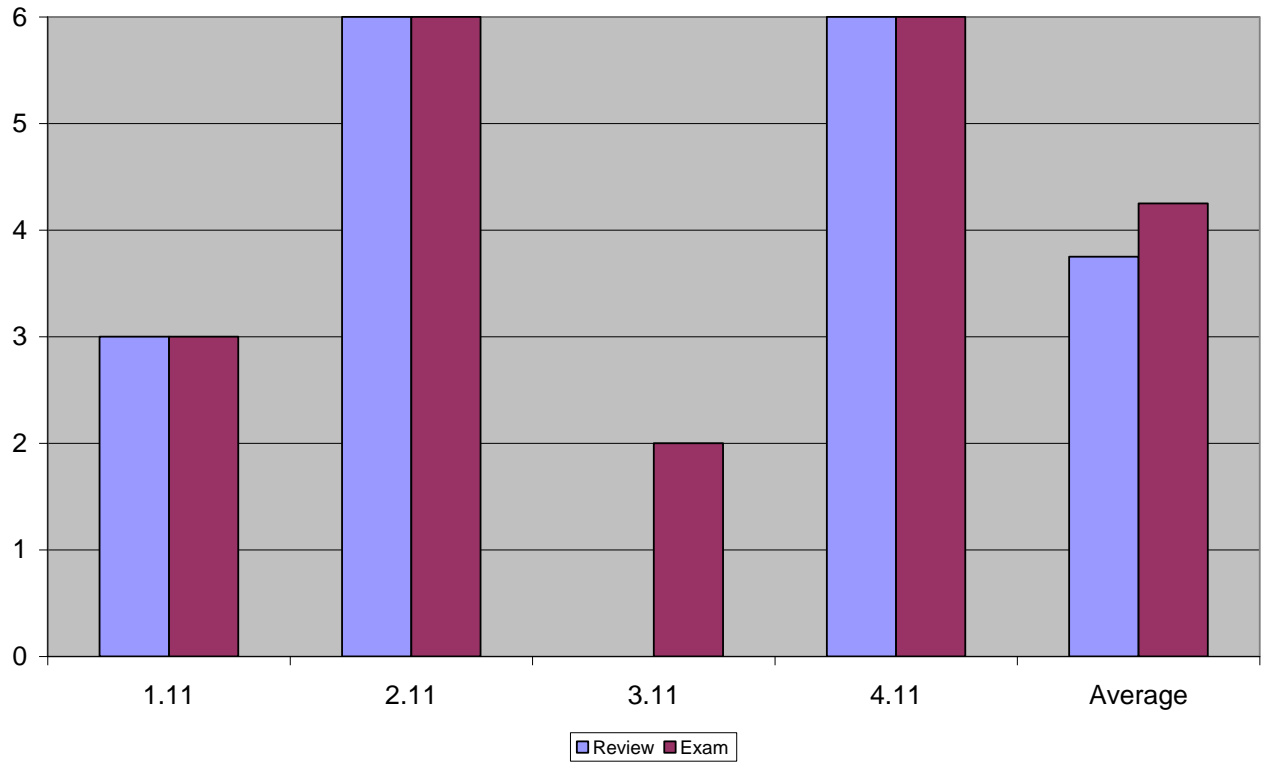


Bloom's Taxonomy

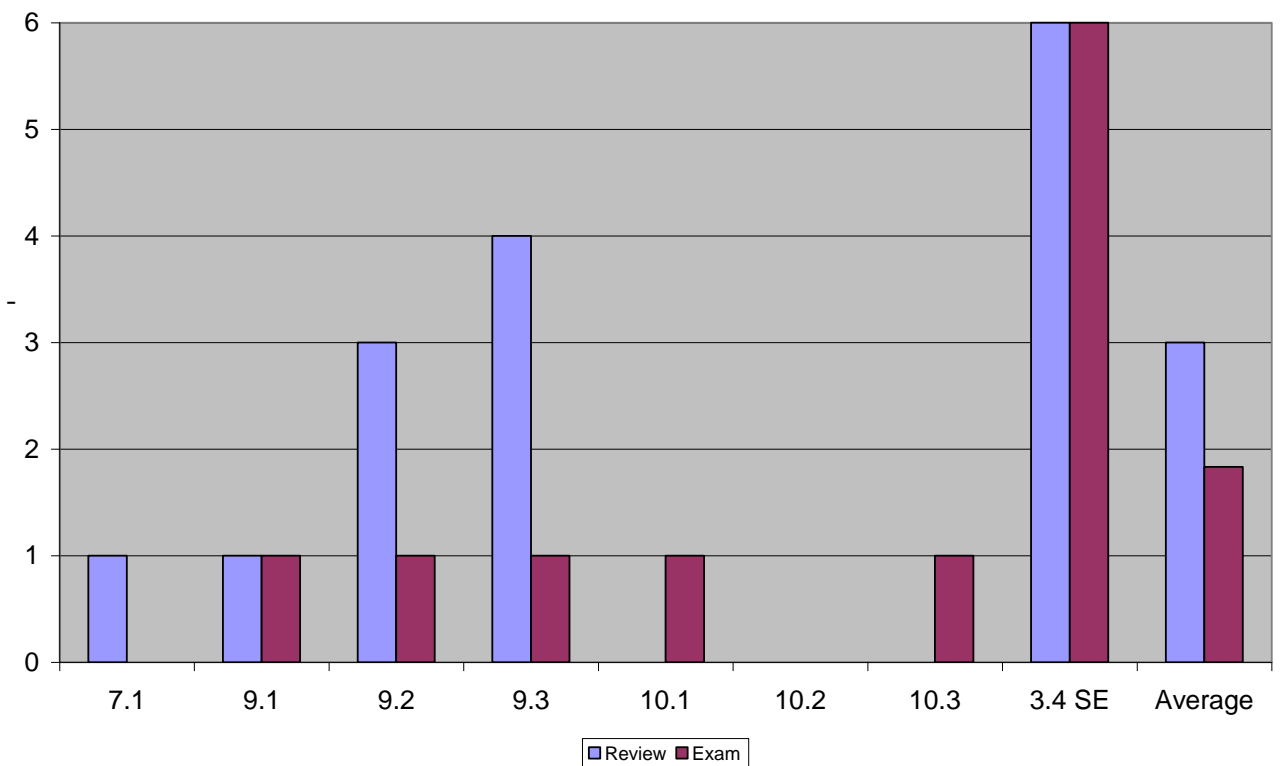
Bloom's Levels: Grade 4



