

The art of composing SBE Certification Exams

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The illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn, and relearn.

~Alvin Toffler

While the SBE Program of Certification itself does not directly teach, it does have the companion educational task of assessing the level of vocational accomplishment through creation and administration of testing. As part of that effort, SBE has the implicit duty to adjust the scope and content of its examinations to reflect current broadcast technology. If Certification examinations fail to reflect industry principles and practices it not only dilutes the value of certification for all who participate, but also threatens the credibility of the Certification effort as a whole.

It is not surprising then, that one of the most important duties of the Certification Committee requires regular examination of the relevance of every certification question, ascertaining whether some need to be rewritten to improve their clarity, and creating new ones as our industry evolves. If you've ever been curious about just how questions get into the Certification exams, you may find the following points of interest.

1. Every question on every Certification Exam is authored by a member of the Certification Committee and reviewed by that Committee before it is incorporated into the question pool, so each question is based upon the personal industry experience of one or more of our Committee Members. This committee authorship is one of the primary ways we insure that the questions are relevant to broadcast technology. But selecting the subject of a question is only the first step!

It is surprisingly difficult to frame a

clear and unambiguous question—and even more difficult to compose and structure the possible responses in such a way as to present only one challenging, but absolutely correct, answer. And frequently we find it far more difficult to compose the incorrect answers that the correct ones! Educators have written many books on the art of constructing fair but effective multiple choice exams, and here are some of the rules we try to follow:

- We frame the question (what educators call “Writing the Stem”) so as to clearly pose a problem or state a question. The test-taker should be able to understand the question without reading it several times and without having to read any of the possible answers;
- We write the correct answer (“Writing the Response”) in such a way as to be unquestionably the only correct answer;
- We base the other possible answer choices (“Composing the Distractors”) on logical fallacies or common errors related to the stem question, so as to further challenge the test-takers understanding of the stem question;
- We minimize use of “all of the above” or “both A&B” as distractors, since they make it possible to guess the correct answer with only partial knowledge;
- We use “none of the above” infrequently, as it is only appropriate for situations in which there are only absolutely correct answers, such as mathematics problems;
- We examine the entire selection of questions in each Certification Exam to prevent inadvertently providing answers to previous or subsequent questions through question wording or choice of distractors.

Writing effective and fair multiple

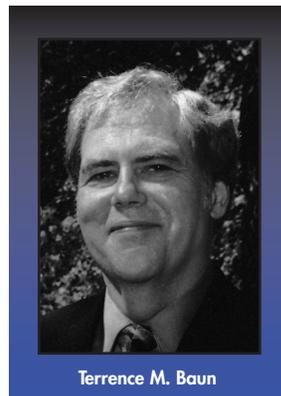
choice questions is not easy. It demands not only careful selection of topic and achievement level, but also development of a clearly defined answer accompanied by plausible distractors.

2. Every question in the test pool is periodically reviewed by the Certification Committee members. We ask:

- Is this question still relevant to the industry? A majority “No” response from the panel will remove such questions from the question pool immediately;
- Is this question framed accurately and is the correct answer the unambiguous correct choice? Often someone on the Committee will bring a fresh viewpoint to the question, resulting in revision of one or more of the “distractors” or changes in the language used for the correct answer;
- What is the level of technical competency reflected by this question? Is a question suitable for more than one Certification level? Should its level be adjusted upward or downward because of changes in the industry? Can this question be used for more than one Certification area?

3. When a question is missed consistently by a significant number of test-takers, or is the subject of specific comment by an individual test-taker, that question is brought to the Committee to consider the following:

- Is the question clear and unambiguous? Are the distractors appropriate?
- Is there a cultural bias or false assumption in the question that has gone undetected?



Terrence M. Baun

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the **SIGNAL**

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Wisconsin, Madison Campus.

Just prior to the SBE National Meeting, the Society will produce a national Webcast, similar to the one held last year from Pittsburgh, Pa. The program is planned for Monday, October 13 at 8:00 pm EDT and will involve a number of SBE Board members and other leadership. A portion of the program will be dedicated to taking questions from members.

