

ED 389 731

TM 024 304

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 TITLE Alternative Assessment in Educational Psychology: A Case Analysis. Draft.
 PUB DATE Apr 95
 NOTE 25p.; Paper presented at the Annual Meeting of the American Educational Research Association (San Francisco, CA, April 18-22, 1995).
 PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
 DESCRIPTORS Case Studies; Educational Assessment; Educational Innovation; *Educational Psychology; Higher Education; *Outcomes of Education; *Portfolios (Background Materials); Program Effectiveness; *Student Attitudes; Student Motivation; Thinking Skills; *Undergraduate Students
 IDENTIFIERS *Alternative Assessment; Performance Based Evaluation

ABSTRACT

This study describes an innovative alternative assessment program used in an undergraduate educational psychology course. Subjects were 60 undergraduate students enrolled in a teacher preparation program at a midwestern liberal arts college. Each student was required to demonstrate mastery of course objectives through a course portfolio. The study also investigated the program's effectiveness in terms of students' attitudes and beliefs using both quantitative and qualitative data. The results indicated that many of the outcomes sought by educational psychology teachers (e.g., higher-order thinking, more quality time spent on assignments, and intrinsic motivation) were achieved with the use of alternative forms of assessment. Ancillary benefits in terms of perceived writing and technological skills were identified as well. Positive and negative dimensions of the program were examined. Appendixes present a modified course syllabus and contain the assessment program questionnaire frequencies. (Contains 6 references.) (SLD)

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Alternative Assessment in Educational Psychology:
A Case Analysis

DRAFT

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A paper presented to the 1995 Annual Meeting of the
American Educational Research Association
San Francisco, CA, April, 1995

ABSTRACT

The purpose of this study was to describe an innovative alternative assessment program used in an undergraduate educational psychology course. The study also investigated the effectiveness of the program in terms of students' attitudes and beliefs using both quantitative and qualitative data. The results indicated that many of the outcomes sought by educational psychology teachers (e.g., higher-order thinking, more quality time spent on assignments, intrinsic motivation) were achieved with the use of alternative forms of assessment. Positive and negative dimensions of the program were examined.

Recently, dissatisfaction with traditional forms of assessment and evaluation has led to a movement toward alternative assessments. Sweet (1993) defined alternative assessment as "a form of testing that requires students to perform a task rather than select an answer from a ready-made list" (p. 35). Herman, Aschbacher, and Winters (1992) have suggested that there are five common characteristics in alternative assessments: (1) ask students to perform, create, produce, or do something; (2) tap higher-level thinking and problem-solving skills; (3) use tasks that represent meaningful instructional activities; (4) invoke real-world applications; (5) people, not machines, do the scoring, using human judgement; (6) require new instructional and assessment roles for teachers (p. 6).

The underlying belief of proponents of alternative assessment is that assessments which require students to **actively** demonstrate knowledge, skills, and attitudes will be more valid indicators of knowledge and abilities. Additional benefits include: improved instruction through better feedback, increased students' comprehension of assessment tasks, criteria, and standards, and a curriculum that directs assessment rather than visa versa (Sweet, 1993).

An important characteristic of alternative assessment particularly relevant to teacher educators is the aspect of authentic applications to the profession of teaching. Teacher education courses, in particular educational psychology classes, have been criticized for lacking worthwhile tasks related to the real-world of teachers.

This paper will describe an innovative alternative assessment program used in an undergraduate educational psychology course. In addition, the paper will include an examination of the effectiveness of the program in terms of students' attitudes and beliefs.

Introduction

In the spring of 1994, in an effort to encourage my students to become more actively involved with the learning process, I completely transformed the assessment aspect of my educational psychology courses. My assessment approach moved from the traditional midterm - final, multiple choice - essay exams to a system which involves more authentic contexts, choice, self-evaluation, and peer-evaluation.

