

**An Analysis of Accounting Tests  
Used in the 1989  
Virginia FBLA Regional Competitions**  
by  
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**(ABSTRACT)**

This study had four purposes. They were to determine whether accounting tests used during the 1989 Virginia FBLA regional accounting competitive events were reliable, valid, comprised of test items at appropriate difficulty levels, and to ascertain if the curricular drift was present.

Secondary-level high school business students, all of whom were members of Virginia FBLA, participated in this study. Nine of the 11 Virginia FBLA regions were represented in this study. Test scores for 152 students were obtained for Accounting I and 81 students for Accounting II.

The researcher examined the tests for reliability by applying Kuder-Richardson Formula 20 (KR-20). Both the Accounting I and Accounting II tests were found to have low reliability estimates, .81 and .78 respectively.

The researcher addressed the question of test validity. Content analysis was performed to determine content validity. The test titles and items were reviewed to determine face validity. Item choice percentages were calculated and chi-square comparisons were made to uncover response bias.

The difficulty level of individual test items was also studied through item analysis. Problems with item difficulty levels were noted for both tests.

The question about curricular drift was resolved. One-way ANOVAs ( $\text{Alpha}=.05$ ) were used for this purpose.

Conclusions resulting from data analyses performed and reported in this study follow: (1) the tests were not reliable estimates of individual achievement; (2) though the tests were found to be content and face valid and to have no response bias, they cannot be considered valid since they are not reliable; (3) a problem with the difficulty level of the test items which adversely affected the reliability coefficients obtained was also noted; and (4) homogeneity of total score means across the nine participating regions was apparent, therefore, curricular drift was not a problem.

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Chief Executive Officer of FBLA-PBL, Inc. ;  
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For always believing in me and not allowing me the option to stop, I would like to thank my daughter,

Her encouragement has kept me on track for my entire educational career.

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**CHAPTER I**  
**PROBLEM AND SCOPE**  
**Introduction**

Accounting is important to society because it helps to undergird business and industrial growth. All the daily financial activities of a business organization must be accurately categorized and recorded. This is the very core of the accounting process.

Information from these accounting activities provides management with knowledge vital when making decisions to establish organizational goals and policies. Additionally, accounting information helps direct the financial operations and keep the business profitable, or at least solvent.

Therefore, if business is to prosper, it is essential that employees in management and financial fields have sufficient knowledge of accounting applications and procedures. To meet this challenge, accounting courses are included under the business education program area of vocational education at both the secondary and postsecondary levels. This

curriculum offering helps fill business's need for qualified, knowledgeable, and effective accounting employees.

How can business educators be sure students are gaining the knowledge and skills essential to allow them to be effective contributors to the workforce? Testing and participation in co-curricular student organizations are suggested responses to this question.

Testing is one component of the secondary accounting program that helps determine a student's level of accounting knowledge. Testing situations are varied to help maintain student interest. Tests may be given in the classroom or as part of a co-curricular student organization competitive event.

Virginia Future Business Leaders of America (FBLA) is a business education co-curricular student organization. FBLA has included competitive events as an essential element of its mission. The accounting tests used during the 1989 Virginia FBLA regional accounting competitive events are the focus of this study.

There are two purposes of student participation in FBLA competitive events testing. First, these

activities should build self-esteem and leadership abilities. Second, scores from student performance should demonstrate attainment of specific subject area competencies taught in the classroom (i.e., keyboarding, economics, business English, accounting). Heretofore, objective tests have been used for many of these regional-level events, because they are easy to administer and score. Objective tests are also used in FBLA state- and national-level accounting competitions.

Further, knowledge and skills learned on the job and in the classroom may be rated through competitive testing. Competitive events and the associated testing are said to strengthen the curriculum. They can also motivate students to learn and advisers to teach (Virginia Future Business Leaders of America State Handbook, 1988). However, the effort put forth by students and teachers may be worthless if the test items are found to be invalid.

What makes a test good? Reliability and validity are two test characteristics that are often used in similar contexts (Ahmann, 1981; Sales, 1987).

Sales (1987) defines test reliability as consistency of results and test validity as measuring

what is supposed to be measured. In this study, the reliability and validity of the Virginia FBLA competitive tests for Accounting I and Accounting II are assessed.

In summary, the most prevalent form of accounting instruction during earlier times was through serving a period of apprenticeship, or "on-the-job" training (Fess & Warren, 1984). Today, however, students learn accounting principles and applications in the high school classroom. Students are able to assess their progress by applying their knowledge through classroom and co-curricular student organization activities and various testing methods. The results from these activities and tests provide concrete evidence to help instructors ensure that accounting course offerings and instructional methods are producing knowledgeable and capable workers for business and industry.

#### **Need for This Study**

The regional tests for all FBLA competitive events are distributed by the State FBLA office located at the Virginia Department of Education. An attempt is made to ensure the generic nature of the tests, in that all

accounting concepts and principles are addressed (Thompson, personal communication, May, 1989).

FBLA competitive events tests serve to screen contestants through the various levels of competition, ensuring that only highly qualified, knowledgeable students progress to the state-level competitions. To obtain accurate measures of student performance, it is essential that the tests be reliable and valid, and that test items be of appropriate difficulty levels.

Obtaining a measure of the consistency of student responses to test items could help determine whether or not the tests are reliable. Additionally, measuring the content and face validity of the tests, as well as determining whether response bias exists, could ensure that the tests are valid representations of accounting concepts and principles which accurately measure student knowledge. Discrepancies in reliability and validity, as well as test item difficulty level, could point out the need for test item review and revision.

Because of the generic nature of tests designed for use during FBLA competitive events, it is important to determine whether participants are adversely affected by regionalized curriculum offerings (i.e., curricular

drift). Such regionalized curriculum offerings might stress only narrowly focused subject matter pertinent to a particular region and exclude topics not considered locally important. Restricted exposure such as this could adversely affect student performance during standardized testing situations, such as the regional-, state-, or national-level FBLA competitive events (Tattersall, 1983).

Therefore, consistency of student response to test items could help determine whether or not subject areas addressed by the test items of Virginia FBLA Accounting I and Accounting II tests generalize across the nine Virginia FBLA regions participating in this study. Discrepancies in score means might highlight the need for more standardized curriculum offerings throughout the Commonwealth of Virginia.

FBLA-PBL, Inc., and Virginia Department of Education leaders have expressed an interest in reviewing the regional-level competitive events tests. A study of this nature will help ensure that the tests are achieving the purpose for which they are intended: to reinforce and extend the basic classroom experience.

A review of the literature indicates a lack of studies addressing reliability and validity of student organization competitive event tests. Additionally, studies on the topic of this paper were not reported after 1975. Ryan's 1975 study considered the FBLA competitive events from a national rather than regional perspective.

Objective tests are an important part of the FBLA competitive events program. As noted above, the literature review reveals that no close examination of these tests at the regional level has been conducted to determine whether or not they represent valid and reliable measures of students' knowledge.

#### **Purpose of the Study and Research Questions**

The purpose of this study was to address the following four research questions:

1. Are the tests reliable indications of student performance?
2. Do the tests have content and face validity?  
Is there evidence of response bias?
3. Is the difficulty level of the test items appropriate?

4. Is curricular drift present as indicated by significant differences in student performance across the nine participating regions?

#### **Delimitations**

This study was delimited to only those subjects competing in the Virginia FBLA 1989 regional competitive events for Accounting I and Accounting II. Nine of the eleven regions provided a total of 233 subjects participating in the competitive events. The Accounting I event had 152 subjects. The Accounting II event had 81 subjects. The number of participating subjects in some regions was small, especially for the Accounting II event.

The tests for the FBLA regional competitive events are revised annually. However, even though the test items originate from a test bank, a test would not be identical from year to year. Therefore, the findings of this study could serve as useful data in preparing objective-type competitive events test for future years.

### Definition of Terms

The following terms are defined as they apply to this study:

Co-curricular activities are those student activities that are integral parts of the curriculum and contribute to the overall effectiveness of the educational program. FBLA is considered to be a co-curricular activity.

Competitive events refer to FBLA contests related to business which are conducted at regional, state, and national levels. The events addressed in this study are Accounting I and Accounting II.

Curricular drift is the possibility of students being exposed to regionalized curriculum offerings. Restricted exposure such as this could adversely affect student performance during standardized testing situations, such as the FBLA competitive events.

Extracurricular activities are student activities which are not integral parts of the existing curriculum. FBLA is not considered to be an extracurricular activity.

Future Business Leaders of America (FBLA) is a co-curricular student organization having as its primary

goal leadership training for high school business students.

Regionalized curriculum offerings are those which stress only narrowly focused subject matter pertinent to a particular region and excluding topics not considered locally important.

Test item difficulty is a factor of the percentage of persons answering an item correctly. Test items receiving between 30% and 70% are considered to be of an appropriate difficulty level (Allen & Yen, 1979; Christiansen, 1981). Items having fewer than 30% correct responses are considered to too difficult, and items having more than 70% correct responses are considered to be too easy.

Response bias occurs when test makers use one answer option as the correct choice for a larger percentage of the items than other options, thereby establishing the possibility for a test taker to recognize a pattern for correct choices.

Test reliability measures the degree to which consistent results are produced by a test (Christiansen, 1981; Miller, 1972; Sales, 1987). For

this study, reliability is measured by Kuder-Richardson's formula 20 (KR-20).

"KR-20 . . . reliability procedure . . . reflect[s] the extent to which the items within a test are highly correlated. If the items on a test are relatively homogeneous with regard to the characteristic being measured, you would expect high consistency in an individual's responses across items. . . . Homogeneous tests are assumed to measure a single trait or ability." (Weiner & Stewart, 1984, p. 63).

Christiansen (1981, p. 63) notes that "A common range of acceptable reliability coefficients is from .70 to .90+." Downie and Heath (1974) note that an internal consistency coefficient of 0.9 or above is considered an appropriate reliability indicator for individuals.

Test validity is the degree to which a test evaluates the knowledge, skill, or ability that it is expected to measure.

## CHAPTER 2

### REVIEW OF RELATED LITERATURE

This section includes a review of related and pertinent literature. In particular, the following topics are presented: vocational education's purposes; an historical perspective of Future Business Leaders of America-Phi Beta Lambda (FBLA-PBL), Inc.; the lack of timely research; an overview of existing research; test validity, reliability and usefulness; and response bias.

#### Purposes of Vocational Education

Several purposes have been attributed to vocational education. Miller (1985) provides a concise view:

1. Vocational education continually allows people to explore various work-world options.
2. It integrates academics and practical experiences so the students secure manual and academic skills needed to function effectively in desired careers.
3. Vocational education guidance services ensure adept, literate, and competent workers.

Vocational educators try to fulfill these purposes in two basic ways (a) curriculum offerings in various program areas (i.e., agriculture, business education, health occupations, home economics, marketing, technology education, trade and industry), and (b) co-curricular student organizations.

In 1988, Virginia had a total enrollment of 219,643 students in vocational education at the secondary level (Department of Planning and Budget, 1988). Eighty percent of that enrollment represents occupational areas. Business education and trade and industrial education had the highest enrollments of the seven program areas. Business education totaled 118,000 per period enrollment of students in 48 different courses. Of those enrolled per period, 12,449 were in accounting, and 344 were in advanced accounting (Department of Planning and Budget, 1988).

