



TEARING DOWN WALLS TO PROMOTE STUDENT-GENERATED QUESTIONS

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## TEARING DOWN WALLS TO PROMOTE STUDENT-GENERATED QUESTIONS

Teachers are constantly encouraged to develop their students' abilities in thinking. As Fred Hechinger states, "the public schools have discovered the importance of critical thinking, and many of them are trying to teach children how to do it" (New York Times, 1987, February 24, p.27). While teachers use various questioning strategies to develop and enhance thinking, historically they are the generators of the questioning process. Thus, many students are never taught the skills for generating their own questions.

Researchers agree that students must be taught the strategies so that they are empowered to ask questions (Smith, 1973; Andre and Anderson, 1978-1979; McFeely, 1984). Other aspects that have been determined about the student-generated questioning process include the fact that there are many different approaches to teaching students this skill, and it can be on a individual, group, or class basis. Further, it has been concluded that students at all levels of education can be taught (Gillespie, 1990).

Despite the nearly universal agreement that students need to do more, think more, and be more active in the classroom, most classrooms are still firmly teacher-centered. Gall (1984, p. 43), for instance, finds that "about 60 percent of the teachers' questions require students to recall facts; about 20 percent require students to think; and the remaining 20 percent are

procedural." No time, according to Gall, is allowed for students to generate their own questions. What then are the factors which prevent teachers from allowing students to develop their skills by asking questions?

There are five major walls that need conceptual blockbusting for student-generated questioning to occur in classrooms. They are: (1) lack of understanding of taxonomies, (2) time constraints, (3) teachers' fears, (4) content coverage needs, and (5) improper modeling.

The first wall to be torn down regards taxonomies. Teachers may or may not know the taxonomy levels (or types of questions) and how to teach students to use them. According to Gilbert (1992, p. 41), " a taxonomy is a system of categories or classifications that are used for purposes of organization, conceptualization, and communication." While the literature suggests various models of taxonomies and the ones that are more appropriate for different disciplines, Bloom's Taxonomy is renowned as an instructional tool. Because of its hierarchical structure in the cognitive domain, it requires that students have knowledge, comprehension, application, analysis, synthesis and evaluation (or any combination) to process the information. Here then, are some simple strategies that teachers can utilize to incorporate the taxonomy in the student-generated questioning process.

Become conscious of the verbs in the taxonomy (Select several verbs (Figure I), and begin to use them in your daily

interactions).

Have the students use these verbs as they develop questions and work through the various levels.

Use these same verbs to evaluate the questions that the students construct.

### Verbs in the Taxonomy

There must be a deliberate attempt by teachers to make students aware of the verbs used in the taxonomy by explaining the verbs and how to generate questions by using them. This can be done in the course of a week by selecting a level for each day and concentrating on each level daily. In this way, students will learn the different types of questions. For more advanced classes, students can work in groups where each group is designated a level to generate its questions. Teachers can do this by hand-outs or by creatively distributing the designated level, such as on different colored, neon xerox paper.

As students begin to use the taxonomy, they may detect that many of the verbs used at the one level (in particular, the comprehension) of the taxonomy can be found at other levels. Focus on the comprehension level and cite some of the verbs; for example, compare, contrast, describe, explain, summarize, classify, and interpret, to name a few. Orlich (1991, p. 159) explains on the comprehension level "that the categories are not discrete entities; they are interactive." Taking the information, the students should be encouraged to rephrase it, describe it in their

own words, and/or make comparisons/judgments/evaluations by constructing their own questions. "The important point for the teacher to remember is that difficulty in classifying any question is no detraction from the quality of the question" (Sanders, 1966, p.8).

Hunkins (1976) recommends that students also should be encouraged to assess questions. When students judge and evaluate how effective their questions were, they are focusing on the learning objectives as well.

#### Concept of Time

The second wall that needs to be eliminated is the concern of the teacher regarding the class time or preparation time. Kloss (1988) concluded that relatively few teachers carve out the time or put forth the effort to teach students these skills. It must be emphasized that it does take time for students to become skilled in these strategies. Once the students know the taxonomy, however, teachers must make it a natural part of their daily activities, that is, cultivating the opportunities for students to practice by asking their own questions.

Perez (1986) suggests several ways that teachers can give students practice:

1. reverse sentences into questions
2. turn chapter titles, headings, and subheadings into questions
3. allow practice with the words who, what, when, how, and why

There are dozens of techniques and activities that teachers

can do to teach these skills. The most important point to remember is that this teaching time is time well spent.