The schedule for the National Meeting starts with the Certification Committee Meeting in the afternoon on Tuesday, October 14. Tuesday's schedule also includes the fall meeting of the Board of Directors from 6:00 pm to 10:00 pm. Activities on Wednesday, October 15 will include the annual SBE Fellows Reunion. This year, it will be a breakfast from 8:00 am to 9:00 am. This breakfast is

being sponsored by Kathrein Inc., Scala Division.

Also on Wednesday, will be the Annual Membership Meeting from 4:00 pm to 5:00 pm. The National Awards Reception will follow the meeting from 5:00 pm to 6:00 pm., which is sponsored by Trilithic. The SBE National Awards Dinner (ticket required) will highlight the evening beginning at 6:00 pm. The dinner will include special guest speaker Richard D. Cupka Sr., and of course, the SBE National Awards will be presented. The dinner is being sponsored by Microsoft Radio Communications.

For more information about the Wisconsin Broadcasters Clinic, please see the WBA website at www.wi-broadcasters.org.

Tickets for the SBE National Awards dinner are \$14 per person and can be ordered by contacting Debbie at the SBE

National Office at (317) 846-9000 or dhennessy@sbe.org. VISA, MasterCard, and American Express are accepted.



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- Is the question appropriate for this particular level and area of Certification?

Upon further discussion, the offending question(s) are either rewritten or removed from the exam pool.

4. Generating the tests. All questions are contained in a large database, with each question tagged with the level of difficulty and appropriate Certification specialty. About one month prior to every exam period, questions for each level and certification specialty are randomly selected from this database and forwarded to a group of Committee members for review. This double-check is designed to catch any typographic, grammar, or coding errors in the database, and to verify again that the questions are relevant for the particular levels and certification specialties to which they are assigned. It is not unusual at this stage for several questions out of several hundred to be flagged and either replaced or corrected prior to the printing and distribution of the

examinations. After this review, it is from this group of questions that the actual session examinations are selected.

5. Essay Questions. At the Senior and Specialist level, an essay question allows the applicant to express more completely an understanding of a particular segment of broadcast engineering technology. Committee members, who also write the essay questions, select appropriate questions for each applicant based upon that applicant's past knowledge and experience as detailed in the examination application. Three questions are selected in this manner and presented to the test-taker, who chooses one to answer.

Grading is done by Certification Committee members, each of whom independently assigns a numerical value to the essay answer, which are added and averaged to become the final score. To help in grading these tests, essay questions have suggested "answer highlights" to assist reviewers in determining the completeness of the answer.

MARK YOUR CALENDAR

October 7 & 8, 2008

SBE Chapter 22 Broadcast & Technology Expo

Event Center at Turning Stone Casino & Resort in Verona, NY

Sponsored by: SBE Chapter 22

October 14-15, 2008

2008 SBE National Meeting

Marriott Madison West Hotel, Middleton, (Madison) Wisc.

In conjunction with: The Wisconsin Broadcasters Clinic, presented by SBE Chapter 24, Madison and the Wisconsin Broadcasters Association.

October 14-16, 2008

2008 Wisconsin Broadcasters Clinic

Marriott Madison West Hotel, Middleton, (Madison) Wisc.

Sponsored by: SBE Chapter 24 and the Wisconsin Broadcasters Association

October 20-21 2008

2008 Annual Engineer Workshop

Sheraton Indianapolis Hotel & Suites, Indianapolis, IN

Sponsored by: Indiana Broadcasters Association

October 20-21, 2008

2008 Chapter 20 Annual

Equipment Expo

Pittsburgh ExpoMart, Monroeville, Pa.

Sponsored by: SBE Chapter 20

November 14, 2008

6th Annual Ohio Broadcast Engineering Conference

DoubleTree Hotel, Columbus, OH

Presented by: Ohio Association of Broadcasters, SBE Ohio Chapters, The Ohio Section of the Society of Motion Picture and Television Engineers