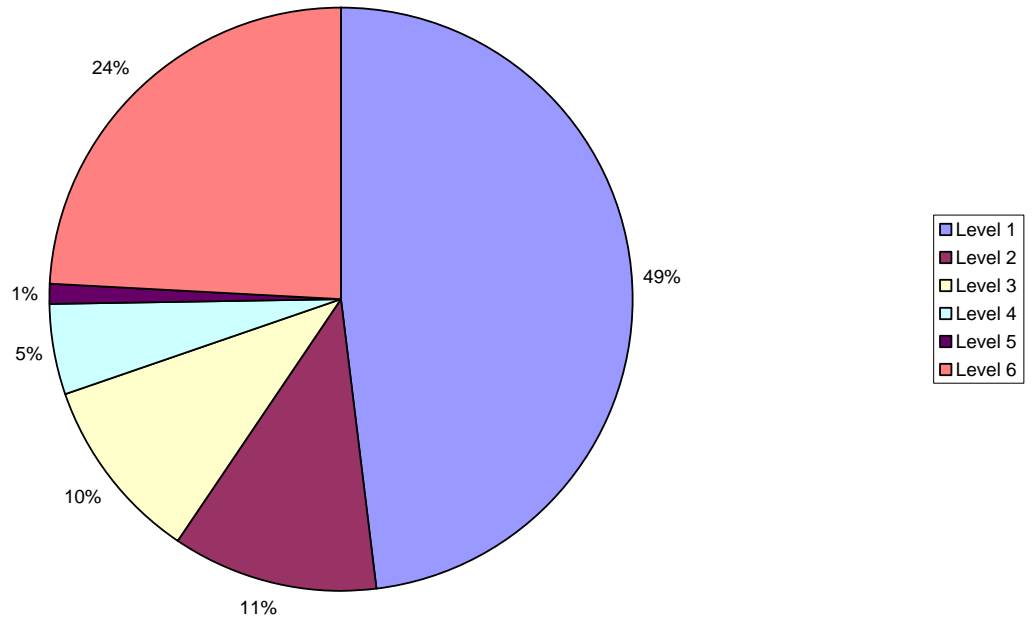
Bloom's Levels: Grade 5



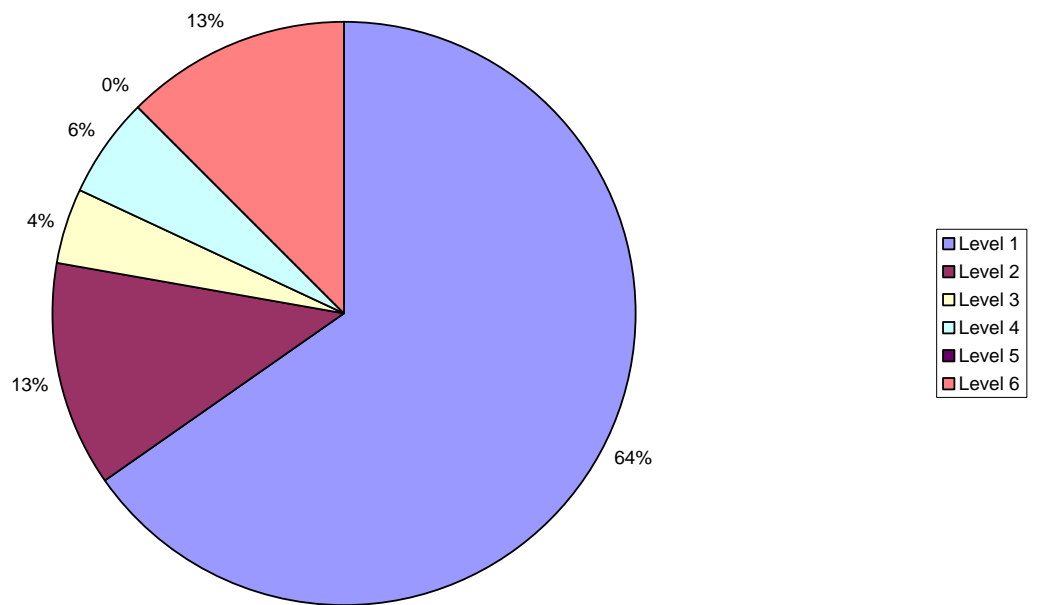