Jeffreys (1987) notes that the student activity which helps provide real-life experiences within the classroom that are meaningful and practical is participation in vocational youth organizations. These organizations are a vital part of the secondary school curriculum.

Vocational student organizations, viewed by some as "the heart and soul of vocational education. . . . (are) clearly one of . . . (the) most effective resources for dealing with the challenges facing. . . ." (Miller, 1985, p. 79) vocational and business educators. Student organizations serve to promote the development of aggressive, competent leadership; nurture self-esteem and individualism. They stimulate motivation toward reaching educational and personal goals. They also foster an individual competitive spirit, as well as a sense of fair play and team interaction (McMillan, 1972; Miller, 1985). Vocational student organizations are co-curricular because they function as integral components of the classroom curriculum.

A misconception persists that co-curricular and extracurricular activities are synonymous. Co-curricular student organization activities help to round out the curriculum. Through these activities, the student is provided more opportunities to apply the knowledge gained through classroom experiences (Scheele, 1983).

While extracurricular activities promote student growth in many ways (Frederick, 1965; Jones, 1935), these activities are considered organized school activities outside the classroom (Jones, 1935). Extracurricular activities do not overtly contribute to the curriculum. Rather, such activities contribute more to the students' physical and social development and less to academic excellence (Holland & Andre, 1987).

Because co-curricular activities play an important role in a student's educational growth, they are highly respected. They have been called the American education system's "invisible curriculum" (Scheele, 1983). "Nationally, about 1.5 million students are members of the eight secondary-level vocational youth organizations" (Jeffreys & Camp, 1988, pp. 53-54). The focus of this study, Future Business Leaders of America (FBLA), the student organization for business students, is one such organization.

#### **Historical Perspective of FBLA**

"FBLA-PBL, Inc., is headquartered in Reston, Virginia. It is a national business organization

designed to train youth at secondary and post-secondary levels in leadership. Members compete on a national scale for top honors in areas of business training" (Ryan, 1975, p. 7). As one of the major vocational student organizations in America, FBLA focuses on business careers; and the development of those traits believed desirable by the business community are emphasized in its programs (Miller, 1988). This study focuses specifically on Virginia FBLA.

Virginia FBLA began in 1942 when Spotsylvania High School chartered a local chapter. In 1950 Virginia received a charter as the eleventh State Chapter, and became a part of the FBLA-PBL national structure (Virginia Future Business Leaders of America State Handbook, 1988).

One of the main goals of business education and FBLA is to prepare students for the world of work. Student youth organization activities and competitive events help strengthen this preparation. Sybouts and Krepel (1984) concluded that the need for youths to prove themselves can be partially fulfilled through participation in a secondary school co-curricular program.

Results from competitive events serve to warn educators and businesses of deficiencies in the curriculum. Additionally, these results predict possible student difficulty in generalizing the in-school educational experience to the work place.

#### **Future Business Leaders of America**

A few masters' theses and doctoral dissertations have been written on the general subject of FBLA. However, their focus is on areas other than that addressed by this study.

For instance, D'Abrosca (1978) studied the relationship of FBLA membership to leadership development. The purpose of the research was to determine whether former FBLA competitive event winners and noncompeting FBLA members were realizing their leadership potential to a greater degree than business education students who were not FBLA members. The study was conducted on FBLA students in Pennsylvania who were FBLA members at some time during the years 1970 to 1976. The study found that the "FBLA competitive event winners are reflecting much credit on FBLA and possess a higher degree of 'leadership

characteristics,' . . . as compared to business education students who were not members of FBLA" (D'Abrosca, 1978).

Ryan (1975) conducted a study to determine if the national FBLA team and individual events effectively measure the competency areas necessary for entry-level small business office occupations positions. The study also looked at possible support for changing the testing program. The research revealed a high priority for adding new areas of interest and technology to the events. The findings indicated a discrepancy between what education is producing and what business expects, as well as what each side is willing to do to resolve the problem (Ryan, 1975).

In a 1988 study of 187 small Arkansas businesses, Miller investigated the impact of participation in FBLA on future job performance. Increased salaries and promotions in rank were evident for those employees demonstrating traits refined by FBLA participation.

A literature review revealed that research on vocational student organizations (and FBLA in particular) competitive events test evaluation is scarce. The search of literature available in Virginia

Polytechnic Institute and State University's Carol E. Newman Library included review of educational journals and periodicals, the Business Education Index, and ERIC Document Retrieval Service.

The national headquarters for FBLA-PBL, Inc., in Reston, Virginia, and the office of the Executive Secretary for FBLA at the Virginia Department of Education were contacted in the search for studies on this topic. Those contacts provided verification of the lack of relevant studies.

### **Tests**

Educators consider testing as one effective way to determine a student's knowledge (Wolansky, 1985). Tests are used not only in educational settings but also in many other facets of society. Even children in day care are tested to help determine their readiness to advance to public school. These children will continue to be exposed to testing in some form throughout their lifetimes.

### **Types of Tests**

Tests exist in a variety of forms. They can be created to measure psychological attributes, affective

skill levels, and knowledge gained. Educational tests can be teacher-made or standardized. Standardized tests are usually objective in design. They are made up of multiple-choice, true-false, fill-in-the-blank, or matching questions (Knapp, 1971; Sax, 1974).

Other types of tests fall into the essay, short-answer, and practical application (hands-on) varieties. Tests have many uses. Classroom tests provide both formative and summative information to the teacher as a measure of a student's knowledge (Sales, 1987). Tests may also describe and make predictions about people (Weiner & Stewart, 1984).

Further, knowledge and skills learned on the job and in the classroom may be rated through competitive testing. Competitive events testing strengthens the curriculum. It motivates students to learn and advisers to teach (Virginia Future Business Leaders of America State Handbook, 1988). However, the effort put forth by students and teachers may be worthless if the test items are found to be invalid.

### Test Reliability

It is difficult to determine exactly the number of a satisfactory reliability coefficient, because reliability depends on the way a test is be used, as well as the test length (McCall, 1939; Mehrens & Lehmann, 1969). Additionally, sample homogeneity lowers the reliability coefficient obtained (Downie & Heath, 1974). "No hard and fast rule . . . says that any reliability has to be of a certain size before any test or measuring instrument can be useful" (Downie & Heath, 1974, p. 240). Christiansen (1981, p. 23) notes that "the common range of acceptable (internal consistency) reliability coefficients is from .70 to .90+." However, for achievement tests, an internal consistency coefficient of 0.9 or above is considered an appropriate reliability indicator for individuals (Cronbach, 1970; Downie & Heath, 1974; McCall, 1939, p. 58). Considering internal consistency of groups, Mehrens and Lehmann (1969) suggest that 0.65 is an adequate reliability coefficient.

No test is ever completely reliable (Magnusson, 1966; Mehrens & Lehmann, 1969). Problems related to the student, such as fatigue or motivation, can have an

adverse effect on reliability (Weiner & Stewart, 1984; Wolansky, 1985). Additionally, the length and difficulty of the test can cause problems (Cronbach, 1970; Mehrens & Lehmann, 1969; Sales, 1987). Another potential handicap to test reliability may be found in the objectivity and accuracy of the scoring method (Sales, 1987).

However, it is possible to control these problems and optimize reliability (Gronlund, 1985). Reliability must be maximized, because the consistency which makes validity possible is reliability (Gronlund, 1985).

### **Test Validity**

Test validity is described by Wiersma & Jurs (1985) as "the extent to which it measures what it is intended to measure." Validity serves as a critical gauge of the quality and usefulness of a test (Weiner & Stewart, 1984).

**Content validity.** Test validation "requires empirical evidence of the degree to which the results (scores) from the test accurately represent the ability, knowledge, or trait being assessed" (Weiner & Stewart, 1984). More simply stated, a test is valid if

it actually measures what it is supposed to measure (Christiansen, 1981; Ebel & Frisbie, 1986; Gronlund, 1985; Knapp, 1971; Miller, 1972; Roid & Haladyna, 1982; Sax, 1974; Weiner & Stewart, 1984; Wiersma & Jurs, 1985). If the test content includes those concepts which are being measured, then it may be considered valid.

**Face validity.** Also related to content validity, face validity is important. This characteristic can impact upon not only the examinee's perception of the value of the test, but also his or her motivation to perform (Weiner & Stewart, 1984). Face validity "is established when anyone (expert or test taker) examines the test and concludes that the test and its items appear, at face value, to measure what the test claims to measure" (Weiner & Stewart, 1984, p. 78).

**Response bias.** Even a test meeting all the standards mentioned heretofore (face and content validity and difficulty) may be adversely affected if the test makers failed to guard against response bias. Mertz (1980) indicates a test item is biased if each person does not have the same probability of getting

the item correct. This may result from many causes, one of which is item response bias.

Item response bias occurs when test makers use one option (i.e., D) as the correct choice for a larger percentage of the time. If no bias is present in a four-option multiple-choice test, the expected percentage for each choice selection (A, B, C, D) to be used as a correct response would be 25% (Clute & McGrail, 1989). This concern is often found with multiple-choice tests.

A study conducted by Clute and McGrail (1989) of eight test banks accompanying popular cost accounting textbooks found that all but one had considerable response bias. Three of the eight were found to have significant response bias at the .10 level of statistical significance.

Scheuneman (1985) conducted a study to view test bias from a racial perspective. Research indicated blacks and whites were differentially affected by item manipulations. Additionally, test-wiseness or item pattern cues were similar for both races. It was concluded that location for multiple-choice item correct choice and item manipulations affected the

performance of both white and black students. However, other uncontrolled factors were also present which could affect performance.

### Difficulty Level

The discriminating power of the correct answer is one often equated with test item validity (Gronlund, 1985). Proper item discrimination occurs when a large proportion of students correctly answering an item are the students who actually did well on the test as a whole (McMillan, Mundrake, & McGuire, in press).

Test items that are well-written distinguish between those who do and do not know the answer because of misperceptions, incomplete information, or misinterpretations. Students with differing achievement levels will be unable to properly distinguish among ambiguous answer choices (McMillan, Mundrake, & McGuire, in press).

The optimal difficulty index for items has been debated in the literature. Brown (1971, p. 89) and Ebel and Frisbie (1986) indicate that the median difficulty level for a test item should be established at 50% correct responses. They indicate that extremely

easy or extremely difficult test items fall respectively above or below that point. However, Allen and Yen (1979, p. 121) recommend that maximum information about differences among students provided by a test is derived when a range between 30% and 70% correct responses for item difficulty is used.

A study was conducted by McMillan, Mundrake, and McGuire (1989) to compare discrimination and difficulty statistics of teacher-made multiple-choice tests. They found that while some of the multiple-choice tests examined met or exceeded the minimum difficulty level (a mean of 50%) recommended by Ebel and Frisbie, most of the tests "were much easier and less discriminating than testing scholars posit as ideal. As a result student scores on these tests may not accurately reflect what students learned" (p. 180).

The level at which test item difficulty can be determined depends upon the type of test and its intended use Wolansky (1985). Wolansky notes "the choice of appropriate test item difficulty will depend on the intended use of the test and test items selected. For example, in a true-false item where guessing is relatively higher than in a four-option

multiple choice item, the optimum difficulty level should be set at 60% or slightly higher" (p. 68).