### Teachers' Fears

The third area to focus on is the teachers' fears of removing the invisible walls that keep students in their traditional place. One researcher (Kloss, 1988, p. 248) states "asking questions, then, can help the teacher step back a little and allow those who should be most involved in learning--the students--to come forward as full and equal participants in the collaborative adventure of the minds."

Perhaps teachers hesitate to step back for several reasons. They may interpret this as loss of control of the classroom structure. The key phrase of "equal participants in the collaborative adventure" should be an easy task for teachers who believe that student-generated questions are important. Another fear is the teacher's beliefs that the student questions consume more class time when it could be spent better by having the teachers simply explain the material.

One of most crucial fears is that teachers do not want to be embarrassed by not knowing the answers to student-generated questions. Several authors suggest that teachers readily ADMIT not knowing the answers to questions and select from the following strategies:

1. Ask whether someone in the class can answer the question.
2. Propose a plan for obtaining evidence for answering the question or ask the students to suggest how it should be

- investigated.
3. If possible, suggest a resource where the students can obtain the information.
  4. Volunteer to find the answer yourself and report back to the class (Goodwin, et. al, undated, p. 19).

Aitken and Neer (1992) make the profound statement that teachers are reticent to have students generate questions for fear of making them uneasy; yet by this very action, students may be "victimized" (p.23).

In essence, teachers should feel good about utilizing classroom time by creating challenges where students have to learn to ask questions and think. This assists in their development into independent and active citizens.

#### Content Coverage

Teachers' concerns are focused on the delivery requirements of the curriculum. They recognize the content to be covered must meet student needs as well as interests so they are eventually prepared for the world of work and lifelong learning. Clearly, there are expectations for the school programs in regard to the foundation of each student. Dempster (1993, p. 433) discusses the curriculum debate of whether "Exposing Our Students to Less Should Help Them Learn More." He contends that curricula in certain disciplines are "overstuffed and undernourished" (p.434) and urges teachers to be more selective and yet make learning "personally meaningful" (p.435). Learning is enhanced if students generate questions because of their relevance to them and their patterns of thinking.

Advantages to these revelations are many. Singer and Donlan

(1982) determined comprehension in students improves while Shoop (1986) concluded that students who construct their own questions usually process the solutions. The key to learning is providing them the opportunity to do the processing. Other benefits are the development of critical thinking skills and the empowerment of both students and teachers (Wing, 1992).

#### Proper Modeling

The final wall that needs to crumble is in the teachers' perception of what constitutes proper modeling. Unless teachers have had proper training, they are reluctant to model questioning because they may not be familiar with the instructional behaviors necessary. The educational literature indicates modeling should occur by having the teacher demonstrate the behavior and then transfer the responsibility to the students. Simply showing the students how to do it is the most effective technique. This should not, however, hinder teachers from trying their own methods. According to Aitken and Neer (1991), encouragement was the best behavior to promote student-generated questions.

Furthermore, encouragement should be complemented by practice and a variety of teaching methods if students' chances of success are to be increased.

#### Conclusion

Encouraging students to ask questions in the classroom is a skill that teachers must acquire. Demolishing the walls that exist in their minds requires knowledge of how to teach the

taxonomy, recognizing that this is a gradual process requiring time to feel their fears and work through them, exposing students to the curriculum by having them be owners of their own learning, and by making the commitment to implement the modeling aspect using encouragement in the most conducive teaching style. Only in this way can teachers begin teaching students how to generate questions and think on higher and more complex levels.

#### VERBS AND THEIR COGNITION LEVEL

##### BASIC LEVEL THINKING

##### HIGHER ORDER THINKING

<u>Knowledge</u>	<u>Comprehension</u>	<u>Application</u>	<u>Analysis</u>	<u>Synthesis</u>	<u>Evaluation</u>
acquire	associate	apply	analyze	arrange	appraise
count	compare	choose	categorize	combine	argue
draw	contrast	classify	compare	construct	assess
identify	describe	complete	diagram	create	compare
list	explain	compute	group	design	contrast
match	fill in	demonstrate	infer	explain	decide
name	illustrate	estimate	point out	plan	describe
read	infer	examine	predict	propose	evaluate
recite	predict	organize	relate	revise	judge
recognize	rearrange	predict	separate	rewrite	rank
state	summarize	solve	subdivide	summarize	summarize
write	translate	use	transform	transmit	validate

Figure 1. Verbs in the Cognitive Domain  
 Source: Adapted from Goodwin, et. al (undated)

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