Bloom's Levels: Grade 6



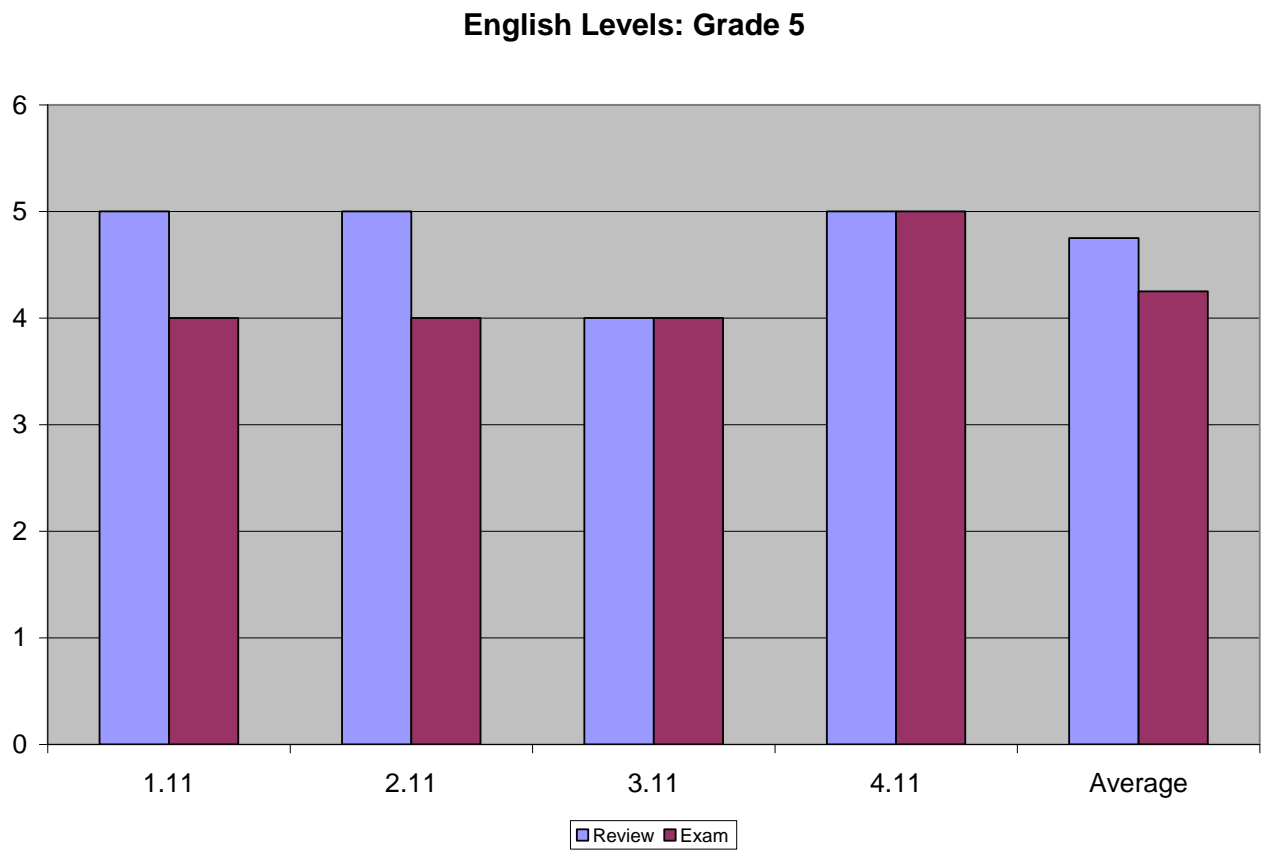
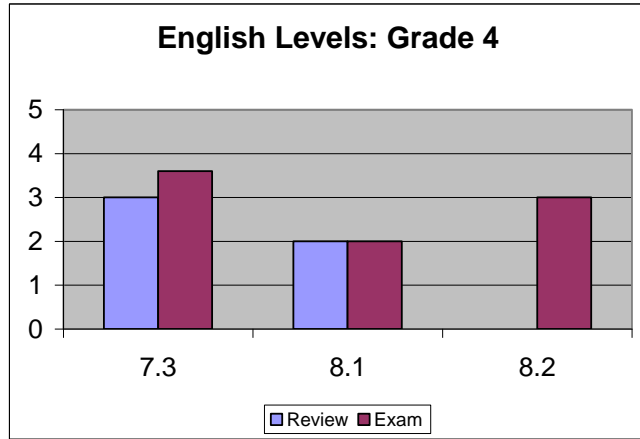
Bloom's Levels Revisions