### **Curricular Drift**

Another possible problem related to test item difficulty was noted by Tattersall (1983). Curriculum cohesiveness or drift and curricular changes could have an effect on the difficulty level of a test item for students from differing areas of the state. Thus, student scores would not be an adequate measure of their knowledge of the topic addressed.

### **Summary**

Vocational education provides unique educational opportunities by integrating academics and practical experiences. Co-curricular student organizations, such as FBLA, help to accomplish this task. The review of literature revealed limited research addressing the specific topic of this study, FBLA competitive accounting events. Information of use was, however, gathered about tests in general and components of test reliability, test validity, and test item difficulty. The literature review provided the researcher with

background information from which to proceed with the study.

## CHAPTER 3

### RESEARCH METHODOLOGY

The purpose of this study was to determine if the accounting tests used during the 1989 Virginia FBLA regional competitive events were valid measures of students' knowledge. Four specific research questions were answered:

1. Are the tests reliable indications of student performance?

2. Do the tests have content and face validity?  
Is there evidence of response bias?

3. Is the difficulty level of the test items appropriate?

4. Is curricular drift present as indicated by significant differences in student performance across the nine participating regions?

A description of the research methodology used to answer these questions is organized according to the following topics: preliminary investigation and planning, general research methodology and design, and specific research methodology.

### **Preliminary Investigation and Planning**

To determine the need for this study, the researcher made telephone inquiries concerning previous or current research in the area of FBLA competitive events testing. The Executive Secretary for Virginia FBLA at the Virginia Department of Education in Richmond, Virginia, and the Chief Executive Officer of FBLA-PBL, Inc., in Reston, Virginia, were contacted. Both noted the lack of and need for a study of this kind.

### **General Research Methodology and Design**

Three areas were addressed in the selection of the specific area of concentration for this study. First, the level at which the study was to be conducted was determined. Second, the event type (i.e., chapter, team, or individual) was chosen. Third, the events to be studied were selected.

FBLA competitive events "are selected for two main purposes: (1) To promote desirable local chapter activities, and (2) to capitalize on the interests and talents of the majority of the chapter membership" (Virginia Future Business Leaders of America State

Handbook, 1988, p. 73). These events are held at three levels: regional, state, and national. The number of participants decreases at each level, leaving only a few to participate in the national competition. Therefore, in an effort to maximize the number of subjects, the regional-level events were chosen for this study. Once the competitor level was chosen, it was necessary to select an event.

Those events in which the individual is required to perform in several modes (i.e., personal interview, objective test, and oral examinations) were eliminated. Competitions involving more than one mode were found to be too subjective to produce quantifiable results.

Therefore, only objective tests were chosen. Again, to maximize the number of subjects, the category of individual events was selected. This category contains 26 different events for individual competition, of which 17 are objective, written examinations. Table 1 lists the 17 objective examination events. Once the event category was selected, the particular subject area was considered.

**Table 1****FBLA Individual Competitive Events**

---

Accounting I	Information Processing
Accounting II	Concepts
Business Calculations	Introduction to Business
Business English	Keyboarding Applications
Business Law	Keyboarding Applications
Business Math	Advanced
Computer Applications for Business	Machine Transcription
Computer Concepts	Office Procedures
Economics	Shorthand I
	Shorthand II

---

### **Specific Research Procedures**

Six specific research procedures were followed for this study. First, characteristics of subjects selected were determined. Second, copies of tests were obtained. Third, completed answer sheets were acquired. Fourth, a coding system was developed. Fifth, the score sheets were prepared for analyses. Sixth, data analyses were performed.

### **Characteristics of Subjects Selected**

Subjects selected for this study were secondary-level business students. All were members of various Virginia FBLA chapters from the nine participating regions.

The Virginia Future Business Leaders of America State Handbook (1988) outlines rules associated with the competitive events. One such rule establishes limitations on the amount of high school accounting instruction required or allowed for participants prior to the competition. Accounting I contestants were limited to no more than one year of accounting instruction before the event. Accounting II subjects were required to have more than one year (Virginia

Future Business Leaders of America State Handbook,  
1988).

**Obtaining Copies of the Accounting Tests**

The accounting tests used in the regional events originate from the National Headquarters of FBLA-PBL, Inc. An explanation of the manner in which the tests are developed and flow through the different competitive levels is warranted.

Dr. Edward Miller, Chief Executive Officer of FBLA-PBL, Inc. (personal communication, November 6, 1989), provided the following information about the origin of the tests used during FBLA competitions. Ms. Sara Lowe Thompson, Executive Secretary for Virginia FBLA, (personal communication, November 6, 1989) provided like information.

The FBLA National Awards Program Committee is responsible for devising tests used in the competitive events. This committee is made up of two educators (one secondary and one postsecondary) from each of the five national FBLA regions. The committee contracts with individuals to compile the test items. In order to enhance objectivity, an effort is made to use

authors not connected with FBLA. Once the tests are written, they are used during the National competitive events for that particular year (e.g., 1987). The next year, those same tests are then forwarded to the state Executive Secretary for FBLA, where they are reviewed, revised, and used for state competitive events (e.g., 1988). The year following their use in the state-level competitions, the tests are forwarded (after considerable review and revision) to the regional directors to be used in the regional-level competitions. (e.g., 1989).

Copies of the tests and scoring keys used for the Accounting I (see Appendix A) and Accounting II (see Appendix B) 1989 regional-level competitions were obtained from the Virginia FBLA Executive Secretary. Both tests under study were objective tests.

Differences were noted not only in the choice of items, but also in the test construction. The Accounting I test had 60 questions. The first 20 questions were true-false items, and the remaining 40 were four-option, multiple-choice items. The Accounting II test consisted solely of 50 four-option, multiple-choice questions.

Both tests had a cover sheet listing the test number, the test level (i.e., regional), the test title, and five instructions which explained procedures specific to actually taking the test. Another similarity between the two tests was noted. Both tests had a separate sheet listing "Cross-Referenced Terms."

#### Obtaining Completed Answer Sheets

The Virginia FBLA competitive events are structured in a three-tiered, incrementing fashion. The first competitions begin at the regional level with a large contingent of participants. Only the regional, first- and second-place winners progress to the state-level competitions. Therefore, the number of participants is decreased. This elimination process continues until a select few advance to the national-level contests.

In data analysis, the sample size directly affects the confidence level of the findings. Therefore, in order to insure confidence in the findings of this study, tests taken by students who competed in the Accounting I and Accounting II events during the Virginia FBLA regional spring competitions held during March and April of 1989 were selected for analysis.

At the Virginia FBLA Executive Board meeting in January, 1989, the eleven regional directors were requested to assist with this study. They were asked to forward all completed test score sheets to this researcher immediately after their respective contest dates.

Follow-up phone requests were made to those directors whose response sheets were not received by June, 1989. Of the 11 regions, 9 forwarded the materials and became participants in the study. Once the completed score sheets were received, a method to organize and keep track of them was devised.

#### Developing a Coding System

Appendix C shows a sample coded answer sheet. To provide the researcher information, each answer sheet within a region was numbered in sequence, beginning with 001. A number from one through nine representing the specific region was also assigned. Additionally, the test (i.e., Accounting I or Accounting II) was coded by the numbers 1 and 2 respectively. For example, if the number 7 represented Germanna Region, then the third Accounting I score sheet from that

region would bear the code 0030071. Likewise, the twenty-fifth Accounting II score sheet from that region would be coded 0250072. Additionally, to assist in the computerized data analysis, the letters "A" and "B" were assigned to Accounting I and Accounting II answer sheets respectively and entered in the box labeled "Test Form."

#### Preparing the Score Sheets for Analysis

No standardized score sheet for all regions existed. It was necessary to transfer the responses from each score sheet received (n = 152 for Accounting I, n = 81 for Accounting II). In all, 233 score sheets, a total of 13,171 item responses, were transferred to machine-readable forms to be used for item analysis. Nine thousand one hundred twenty item transfers were for Accounting I responses, and 4,050 item transfers were for Accounting II responses. Two audits were conducted to ensure accurate transfer of the information.

#### Data Analysis

The problem of this study was to determine the reliability, validity, and item difficulty level of the

Accounting I and Accounting II tests used during the 1989 Virginia FBLA regional competitive events, as well as whether curricular drift was indicated by student performance on these tests. The analyses used to answer the four research questions addressed follow.

Question one about test reliability was answered by applying the Kuder-Richardson formula 20 (KR-20) to determine internal consistency. Because the Accounting I test contained some true-false questions, the dichotomy of right versus wrong answers was applied for all items on both tests through KR-20.

"KR-20 . . . reliability procedure . . . reflect[s] the extent to which the items within a test are highly correlated. If the items on a test are relatively homogeneous with regard to the characteristic being measured, you would expect high consistency in an individual's responses across items. . . . Homogeneous tests are assumed to measure a single trait or ability." (Weiner & Stewart, 1984, p. 63).

Christiansen (1981, p. 23) notes that "A common range of acceptable reliability coefficients is from .70 to .90+."

Question number two concerning validity was addressed in three ways. First, a review of accounting textbooks (Swensen, Ross, & Hanson, 1987; Weaver, Brower, Smiley, & Rose, 1988) currently adopted for use in Virginia schools was conducted to determine content validity. As these textbooks have been approved by the various school divisions, they are assumed, for the purposes of this study, to be valid representations of the general accounting concepts and principles with which students should be familiar.

A similar review was made of the accounting competency guides listed in the Business Education Suggested Course Competencies and Performance Objectives issued by the Virginia Department of Education. Accounting I and Accounting II test items were then critiqued to determine if all accounting concepts and principles addressed in the textbooks and competency guides were represented.

From these textbook and competency guide reviews, a consolidated list of accounting concepts and principles was developed (see Appendix F). The Accounting I and Accounting II test items were then compared with the consolidated list to determine whether all accounting

concepts and principles were addressed. As a check on the accuracy of the first content comparisons, the test items were compared three more times by the business educators listed in Appendix G.

Secondly, face validity of the tests was determined. Both tests were reviewed to determine if the titles and individual test items addressed the topic of accounting.

The third approach to research question two concerning test validity was to determine the presence of response bias. Correct-item choice assignments for each of the four multiple-choice options were counted, and percentages of correct-answer assignments were calculated. Additionally, chi-square comparisons were performed. These procedures were necessary to determine the presence of placement bias for correct responses.

Research question three concerning test item difficulty level for both tests was explored through item analysis. Results of the analysis provided information as to whether or not individual test items fell within or outside the acceptable range for

percentage for correct responses, 30% to 70% (Allen & Yen, 1979; Christiansen, 1981).

Research question four considering curricular drift was answered by comparing group response differences across regions. The procedure used to obtain this information was a one-way analysis of variance (ANOVA).

**CHAPTER 4**  
**FINDINGS OF THE STUDY**

The purpose of this study was to determine if the tests used during the 1989 Virginia FBLA regional accounting events were reliable, valid, and of appropriate difficulty levels, and whether the presence of curricular drift was present across the nine participating regions. Specifically, four questions were answered by this study. Since two tests were analyzed (Accounting I and Accounting II), findings for each will be listed separately under each area of concern.

**Question One**

The first question is: Are the tests reliable indications of student performance?

**Accounting I**

One hundred fifty-two students took the Accounting I test. Scores ranged from 25 to 57 for the 60-item test. The average number of items correct was 43.7; the standard error was 3.16. This instrument

revealed a KR-20 reliability estimate of .81.

Table 2 indicates total scores by regions for Accounting I. The mean number right for all examinees was 43.70. The mean number of correct responses ranged from 42.00 to 47.10.

### Accounting II

Eighty-one students took the Accounting II test. Scores ranged from 25 to 57 for the 50-item test. The average number correct was 26.1; the standard error was 3.05.

The Kuder-Richardson formula 20 procedure was applied to this instrument to determine internal consistency. The results of these procedures revealed a reliability estimate of .78.

Table 3 lists total scores by regions for Accounting II. The mean number correct for all examinees was 26.10. The mean number answered correctly throughout the nine participating regions ranged from 24.14 to 28.38.

**Table 2****Mean Scores by Regions for Accounting I**

Region	Number of Examinees	Mean no. right	Standard dev. of no. right
1	21	45.19	6.123
2	17	43.88	6.773
3	14	42.00	7.141
4	20	47.10	5.881
5	14	42.64	7.907
6	18	43.00	7.371
7	19	42.37	7.080
8	12	42.25	5.818
9	17	43.24	6.394
All Regions	152	43.70	6.923

**Table 3****Mean Scores by Regions for Accounting II**

---

Region	Number of examinees	Mean no. right	Standard dev. of no. right
1	7	24.14	5.383
2	12	26.92	6.198
3	11	24.18	6.873
4	13	28.38	6.355
5	7	26.00	6.698
6	4	26.00	4.583
7	6	28.17	5.786
8	7	26.00	7.270
9	14	25.00	7.241
All Regions	81	26.10	6.664

---

### Question Two

The second research question is: Do the tests have content and face validity? Is there evidence of response bias?

#### Accounting I

A review of textbooks currently adopted by school divisions across the nine participating regions, as well as suggested competencies issued by the Virginia Department of Education, revealed the general accounting concepts and principles which should be addressed by the tests. A listing of these combined concepts and principles is presented in Appendix F.

All 60 items on the Accounting I test addressed the accounting concepts and principles listed in Appendix F. Automated accounting was not specifically addressed on the test. However, the test items did address basic accounting concepts and principles which are integral to automated accounting procedures (see Table 4). While all principles and concepts, except automated accounting, were covered, a majority of the test items addressed only 3 of the 16 principles and concepts.

Table 4

Comparison of Test Items With Accounting Principles and Concepts (Accounting I)

ITEM	Concepts and Principles																				
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
1	X																				
2		X				X															
3						X	X														
4				X								X									
5						X															X
6																X					
7	X															X					
8																X					
9																	X				
10																					X
11																					X
12		X											X			X					X
13																X					X
14	X															X					X
15																X					
16																X					
17																X					
18																X					
19															X	X					
20																X					X
21							X														
22							X														
23							X														
24							X									X					
25							X														
26							X									X					
27							X	X													
28																			X		
29	X																				X
30																					X
31										X											
32																X					
33											X					X					
34																X				X	
35								X								X				X	
36																X					
37																X					
38									X												X
39																X					
40																X					
41								X													X
42																X					
43																	X				X
44																					X
45																					X
46																X					
47																X					
48											X					X					
49																X					X
50																X					
51						X	X									X					X
52									X							X					
53																X					
54														X		X					
55															X						
56															X						
57											X				X						
58															X						
59	X							X							X						X
60															X						X

- Key:
- |                                     |  |
|-------------------------------------|--|
| A--Accounting period cycle          | L--Going concern                         |
| B--Adequate disclosure              | M--Historical cost                       |
| C--Automated accounting             | N--Matching expenses & revenue           |
| D--Basis for recording assets       | O--Net cost of purchase                  |
| E--Business entity                  | P--Objective evidence (source documents) |
| F--Classifying assets & liabilities | Q--Prepaid expenses                      |
| G--Consistent reporting             | R--Realization of revenue                |
| H--Cost                             | S--Recording revenue                     |
| I--Cutoff date                      | T--Unit of measurement                   |
| J--Depreciation                     | U--Updating accounts                     |
| K--Expenses                         |  |

A review of the test title, Accounting I, indicated that it addresses the topic of the test. Additionally, all test items are consistent with the topic indicated by the test title, Accounting I.

Regarding a third component of validity, response bias, the following findings are noted. Of the 60 items on the Accounting I test, 50 were four-option, multiple-choice questions. If placement of correct answers were bias-free, each of the four options should be assigned as the correct choice 25% of the time (McArthur, 1981; Mentzer, 1982). The correct-option assignment percentages were: A, .20; B, .25; C, .20; and D, .35. There was a slight preference for option D as the correct choice.

Table 5 shows results of a chi-square comparison performed to determine whether this preference for option D is significant. The chi-square statistic derived from these calculations is 2.4. The critical value of chi-square at the .05 level with 3 degrees of freedom is 7.815 (Robson, 1973). No response bias was established for the multiple choice portion of the Accounting I test.

Table 5

Observed and Expected Frequencies of Item Options  
Assigned as Correct Choice for Accounting I

	O	E	(O-E)	(O-E) <sup>2</sup>	(O-E) <sup>2</sup> /E
A	8	10	-2	4	.4
B	10	10	0	0	.0
C	8	10	-2	4	.4
D	<u>14</u>	<u>10</u>	<u>4</u>	<u>16</u>	<u>1.6</u>
Totals		40	40		2.4

Chi-square = 2.4

Critical Value of chi-square

with 3 degrees of freedom

(Alpha = .05) = 7.815

## Accounting II

A review of textbooks currently adopted by school divisions across the nine participating regions, as well as suggested competencies issued by the Virginia Department of Education, revealed the general accounting concepts and principles which should be addressed by the test. A listing of these combined concepts and principles is presented in Appendix F.

All items on the Accounting II test addressed the accounting concepts and principles included in the textbooks reviewed, as well as the Virginia Department of Education suggested accounting competencies. Automated accounting was not specifically addressed on the test. However, the items did address basic accounting concepts and principles which include automated accounting procedures (see Table 6). It should be noted, however, that even though all concepts and principles were covered, a majority of the items addressed only five principles and concepts.

The title of the test, Accounting II, was representative of the subject matter addressed by the test. All test items are consistent with the topic indicated by the test title.

Table 6

Comparison of Test Items With Accounting Concepts and Principles (Accounting II)

ITEM	Concepts and Principles																				
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
1				X		X															
2								X													X
3		X										X							X		
4		X					X														
5							X									X					
6											X										
7						X															
8					X											X					
9															X	X					X
10							X								X						
11																			X	X	
12																			X	X	
13												X				X					
14	X																				
15										X			X								
16								X			X						X				
17											X					X					X
18											X										
19	X						X	X													X
20						X		X													X
21																					X
22																					X
23											X										X
24																					X
25																X					X
26	X																				X
27									X						X						
28														X							
29																			X	X	
30	X																				X
31																					X
32																			X		
33	X							X													
34	X							X													
35	X							X													
36	X							X													
37																X					
38																X					
39						X										X					
40												X				X					
41												X				X					
42												X				X					
43																					X
44																					X
45												X									
46											X										X
47						X			X						X						
48																					
49	X																		X		
50																					X

Key:

A--Accounting period cycle	L--Going concern
B--Adequate disclosure	M--Historical cost
C--Automated accounting	N--Matching expenses & revenue
D--Basis for recording assets	O--Net cost of purchase
E--Business entity	P--Objective evidence (source documents)
F--Classifying assets & liabilities	Q--Prepaid expenses
G--Consistent reporting	R--Realization of revenue
H--Cost	S--Recording revenue
I--Cutoff date	T--Unit of measurement
J--Depreciation	U--Updating accounts
K--Expenses	

Regarding a third component of validity, response bias, the following findings are noted. All 50 items on the Accounting II test were four-option, multiple-choice questions. If placement of correct answers were bias-free, each of the four options should appear as the correct choice 25% of the time (McArthur, 1981; Mentzer, 1982). The correct assignment percentages for each option were: A, .24; B, .26; C, .30; and D, .20. A slight preference for option C as the correct choice was found.

Table 7 presents results of a chi-square comparison performed to determine whether this preference for option C is significant. The chi-square statistic derived from these calculations is 1.04. The critical value of chi-square at the .05 level with 3 degrees of freedom is 7.815 (Robson, 1973). No response bias was established for the Accounting II test.

### **Question Three**

The third research question is: Is the difficulty level of the test items appropriate?

Table 7

Observed and Expected Frequencies of Item Options  
Assigned as Correct Choice for Accounting II

	O	E	(O-E)	(O-E) <sup>2</sup>	(O-E) <sup>2</sup> /E
A	12	12.5	-.5	.25	.02
B	13	12.5	.5	.25	.02
C	15	12.5	2.5	6.25	.50
D	<u>10</u>	<u>12.5</u>	<u>-2.5</u>	<u>6.25</u>	<u>.50</u>
Totals		50	50		1.04

Chi-square = 1.04

Critical Value of chi-square

with 3 degrees of freedom

(Alpha = .05) = 7.815

Accounting I

Nineteen items (32%) received between 30% to 70% correct responses (see Appendix D). Two items showed an indication of extreme discrimination difficulty in the correlation of total score with the percentage of correct responses. Items 16 and 43 both had only 29% correct responses, with discrimination correlation coefficients of -0.07 and -0.13 respectively, and were found to be the most difficult items. Conversely, 38 items (63%) were outside the acceptable range. Many exceeded 70% correct responses, several rising above 85%. Items 8, 18, and 48, received 97% correct responses.

Accounting I test items 1, 16, 43, and 45 received less than 30% correct responses. Items 5, 6, 8, 9, 10, 11, 13, 17, 18, 19, 20, 21, 24, 25, 26, 27, 28, 30, 34, 35, 37, 39, 40, 41, 44, 47, 48, 49, 50, 51, 52, 54, 55, 57, 58, 59, and 60 received more than 70% correct responses. Accounting I test items 2, 3, 4, 7, 12, 14, 15, 22, 23, 29, 31, 32, 33, 36, 38, 42, 46, 53, and 56 were found to have correct response between 30% and 70%

**Accounting II**

Thirty-two items (64%) fell between 30% to 70% correct responses (see Appendix E). Conversely, 18 items (36%) were outside the 30% to 70% range. Seven items (6, 17, 26, 36, 38, 44, and 50) received fewer than 30% correct responses. Conversely, ten items (9, 11, 13, 14, 19, 25, 40, 41, 42, and 45) exceeded 70% correct responses. Items 13 and 19 received the highest rate of correct responses, 86%.

**Question Four**

Research question four: Is curricular drift present as indicated by significant differences in student performance across the nine participating regions?

**Accounting I**

To compare student performance across the regions, an ANOVA at the .05 level of significance was conducted. As reported in Table 8, the independent variable was the 9 regions, which allowed 8 degrees of freedom (df). The dependent variable was the score. The critical value was 2.01, and the F ratio was 1.07. The F value is not significant. Small differences

**Table 8****Results of ANOVA Comparing Performance of Students in  
the Nine Regions for Accounting I**

---

Source	DF	Sum of squares	Mean square	F value	PR > F
Region	8	415.51	51.94	1.07	0.3891
Error	143	6956.57	48.65		
Total	151	7372.08			

---

found, if any, would have occurred by chance. Therefore, curricular drift is not indicated, since no differences in the performance of students across the 9 regions exists for the Accounting I test.