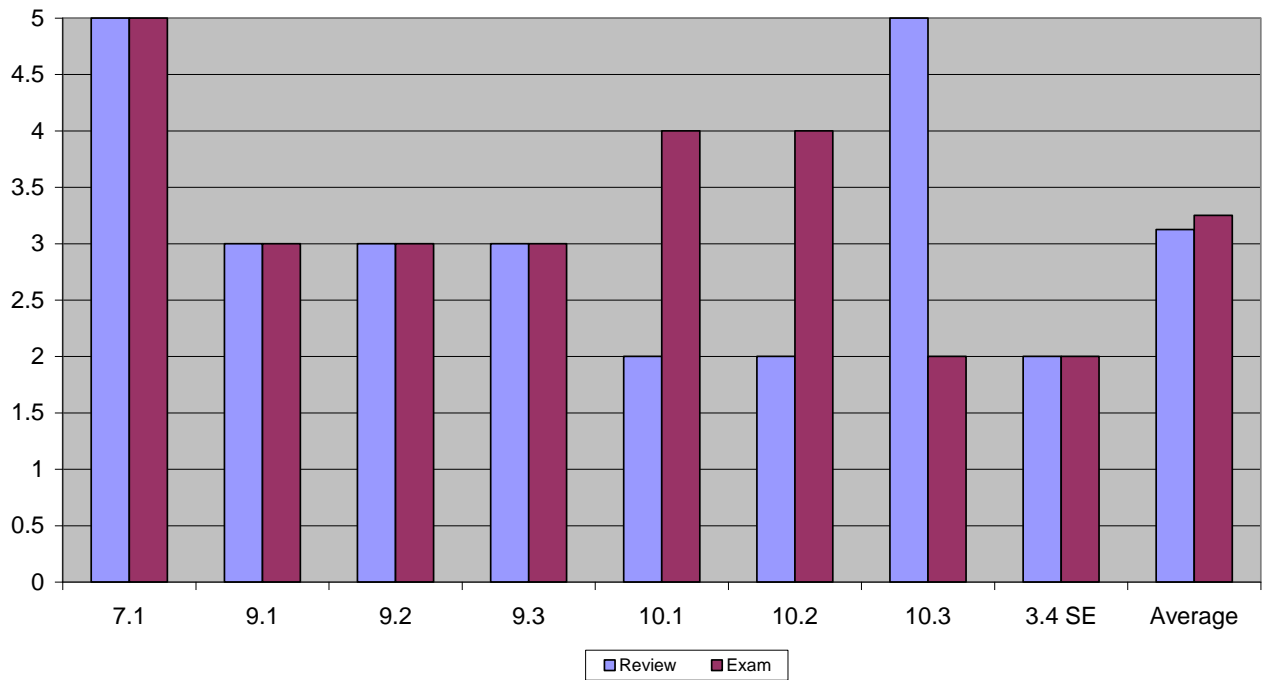
Bloom's Levels: Exam



English level.



English Levels: Grade 6



Discussion

We learned that our exams match our revisions very closely and address standards. These are not problems.

English language is somewhat a problem because students tend to miss questions that require them to know how to read and write English at higher levels.

We learned, however, that the biggest problem is that we are reviewing and testing at low cognitive levels (Bloom's levels).

This means that students are memorizing information.

When the question changes on the exam, they only can remember the memorized information and cannot understand the question or the information.

We are going to apply this in our classrooms by trying to teach, review, and test at higher Bloom Taxonomy levels so that students can use information in different ways.

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