### Accounting II

To compare student performance across the regions, a one-way ANOVA at the .05 level of significance was conducted. As reported in Table 9, the independent variable was the 9 regions, which allowed 8 degrees of freedom (df). The dependent variable was the score. The critical value was 2.08, and the F ratio was .55. The F value is not significant. Any small differences found, if any, would have occurred by chance. Therefore, curricular drift is not indicated, since minimal, if any, difference in the performance of students across the 9 regions exists for the Accounting II test.

### **Summary**

Internal consistency of the tests was determined by obtaining KR-20 reliability coefficients of .81 for Accounting I and .78 for Accounting II.

**Table 9****Results of ANOVA Comparing Performance of Students in  
the Nine Regions for Accounting II**

---

Source	DF	Sum of squares	Mean square	F value	PR > F
Region	8	204.69	25.59	0.55	0.8126
Error	71	3286.11	46.28		
Total	79	3490.80			

---

Content analysis revealed that test items for both tests addressed concepts and principles included in textbooks adopted by Virginia school divisions and suggested accounting competencies issued by the Virginia Department of Education. Both the Accounting I and Accounting II tests were found to have face validity, as the titles and items were specifically pertinent to the test topic, accounting. However, while all concepts and principles except automated accounting were covered, the items were heavily concentrated on selected concepts and principles of accounting. For the Accounting I test, a majority of test items addressed only three concepts and principles. For the Accounting II test, a majority of test items addressed only five concepts and principles.

In regard to the question of response bias, slight preference for option D in the Accounting I test and option C in the Accounting II test was found. However, chi-square comparisons revealed that these preferences were not significant at the .05 confidence level.

Thirty-two percent of the Accounting I items and 64% of the Accounting II items fell between the

acceptable 30% to 70% range for correct responses. Many items for both tests were of an inappropriate difficulty level, the majority having correct response rates above 70%. (see pp. 54-55).

To examine curricular drift across regions, one-way ANOVAs were performed for both tests. Data obtained from these analyses disclosed no significant differences in student performance across the nine participating regions.

## CHAPTER 5

### SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This chapter summarizes the previous chapters. Recommendations and general inferences are provided.

#### Summary

##### Purpose of the Study and Research Questions

The purpose of this study was to resolve four areas of concern about the accounting tests used during the 1989 Virginia FBLA regional accounting competitive events. Four research questions were answered in this study:

1. Are tests reliable indications of student performance?
2. Do the tests have content and face validity. Is there evidence of response bias?
3. Is the difficulty level of the test items appropriate?
4. Is curricular drift present as indicated by significant differences in student performance across the nine participating regions?

### Instrumentation

Separate instruments were used for the Accounting I and Accounting II tests. Both tests were prepared by the FBLA National Awards Program Committee, under the authority of FBLA-PBL, Inc., national headquarters in Reston, Virginia. The tests were used during the 1987 National FBLA competitive events and then forwarded to the Virginia Executive Secretary for FBLA in Richmond, Virginia.

The FBLA Executive Secretary and a panel of experts reviewed and revised the tests for use in the 1988 Virginia FBLA state competitive events. The tests were once again revised and then distributed to each regional director to be used for the regional-level 1989 competitive events.

The Accounting I test (See Appendix A) consisted of 60 questions, 20 true-false and 40 four-option, multiple-choice. Appendix B shows the Accounting II test, which had 50 four-option, multiple-choice questions.

### Subjects

Secondary-level high school business students participated in this study. All subjects were members of Virginia FBLA chapters across the state.

Specific requirements relative to the amount of accounting instruction received prior to taking the test were imposed upon the subjects as outlined in the Virginia Future Business Leaders of America Handbook (1988). For the Accounting I test, subjects were limited to no more than one year of high school accounting instruction. Subjects taking the Accounting II test were required to have received more than one year of accounting instruction (Virginia Future Business Leaders of America Handbook, 1988).

Nine of the 11 Virginia FBLA regions participated in this study. The numbers of subjects taking the tests ranged from as few as 12 in region 8 to as many as 21 in region 1 for the Accounting I test, making a total of 152 subjects. The Accounting II test had fewer subjects. Numbers ranged from 4 in region 6 to 14 in region 9, making a total of 81 subjects.

### Data Analyses

Several methods of analysis were used to obtain results presented in this study. Internal consistency of the tests was determined through a reliability estimates obtained by applying KR-20, thereby answering research question one. Question two findings were supported through content analysis, review of the instrument titles and items to discern face validity, and by counting and determining percentages for the options assigned as correct answers, as well as chi-square comparisons. Question three was answered through item analysis. Question four was resolved through results of one-way ANOVAs, using a .05 level of significance.

### Findings of the Study

Reliability estimates (KR-20) of .81 for Accounting I and .78 for Accounting II were noted. These are low-positive indicators that the test items are reliable, since they fall within the range of acceptable reliability coefficients for group measures, .70 to .90+ (Christiansen, 1981, p. 23). However, the tests do not meet .90 or above (Downie & Heath, 1974,

p. 240) level considered appropriate for individual reliability.

Concepts and principles delineated in textbooks adopted by school boards in the nine participating regions, as well as those suggested competencies issued by the Virginia State Department of Education, were addressed in both the Accounting I and Accounting II tests. However, even though a majority of test items concentrated on only three concepts and principles for the Accounting I test and five concepts and principles for the Accounting II test, the tests were found to have content validity.

All test items, as well as the titles, for both the Accounting I and Accounting II tests addressed concepts and principles of accounting, the topic of concern (Ahmann & Clock, 1981; Christiansen, 1981; Ebel & Frisbie, 1986; Gronlund, 1985; Knapp, 1971; Miller, 1972). Therefore, the tests were found to exhibit face validity.

Both tests were found, through chi-square comparison, to exhibit no significant response bias. The homogeneity of scores across the nine participating regions would seem to reinforce this observation.

In the Accounting I test, option D was used most often as the correct choice. In the Accounting II test, option C was assigned as the right choice most often.

Thirty-two percent of the Accounting I items and 64% of the Accounting II items fell between the acceptable range of 30% to 70% for correct responses. On this criterion, it was determined that many items for both tests (see Chapter 4, pp. 54-55) were of inappropriate difficulty levels, the majority having a correct response rate that exceeded 70%.

Only items six and nine on the Accounting I test correlated negatively to total responses. On the Accounting II test, items 17, 26, and 38 had negative correlations. Accounting II test items 44 and 50 did correlate positively, however, that correlation was extremely low.

The mean score across all nine regions was 43.70 for Accounting I and 26.10 for Accounting II. An indication of the absence of curricular drift, homogeneity of total score means among regions was found.

### Conclusions

From the results of data analyses performed and reported in this study, it can be concluded that the tests used during the 1989 Virginia FBLA accounting competitive events were not adequate representations of student performance. Reliability estimates of internal consistency for both tests were lower than is recommended for individual assessment (Cronbach, 1970). While the reliability estimates do meet acceptable standards for group performance, these tests were not designed to measure groups. Rather, they were designed as measures of individual achievement. Therefore, the tests are not adequate for their intended use, based on recommended reliability levels (Cronbach, 1970, Downie & Heath, 1974; McCall, 1939, p. 58).

Both tests addressed concepts and principles delineated in textbooks adopted by Virginia school divisions, as well as in the suggested competencies of the Virginia Department of Education. Therefore, content validity can be assumed. However, a majority of test items were heavily concentrated on only three concepts and principles for the Accounting I test and five concepts and principles for the Accounting II

test. Thus, revisions of the tests should include items more evenly distributed among the concepts and principles.

The titles and items of both tests address the topic of concern, accounting. Therefore, face validity can be assumed.

No evidence of significant response bias was discovered through statistical analysis. These tests were short, 60 and 50 items for Accounting I and Accounting II respectively. Therefore, it is unlikely that a pattern of C or D as the correct choice would be recognized by examinees. However, on tests having a large number of items, it might be possible for students to recognize this pattern (McArthur, 1981; Mentzer, 1982; Roid & Haladyna, 1982; Scheuneman, 1985).

While it is possible for a test to be reliable without possessing the characteristic of validity, a test cannot be valid unless it is also reliable (Christiansen, 1983; Sax, 1974). Therefore, even though the tests were found to have content and face validity, and no indication of response bias was noted,

the fact that the tests were not reliable indicates that they cannot be established as valid.

Another distinct cause for concern was noted. Many test items appeared to be at an inappropriate difficulty level for the intended subjects. Forty-one items (68%) on the Accounting I test and sixteen items (32%) on the Accounting II test were identified by item analysis as having response rates that were below 30% or above 70%.

When items are too easy, poor discrimination occurs, thus, causing lowered reliability coefficients (Guilford, 1965). To improve the reliability of test items, it is necessary to increase the difficulty level of items receiving above 70% correct responses. Specifically, 37 Accounting I and 10 Accounting II test items fell above the 70% range and are too easy. Therefore, it can be concluded that the difficulty level of the test items adversely affected the reliability coefficients obtained.

#### **Recommendations**

The following recommendations are made based upon the findings of this study:

1. The following test items were found to have response rates above 70% and, thus, to be too easy. They should be revised to a higher difficulty level. They are: Accounting I items 5, 6, 8, 9, 10, 11, 13, 17, 18, 19, 20, 21, 24, 25, 26, 27, 28, 30, 34, 35, 37, 39, 40, 41, 44, 47, 48, 49, 50, 51, 52, 54, 55, 57, 58, 59, and 60; and Accounting II items 9, 11, 13, 14, 19, 25, 40, 41, 42, and 45. Such a review would ensure that each item discriminates appropriately between those who have the knowledge and those who do not.

2. The following test items were found to have a response rate below 30% and, thus, to be too difficult. They should be revised to a lower difficulty level. They are: Accounting I test items 1, 16, 43, and 45; Accounting II test items 6, 17, 26, 36, 38, 44, and 50.

3. Writers of future tests for all FBLA competitive events should take care to distribute answers equally among the item response choices.

4. In particular, items six and nine from Accounting I and items 17, 26, and 38 from Accounting II should be revised or discarded.

5. Items 44 and 50 on the Accounting II test should be examined and rewritten. An adjustment in

either the stem or choices may clarify the questions, thus allowing subjects to discriminate more effectively in selecting the answer.

6. All items not falling within the 30% to 70% correct response range, as indicated in Appendices D and E, should be carefully reviewed before being included on future tests.

7. Future accounting tests for FBLA competitive events should specifically address automated accounting procedures, as well as have items more evenly distributed among the concepts and principles taught in accounting.

#### **Suggestion for Future Research**

Tests that are reliable, valid, and at an appropriate difficulty level will fulfill their intended purpose. They will reinforce the regular curriculum by encouraging students to learn and teachers to teach in preparation for the competition. They will serve as indicators of subject matter strength and weakness for both student and teacher.

Accounting I and Accounting II are only 2 of the 26 events in which students compete by taking objective

tests during the Virginia FBLA competitive events.  
Therefore, it is suggested that all objective tests  
used for FBLA competitive events be closely evaluated.

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**APPENDIX A**

**Accounting I Test**

REGIONAL  
ACCOUNTING I

1. Complete the information requested on the answer sheet. PRINT your name on the first line following the word NAME; following the word SCHOOL, write the name of your school; on the EVENT line, write the name of the event--Accounting I. The TEST NO. is in the upper right hand corner of this test.

DO NOT OPEN THE TEST UNTIL GIVEN PERMISSION TO DO SO.

2. All answers will be recorded on the answer sheet. Do not write on the test booklet at any time, and do not check items there.
3. Read each question carefully before answering. When you have decided which answer is correct, find the space on the answer sheet following the number of the problem and with a pencil blacken the entire space in the proper column. Do not make any other pencil marks on the answer sheet. If you change your mind, erase your first answer completely.
4. Be certain you have a No. 2 pencil with eraser.
5. You are allowed 50 minutes for the test. You will be given a starting signal and then a warning after 45 minutes have elapsed.

## REGIONAL/STATE ACCOUNTING EVENTS

## Cross-Referenced Terms

Since accounting terminology varies with textbook publishers, the following list of terms is provided:

Capital Statement	is the same as Statement of Owner's Equity.
Capital	is the same as Owner's Equity or Proprietorship.
Income Summary	is the same as Revenue & Expense Summary or Income & Expense Summary.
Income	is the same as Revenue.
Income Statement	is the same as Profit and (or) Loss Statement.
Liability	is the same as Creditor's Equity.
Outstanding Deposit	is the same as Deposit in Transit.
Contra Account	is the same as Offsetting Account or Minus Account.
Plant Asset Account	is the same as Plant and Equipment Account.
Allowance for Un- collectible Accounts	is the same as Allowance for Doubtful Accounts or Allowance for Bad Debts.

## FBLA ACCOUNTING I

DIRECTIONS: If the statement is true, mark A on the answer sheet; if the statement is false, mark B.

1. An income statement reports the financial progress of a business for a fiscal period.
2. The amount of sales tax collected is a liability.
3. The total price of goods sold plus the sales tax collected is recorded as a credit to sales.
4. Each time a business activity occurs, amounts are changed in the capital account.
5. When cash is received from the sale of equipment, the transaction causes an increase in equipment.
6. If the trial balance columns on the worksheet do not balance, and the difference between the totals is \$1.00, then the error is most often in addition.
7. Income Summary is a revenue account.
8. The accounts receivable ledger contains an account for each charge customer.
9. Amount paid in advance for supplies to be used later or for services to be received is prepaid expense.
10. After the journal entry to close the cost and expense accounts has been posted, the purchases account has a credit balance.
11. After the adjusting entry for ending merchandise inventory has been posted, the merchandise inventory account has a zero balance.
12. The debit balance of the equipment account always represents the original cost of the equipment.
13. An entry that combines two or more debits or two or more credits is known as a reversing entry.
14. Information needed for adjusting entries is obtained from the worksheet's trial balance columns.
15. The error of recording a transaction twice is routinely detected by taking a trial balance.
16. An income statement lists a company's changes in net worth.
17. The amount owed to each individual creditor is listed on the schedule of accounts payable.

18. An income statement should report the same net income as is shown on the worksheet.
19. Purchases Discount is an example of a contra (offsetting) account.
20. Transactions are recorded in the journal in chronological order.

DIRECTIONS: Select the answer that most correctly completes the statement and blacken the corresponding letter on the answer sheet.

21. Which of the following is NOT a proper form of the fundamental accounting equation?
  - A.  $\text{Assets} - \text{Liabilities} = \text{Owner's Equity}$
  - B.  $\text{Assets} - \text{Owner's Equity} = \text{Liabilities}$
  - C.  $\text{Assets} = \text{Liabilities} + \text{Owner's Equity}$
  - D.  $\text{Assets} + \text{Liabilities} = \text{Owner's Equity}$
22. Payment of a liability will
  - A. decrease total assets and decrease total liabilities
  - B. decrease total liabilities and decrease total owner's equity
  - C. decrease total assets and increase total liabilities
  - D. have no effect on total assets and owner's equity.
23. The purchase of an asset for cash will
  - A. increase total assets and increase total liabilities
  - B. increase total assets and increase total owner's equity
  - C. increase total assets and decrease total liabilities
  - D. have no effect on total assets or total liabilities
24. Which of the following would NOT appear on the balance sheet?
  - A. L. Smith, Capital
  - B. Accounts Receivable
  - C. Insurance Expense
  - D. Supplies
25. Debits signify increases in
  - A. expenses
  - B. owner's equity
  - C. revenue
  - D. all of these
26. The first step in the analytical phase of accounting is to
  - A. determine whether there is an increase or decrease in the accounts
  - B. formulate the entry as a debit to one account and a credit to another account
  - C. think of the increase side and the decrease side of the accounts
  - D. ascertain which accounts are involved
27. Which of the following is NOT an asset account?
  - A. Prepaid Insurance
  - B. Supplies
  - C. Office Equipment
  - D. Sales

28. A payment of \$430 was received from a charge customer and recorded as \$340. The necessary correcting entry is
- A. debit Cash, \$90; credit Accounts Receivable, \$90
  - B. debit Accounts Receivable, \$90; credit Cash, \$90
  - C. debit Cash, \$90; credit Accounts Payable, \$90
  - D. debit Cash, \$90; credit Income from Services, \$90
29. If expenses are greater than revenue, the Income Summary account will be closed by a debit to
- A. Cash and a credit to Income Summary
  - B. Income Summary and a credit to Cash
  - C. Capital and a credit to Income Summary
  - D. Income Summary and a credit to Capital
30. The first step in the posting process is
- A. recording the journal page number in the ledger account
  - B. recording the date in the ledger account
  - C. recording the explanation in the journal
  - D. recording the ledger account number in the journal
31. Equipment costing \$6,000 has a life of five years and an estimated trade-in value of \$3,300. The amount of one month's depreciation is
- A. \$540
  - B. \$45
  - C. \$600
  - D. \$50
32. The following appeared in a statement of owner's equity: Owner's equity at end of year, \$62,000; owner's drawing during the year, \$16,000; owner's equity at beginning of year, \$60,000. Net income for the year amounts to
- A. \$18,000
  - B. \$14,000
  - C. \$22,000
  - D. \$29,000
33. A purchase of supplies on account should be recorded as
- A. a plus under supplies and a minus under cash
  - B. a plus under liabilities and a minus under supplies
  - C. a plus under supplies and a plus under liabilities
  - D. a plus under supplies and a minus under liabilities
34. Rayburn receives an annual salary of \$8,400 plus a 5 percent commission on all sales during the year in excess of \$140,000. Her sales for the year total \$216,000. Her total earnings amount to
- A. \$13,400
  - B. \$12,200
  - C. \$14,500
  - D. \$12,900

35. Bannister's employer pays time and a half for all hours worked in excess of 8 per day and double time for all hours worked on Sundays. Bannister's regular hourly rate is \$9 per hour. During the week, Bannister worked the following hours: Monday, 8; Tuesday, 8; Wednesday, 9; Thursday, 10; Friday, 8; Sunday, 6. Total gross wages are
- A. \$481.50
  - B. \$522.00
  - C. \$441.00
  - D. \$508.50
36. The amount to be paid within the discount period on a purchase of merchandise having a list price of \$1,000, subject to a trade discount of 40 percent with terms 2/10, n/30 is
- A. \$980
  - B. \$800
  - C. \$588
  - D. \$612
37. From the viewpoint of the buyer, a business form prepared by the seller that lists the items shipped, their cost, and the method of shipment is a
- A. purchase invoice
  - B. purchase order
  - C. purchase requisition
  - D. purchase allowance
38. If ending merchandise inventory is \$20,000, purchases are \$90,000, Purchases Discount is \$1,600, and beginning inventory is \$19,000, Cost of Merchandise Sold is
- A. \$92,000
  - B. \$90,400
  - C. \$86,400
  - D. \$88,400
39. An accounts receivable ledger is organized in
- A. numerical order
  - B. random order
  - C. alphabetical order
  - D. chronological order
40. A single summarizing account in the general ledger, representing all the accounts in a particular subsidiary ledger, is known as a
- A. summary account
  - B. special account
  - C. controlling account
  - D. response account
41. Merchandise purchased on account was accidentally placed in the supplies account. What would be the proper correcting entry?
- A. debit Accounts Payable; credit Purchases
  - B. debit Purchases; credit Accounts Payable
  - C. debit Purchases; credit Supplies
  - D. debit Supplies; credit Purchases

42. What is the most likely source of error if your trial balance is off by \$27, and you do not have an entry for that amount in the debit or credit column?
- an addition error
  - a transposition error
  - a missing amount from your ledger
  - incorrect recording of an amount from your journals
43. On January 1, a business prepaid three months' rent in the amount of \$900. What would be the adjusting entry for the end of February if the monthly premium is \$300?
- debit Prepaid Insurance, \$300; credit Insurance Expense, \$300
  - debit Prepaid Insurance, \$600; credit Insurance Expense, \$600
  - debit Insurance Expense, \$300; credit Prepaid Insurance, \$300
  - debit Insurance Expense, \$600; credit Prepaid Insurance, \$600
44. At the beginning of the year, the supplies inventory was \$860; at the end of the year, it was \$320. Which of the following shows the necessary entry to adjust supplies?
- debit Supplies, \$320; credit Supplies Expense, \$320
  - debit Supplies, \$540; credit Supplies Expense, \$540
  - debit Supplies Expense, \$320; credit Supplies, \$320
  - debit Supplies Expense, \$540; credit Supplies, \$540
45. Assume that a note for \$2,000 is payable in 45 days with 9% interest. What amount of interest is due?
- \$22.19
  - \$22.50
  - \$30.00
  - \$90.00
46. When reconciling a bank statement, outstanding checks should be
- added to the balance per bank statement
  - subtracted from the balance per bank statement
  - added to the depositor's checkbook balance
  - subtracted from the depositor's checkbook balance
47. What type of endorsement is illustrated below?

- blank
  - restrictive
  - special
  - qualified
48. The sequence of accounts in the ledger is
- assets, expenses, liabilities, owner's equity, revenue
  - revenue, expenses, assets, liabilities, owner's equity
  - assets, liabilities, owner's equity, revenue, expenses
  - expenses, assets, liabilities, owner's equity, revenue

49. The verification that the debits and credits in the ledger are equal is called the
- A. statement of owner's equity
  - B. chart of accounts
  - C. journal
  - D. trial balance
50. The balance sheet is a financial statement that shows
- A. changes in cash over a period of time
  - B. all transactions engaged in by a business
  - C. each change in the owner's investment over a period of time
  - D. the financial position of a business at a definite time
51. The owner of a business withdraws, \$1,450 in cash for personal use. The effect of the transaction on the accounting equation is
- A. a decrease in an asset; a decrease in owner's equity
  - B. a decrease in an asset; an increase in expenses
  - C. a decrease in an asset; a decrease in a liability
  - D. a decrease in an asset; an increase in an asset
52. The bank statement will NOT show
- A. the balance on deposit at the end of the month
  - B. the amounts of checks paid during the month
  - C. the amounts of deposits made during the month
  - D. outstanding checks at the end of the month
53. The flow of accounting data from the time a transaction occurs to its recording in the ledger is
- A. document, transaction, journal, ledger
  - B. transaction, document, journal, ledger
  - C. document, transaction, ledger, journal
  - D. transaction, journal, document, ledger
54. Which of the following is used to prove cash?
- A. beginning balance plus cash received minus purchases
  - B. assets minus liabilities plus sales
  - C. beginning balance plus cash debit minus cash credit
  - D. beginning balance plus assets minus liabilities
55. When preparing a post-closing trial balance, list
- A. all income and expense accounts
  - B. only those accounts that have balances
  - C. all the general ledger accounts
  - D. the accounts in alphabetical order
56. When transactions are batched processed, they are said to be processed
- A. as the transaction occurs
  - B. individually at predetermined times
  - C. in groups of like amounts
  - D. in groups of like transactions

57. A list of account titles and account numbers showing their arrangement in a ledger is a
- A. chart of accounts
  - B. trial balance
  - C. financial statement
  - D. schedule of accounts
58. Posting, as used in accounting, refers to the process of
- A. transferring account balances in the ledger to the balance sheet
  - B. transferring the information contained in the journal to the proper account classification in the ledger
  - C. recording economic events in the appropriate journal
  - D. moving account balances on the worksheet from the adjusted trial balance columns to the income statement and balance sheet columns
59. Which of the following accounts in a company's ledger will ordinarily appear in the post-closing trial balance?
- A. Depreciation Expense
  - B. Sales
  - C. Supplies Expense
  - D. Accounts Receivable
60. After the supplies adjusting entry has been posted, the supplies account balance represents the value of supplies
- A. inventory at the beginning of the fiscal period
  - B. bought during the fiscal period
  - C. used during the fiscal period
  - D. inventory at the end of the fiscal period

**APPENDIX B**

**Accounting II Test**

REGIONAL  
ACCOUNTING II

1. Complete the information requested on the answer sheet. PRINT your name on the first line following the word NAME; following the word SCHOOL, write the name of your school; on the EVENT line, write the name of the event--Accounting II. The TEST NO. is in the upper right hand corner of this test.

DO NOT OPEN THE TEST UNTIL GIVEN PERMISSION TO DO SO.

2. All answers will be recorded on the answer sheet. Do not write on the test booklet at any time, and do not check items there.
3. Read each question carefully before answering. When you have decided which answer is correct, find the space on the answer sheet following the number of the problem and with a pencil blacken the entire space in the proper column. Do not make any other pencil marks on the answer sheet. If you change your mind, erase your first answer completely.
4. Be certain you have a No. 2 pencil with eraser.
5. You are allowed 50 minutes for the test. You will be given a starting signal and then a warning after 45 minutes have elapsed.

## REGIONAL/STATE ACCOUNTING EVENTS

## Cross-Referenced Terms

Since accounting terminology varies with textbook publishers, the following list of terms is provided:

Capital Statement	is the same as Statement of Owner's Equity.
Capital	is the same as Owner's Equity or Proprietorship.
Income Summary	is the same as Revenue & Expense Summary or Income & Expense Summary.
Income	is the same as Revenue.
Income Statement	is the same as Profit and (or) Loss Statement.
Liability	is the same as Creditor's Equity.
Outstanding Deposit	is the same as Deposit in Transit.
Contra Account	is the same as Offsetting Account or Minus Account.
Plant Asset Account	is the same as Plant and Equipment Account.
Allowance for Un- collectible Accounts	is the same as Allowance for Doubtful Accounts or Allowance for Bad Debts.

## FBLA ACCOUNTING II

DIRECTIONS: Select the answer that most correctly completes the statement and blacken the corresponding letter on the answer sheet.

1. If land, a building, and some equipment are acquired by paying \$50,000 cash and issuing a \$350,000 note payable, then for this transaction,
  - A. stockholder's equity is increased by \$50,000
  - B. total assets are increased by \$400,000
  - C. total liabilities are increased by \$350,000
  - D. total liabilities are increased by \$50,000
  
2. Ending merchandise inventory is \$20,000; purchases, \$90,000; purchases discount, \$1,600; and beginning inventory, \$18,000. Cost of goods sold is
  - A. \$92,000
  - B. \$90,400
  - C. \$86,400
  - D. \$88,400
  
3. The following amounts appear on the income statement of a merchandising firm: beginning inventory, \$30,000; net purchases, \$55,000; ending inventory, \$35,000; total operating expenses, \$34,000; net loss, \$2,000. The firm's sales were
  - A. \$86,000
  - B. \$82,000
  - C. \$92,000
  - D. \$98,000
  
4. Receipt of a credit memorandum by a firm would be recorded by the firm as
  - A. debit Accounts Receivable; credit Sales Returns and Allowances
  - B. debit Accounts Payable; credit Cash
  - C. debit Accounts Payable; credit Purchases Returns and Allowances
  - D. debit Accounts Payable; credit Sales Returns and Allowances
  
5. In accrual basis accounting
  - A. revenues are recognized when earned rather than when cash is collected
  - B. expenses are recognized when paid rather than when incurred
  - C. cash collected less cash disbursed equals net income
  - D. frequently, revenues are earned or recognized when merchandise is acquired for resale by paying the supplier the cost
  
6. On April 1, Hudson Company received and paid a \$700 bill for advertising done in March. In addition to this bill, the company paid \$6,100 during April for expenses incurred that month. On May 2, Hudson Company paid a \$4,600 payroll to employees for work done in April. Based on these facts, total accrual-basis expenses for April were
  - A. \$ 6,100
  - B. \$ 6,300
  - C. \$10,700
  - D. \$11,400

7. The allowance for uncollectible accounts is a/an
  - A. asset account
  - B. bad debt expense account
  - C. contra asset account
  - D. liability account
8. One of the advantages of a sole proprietorship is that
  - A. you are not required to pay taxes
  - B. it is easy to establish
  - C. the owner rarely has to work very hard
  - D. it has good growth potential
9. Closing entries are
  - A. transfer net income to capital accounts
  - B. necessary to prepare a company balance sheet
  - C. journal entries used to prepare temporary capital accounts for a new fiscal period
  - D. both A and C

The following information applies to Questions 10-12:

Airhead, Inc., purchases \$500 in parts from United Parts Company on October 20. The terms are 3/10, n/30.

10. Airhead, Inc., will record the transaction as
  - A. debit Parts Inventory, \$500; credit Accounts Payable, \$500
  - B. debit Parts Inventory, \$500; credit Accounts Payable, \$485; and Discounts Lost, \$15
  - C. debit Accounts Payable, \$485; credit Parts Inventory, \$485
  - D. debit Parts Inventory, \$485; Interest Payable, \$15; and credit Accounts Payable, \$500
11. United Parts Company will record the sale as
  - A. debit Accounts Receivable, \$500; credit Inventory, \$500
  - B. debit Accounts Receivable, \$485; credit Sales, \$485
  - C. debit Accounts Receivable, \$500; credit Sales, \$500
  - D. debit Cash, \$500; credit Sales, \$500
12. United Parts Company will record the receipt of cash on October 29 as
  - A. debit Cash, \$500; credit Accounts Receivable, \$500
  - B. debit Cash, \$485; and Sales Discounts, \$15; credit Accounts Receivable, \$500
  - C. debit Cash, \$500; credit Accounts Receivable, \$485; and Interest Income, \$15
  - D. debit Cash, \$485; credit Inventory, \$485
13. The routine, day-to-day accounting functions are
  - A. examining source documents and recording information in journals
  - B. preparation and completion of the worksheet
  - C. posting general ledger accounts from the special journals
  - D. preparing financial statements

14. A business had a beginning capital account balance of \$24,000; during the year an additional investment was made by the owner of \$3,200, the drawing account had an ending balance for the year of \$1,000, and there was a net loss from operations of \$2,500. What is the ending value of the capital account?
- A. \$17,300
  - B. \$23,700
  - C. \$25,700
  - D. \$29,700
15. What would be the book value of an asset after the third year using the straight-line method of depreciation assuming that the original cost was \$13,000, there is a residual value of \$1,000, and there is a 10-year useful life to the asset?
- A. \$ 3,600
  - B. \$ 8,000
  - C. \$ 8,400
  - D. \$12,000
16. On December 31, the UNADJUSTED debit balance in the prepaid rent account is \$1,800. Analysis indicates that all of the services due from the prepaid rent have been received. In addition, December rent of \$900 is unpaid. Select the most appropriate adjusting entry for December 31.
- A. debit Rent Expense, \$1,800; credit Prepaid Rent, \$1,800
  - B. debit Rent Expense, \$900; credit Prepaid Rent, \$900
  - C. debit Rent Expense, \$1,800; credit Prepaid Rent and Rent Payable, \$900 each
  - D. debit Rent Expense, \$2,700; credit Rent Payable, \$900; and Prepaid Rent, \$1,800
17. The term for recognition of periodic cost expiration for intangible assets is
- A. amortization
  - B. depletion
  - C. depreciation
  - D. realization
18. When a company records a weekly payroll, the total amount debited to the Salaries Expense account is the
- A. employees' gross earnings
  - B. employees' net earnings
  - C. employer's total payroll taxes
  - D. total amount withheld from employees' payroll checks
19. Adjusting entries are recorded in the
- A. Special Journals
  - B. General Ledger
  - C. General Journal
  - D. Subsidiary Ledgers
20. Allowance for Uncollectible Accounts is classified on the balance sheet under
- A. plant assets
  - B. current assets
  - C. long-term liabilities
  - D. current liabilities

The following information applies to Questions 21-24:

Valley Forge's October 31 bank statement showed a balance of \$1,778, and the company records indicated a balance of \$1,370. Check No. 124 for \$150 and Check No. 126 for \$200 were outstanding. A credit memorandum indicated that on October 30 a \$200 note receivable less a \$2 collection fee was collected by the bank for Valley Forge. Additionally, a check for \$20 received from Frank Jones on account was returned for insufficient funds (NSF). Neither the collection of the note nor the NSF check has been recorded by Valley Forge. An October 31 deposit of \$120 was not recorded by the bank.

21. What is the cash balance that is to be reported in Valley Forge's October 31 balance sheet?
  - A. \$1,548
  - B. \$1,350
  - C. \$1,453
  - D. \$1,693
  
22. What entry will Valley Forge make in its journal to record the collection of the note receivable?
  - A. debit Cash, \$198; credit Notes Receivable, \$198
  - B. debit Cash, \$198; Collection Expense, \$2; credit Notes Receivable, \$200
  - C. debit Cash, \$200; credit Notes Receivable, \$200
  - D. debit Cash, \$200; credit Interest Income, \$2; Notes Receivable, \$198
  
23. What entry will Valley Forge make in its journal for the NSF check?
  - A. debit Sales, \$20; credit Cash, \$20
  - B. debit Accounts Receivable, \$20; credit Cash, \$20
  - C. debit Cash, \$20; credit Allowance for Doubtful Accounts, \$20
  - D. no entry is required
  
24. What entry will Valley Forge make in its journal to record the deposit in transit?
  - A. debit cash, \$120; credit Accounts Receivable, \$120
  - B. debit Cash, \$120; credit Deposit in Transit, \$120
  - C. debit Deposit in Transit, \$120; credit Accounts Receivable, \$120
  - D. no entry is required
  
25. At the end of the fiscal year, the adjusting entry for accrued salaries was inadvertently omitted. The effect of the error (assuming that it is not corrected) would be to
  - A. overstate net income for the year
  - B. understate expenses for the year
  - C. understate liabilities at the end of the year
  - D. all of these
  
26. Which of the following accounts should be closed to Income Summary at the end of the fiscal year?
  - A. Unearned Revenue
  - B. Advertising Expense
  - C. Capital Stock
  - D. A and B only

The following information applies to Questions 27-31:

Use the bank's method of calculating interest (1 year = 360 days). On November 1, ABC Company sold merchandise to XYZ for \$1,500, accepting a 90-day, 12% note in payment.

27. When is the note due?
  - A. January 30
  - B. January 31
  - C. January 29
  - D. February 1
  
28. What will XYZ record in its journal on November 1?
  - A. debit Inventory, \$1,500; Interest Expense, \$45; credit Notes Payable, \$1,545
  - B. debit Inventory, \$1,500; credit Notes Receivable, \$1,500
  - C. debit Notes Receivable, \$1,500; credit Sales, \$1,500
  - D. debit Inventory, \$1,500; credit Notes Payable, \$1,500
  
29. What entry will ABC record in its journal?
  - A. debit Notes Receivable, \$1,545; credit Sales, \$1,545
  - B. debit Purchases, \$1,500; credit Notes Payable, \$1,500
  - C. debit Notes Receivable, \$1,500; credit Sales, \$1,500
  - D. debit Notes Receivable, \$1,545; credit Sales, \$1,500; Interest Income, \$45
  
30. ABC has a December 31 year end. Other than initially recording the note on November 1, no entries have been made in ABC's accounting records. What journal entry should ABC make on December 31?
  - A. debit Interest Receivable, \$15; credit Interest Income, \$15
  - B. debit Interest Receivable, \$30; credit Interest Income, \$30
  - C. debit Interest Receivable, \$29; credit Interest Income, \$29
  - D. debit Notes Receivable, \$15; credit Interest Income, \$15
  
31. XYZ paid the note when due. If ABC Company did not make any reversing entries, what journal entry is necessary to record the payment of the note?
  - A. debit Cash, \$1,545; credit Notes Receivable, \$1,545
  - B. debit Cash, \$1,545; credit Interest Receivable, \$30; Interest Income, \$15; Notes Receivable, \$1,500
  - C. debit Cash, \$1,545; credit Interest Receivable, \$29; Interest Income, \$16; Notes Receivable, \$1,500
  - D. debit Cash, \$1,545; credit Notes Receivable, \$1,515; Interest Income, \$30
  
32. Receipts from sales of meal tickets by a restaurant should be classified as
  - A. accrued expense
  - B. expense
  - C. prepaid expense
  - D. unearned revenue

The following information applies to Questions 33-36:

January 1	Beginning Inventory	10 units @ \$10.00
March 13	Purchased	15 units @ \$11.50
August 17	Purchased	20 units @ \$12.50
November 10	Purchased	10 units @ \$12.00
December 31	Ending Inventory	12 units

33. Using FIFO inventory costing, the cost of the ending inventory on December 31 would be
- \$147
  - \$145
  - \$123
  - \$140
34. Using Weighted Average inventory costing, the cost of the ending inventory on December 31 would be (to the nearest dollar)
- \$115
  - \$119
  - \$140
  - \$154
35. Using the LIFO method of inventory costing, the cost of the ending inventory on December 31 would be
- \$123
  - \$140
  - \$145
  - \$147
36. Using the FIFO method of inventory costing, cost of goods sold is
- \$495.50
  - \$502.50
  - \$519.50
  - \$497.50
37. If ending inventory is overstated
- cost of goods sold is overstated
  - net income is overstated
  - cost of good sold is understated
  - only B and C
38. Using a periodic inventory system, if beginning inventory is understated
- ending inventory is understated
  - cost of goods sold is overstated
  - net income is overstated
  - only A and B
39. On the worksheet, the income statement credit column total exceeds the income statement debit column total by \$2,300. This most likely indicates
- an asset account with a \$1,150 balance has been erroneously placed in the income statement credit column
  - net income of \$2,300
  - net loss of \$2,300
  - \$2,300 adjusting entry has been omitted from the worksheet

The following information applies to Questions 40-42:

Carlson, Wesson, and Smith formed a partnership on January 1. Their partnership agreement states that they share income and losses equally. Information concerning their capital accounts is provided below:

	<u>Capital Balance</u> <u>January 1</u>	<u>Withdrawals</u> <u>During Year</u>
Carlson	\$15,000	\$25,000
Wesson	37,500	15,000
Smith	22,500	17,000

The partnership net income for the year was \$24,000.

40. The balance of Carlson, Capital account after all closing entries have been made will be
- \$48,000
  - \$ 2,000
  - \$2,000
  - \$14,000
41. The balance of Wesson, Capital account after all closing entries have been made will be
- \$30,500
  - \$34,000
  - \$14,500
  - \$14,000
42. The balance of Smith, Capital account after all closing entries have been made will be
- \$11,500
  - \$14,000
  - \$13,500
  - \$12,000

The following information applies to Questions 43-44:

Don James is employed at the rate of \$22 per hour. He gets paid 1.5 times his regular rate for overtime hours. He worked 45 hours for the week just ended. James' year-to-date earnings indicate that he has received \$41,500 prior to this pay period. Assume a FICA rate of 7% on maximum annual earnings of \$42,000.

43. What is James' gross pay?
- \$990
  - \$1,001
  - \$1,045
  - \$1,056
44. If Federal income tax to be withheld is \$245 and State income tax to be withheld is \$57, what is James' net pay?
- \$746.15
  - \$669.35
  - \$613.70
  - \$704.35

The following information applies to Questions 45-46:

On October 28 a company established a \$40 petty cash fund. The fund was reimbursed on November 25 for the following expenditures: postage, \$29.50; office supplies, \$4; and miscellaneous expenses, \$5.25.

45. What was the October 28 journal entry?
  - A. debit Petty Cash, \$40; credit Cash, \$40
  - B. debit Petty Cash, \$40; credit Accounts Payable, \$40
  - C. debit Accounts Receivable, \$40; credit Cash, \$40
  - D. Either B or C
  
46. What is the November 25 journal entry?
  - A. debit Postage, \$29.50; Office Supplies, \$4; Miscellaneous Expense, \$5.25; credit Accounts Receivable, \$37.75
  - B. debit Postage, \$29.50; Office Supplies, \$4; Miscellaneous Expense, \$5.25; credit Cash, \$37.75
  - C. debit Postage, \$29.50; Office Supplies, \$4; Miscellaneous Expense, \$5.25; credit Petty Cash, \$37.75
  - D. debit Accounts Payable, \$37.75; credit Cash, \$37.75
  
47. Which of the following is debited to the Purchases account of a grocery store?
  - A. purchase of a cash register
  - B. purchase of a roll of wrapping paper used by the butcher
  - C. purchase of advertising space in a newspaper
  - D. purchase of a case of tomato soup
  
48. A business purchased equipment signing a three-month, non-interest bearing note payable. The effect on assets, liabilities, and capital would be
  - A. increase an asset; increase a liability
  - B. increase one asset; decrease another asset
  - C. increase an asset; increase capital
  - D. decrease an asset; decrease a liability
  
49. Spike Company received a \$12,000, 90-day, 10% note from Dowler Company on May 1. On May 31, Spike Company's adjusting entry for interest would
  - A. debit Interest Receivable for \$300
  - B. credit Interest Income for \$300
  - C. credit Interest Income for \$100
  - D. debit Interest Receivable for \$1,200
  
50. The combined cash count of all cash registers at the close of business is \$2.10 more than the cash sales indicated by the cash register tapes. The entry to record cash register sales for the day would include
  - A. debit to Cash for \$2.10
  - B. credit to Sales for \$2.10
  - C. credit to Cash Short and Over for \$2.10
  - D. debit to Cash Short and Over for \$2.10

**APPENDIX C**

**Sample Coded Score Sheet**



**APPENDIX D**

**Correlation with Total Score  
for Each Choice on Items  
for Accounting I Test**

Correlation with Total Score for Each Choice on Itemsfor Accounting I Test

Item #	% correct responses	Correlation with total score
1	92	.17
2	70	.28
3	70	.40
4	70	.21
5	89	.25
6	92	-0.07
7	63	.35
8	97	.23
9	72	-0.13
10	85	.26
11	74	.19
12	53	.15
13	78	.40
14	64	.30
15	32	.06
16	29	.17
17	95	.09
18	97	.13
19	76	.24
20	93	.22
21	80	.42
22	61	.43
23	44	.30
24	74	.52
25	77	.49
26	88	.30
27	94	.30
28	73	.19
29	60	.52
30	83	.23
31	60	.42
32	60	.18
33	66	.45
34	76	.57
35	71	.51
36	39	.21
37	84	.05
38	56	.40
39	82	.28
40	77	.36
41	79	.40
42	54	.23
43	29	.10
44	32	.39
45	28	.16
46	59	.25
47	82	.08
48	97	.31
49	99	.30
50	88	.49
51	85	.29
52	72	.38
53	47	.21
54	85	.41
55	87	.35
56	67	.32
57	95	.23
58	96	.25
59	75	.43
60	79	.41

**APPENDIX E**

**Correlation with Total Score  
for Each Choice on Items  
for Accounting II Test**

Correlation with Total Score for Each Choice on Itemsfor Accounting II Test

Item #	% correct responses	Correlation with total score
1	58	.11
2	51	.25
3	38	.34
4	44	.28
5	49	.28
6	17	.24
7	54	.52
8	62	.23
9	72	.13
10	69	.41
11	75	.55
12	64	.35
13	86	.27
14	78	.29
15	64	.22
16	44	.11
17	15	-0.04
18	57	.18
19	86	.20
20	56	.55
21	52	.33
22	70	.40
23	38	.42
24	57	.20
25	75	.30
26	27	-0.02
27	35	.15
28	40	.40
29	40	.41
30	44	.34
31	49	.34
32	56	.42
33	42	.37
34	48	.17
35	40	.28
36	25	.26
37	51	.24
38	20	-0.01
39	56	.28
40	73	.54
41	77	.55
42	80	.51
43	65	.23
44	15	.16
45	75	.28
46	44	.14
47	64	.36
48	67	.49
50	23	.14

**APPENDIX F**

**Combined Accounting Concepts and Principles of  
Textbooks Adopted by Virginia Schools, and the  
Virginia Department of Education Competency Guides  
for Business Education**

Combined Accounting Concepts and Principles of  
Textbooks Adopted by Virginia Schools, and the  
Virginia Department of Education Competency Guides  
for Business Education

Accounting period cycle	Going concern
Adequate disclosure	Historical cost
Automated accounting	Matching expenses
Basis for recording assets	and revenue
Business entity	Net cost of
Classifying assets	purchase
and liabilities	Objective evidence
Consistent reporting	Prepaid expenses
Cost	Realization of
Cutoff date	revenue
Depreciation	Recording revenue
Expenses	Unit of measurement
	Updating accounts

(Business Education Suggested Course Competencies and  
Performance Objectives, 1988; Swensen, Ross, & Hanson,  
1987; Weaver, Brower, Smiley, & Rose, 1988)

**APPENDIX G**

**Business Educators Making Content Comparisons**

**Business Educators Auditing Content Comparisons of Test  
Items**

**Dr. Margaret Isom**, Instructor, Business Education,  
Virginia Tech

**Carol Jennings**, Graduate Student, Business Education,  
Virginia Tech; Executive Secretary, College of  
Business, Virginia Tech

**Carolyn Massey**, Graduate Student, Business Education,  
Virginia Tech; Instructor, Business Education, Blynn  
College, Texas

**Eleanor Stevens**, Graduate Student, Business Education,  
Virginia Tech; Instructor, Adult Education (Business),  
Montgomery County Schools

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