The new system¹ required each student to demonstrate mastery of the course objectives by compiling a course portfolio. Within the portfolio, each student included at least one artifact for each course objective which represented his or her mastery. There were eleven objectives for the course. Specific options were furnished to each student (e.g., article reviews or case studies); however, students were encouraged to be creative and develop their own exhibits of mastery. Artifacts that students presented included: video taped interviews with teachers and parents, mock classroom situations, observations and analyses of actual classroom situations, mock teacher workshops, and book reviews.

Several students chose to work in groups to develop artifacts. Based on current educational research and informal feedback I have received from students, cooperative learning serves as both a motivating experience and an effective learning strategy (see Slavin, 1991 for a review). When students worked in groups, the minimum requirements were multiplied by the number of group members. Also, each member of a group completed a cooperative group member evaluation form.

¹ A modified course syllabus can be found in Appendix A.

Artifact evaluation was based on students' self-evaluations, peers' evaluations, and instructor's evaluations. All evaluations were based on explicit criteria listed in the syllabus. Sample criteria included: practical classroom applications, comprehensive coverage of the objective, and synthesis of previously learned information and objectives.

Upon receiving feedback from peers and the instructor, students were permitted to revise and improve their artifacts by editing areas which were indicated based on the evaluation criteria and comments from peers and the instructor.

Method

At the conclusion of the spring 1994 and fall 1994 semesters, students were asked to anonymously evaluate the new assessment program. A questionnaire which consisted of statements to be rated on a Likert scale as well as several open-ended questions was administered. Statements included on the questionnaire related to: comparisons with traditional forms of assessment, general impressions, as well as positive and negative aspects of the program. Also, data was analyzed from the traditional course evaluations used by the college. Both quantitative and qualitative data were analyzed.

Data Source

Subjects were 60 undergraduate students enrolled in a teacher preparation program at a midwestern liberal arts college with an enrollment of approximately 1,000 students.

Results and Discussion

The results presented below indicate the proportion of students who agreed or strongly agreed with the following²:

Compared with courses that use traditional forms of assessment (e.g., objective and essay tests), in regard to the assessment program in this course I:

was encouraged to think in a higher-order manner. **98%**

spent more time preparing for their class assessments (i.e., artifacts vs. tests). **87%**

felt the time spent was more worthwhile and useful. **83%**

better demonstrated their knowledge of course content. **87%**

better personalized the course content and concepts. **93%**

felt that the ability to revise their artifacts and other assignments allowed them to focus more on learning than "getting a grade". **82%**

² Complete frequencies and descriptive statistics are listed in Appendix B.

Both quantitative and qualitative data indicate that peer- and self-evaluations were viewed as the least effective portion of the program. Less than half (45%) of the students agreed or strongly agreed with the statements "I found the process of self-evaluation useful" and "I found the peer-evaluation to be useful feedback for my work". However, most (58%) students agreed that peer-evaluation was useful because they could examine classmates' work.

Qualitative analyses from the spring 1994 indicated "time" and "quantity of work" as a consistent themes in terms of student concerns in regard to the assessment program. Statements such as: too much work, too lengthy, too much time, too many objectives, and too many objectives due at one time were fairly typical sentiments when students were solicited as to the worst aspects of the assessment program.

Based on the spring 1994 analyses, the required number of artifacts was reduced from eleven to seven for the fall 1994 semester. The most frequently listed student concern was the fact that two artifacts were due at the same time. Students indicated that they would prefer to have the due dates spaced out.

Themes also emerged when the students were asked to list the best aspects of the assessment program. For both semesters, the most consistent theme presented was the idea that this assessment program required the students to think more deeply so that they came away with a more sophisticated understanding of the content. Subthemes revolved around choice, freedom, and control. Students' responses to the open-ended items included: allowed to be creative, require deep vs. shallow understanding, made you think, helped organize material, better than memorizing, apply to my class, allows personal demonstration of knowledge vs. tests, revisions allowed for second chance.

Students also reported that the program allowed them to improve their skills in areas other

than educational psychology. Approximately half of the students believed that their writing (55%) and technological (42%) skills improved. This improvement was presumably encouraged by the large number of written artifacts which could be edited and the completion of artifacts using computers and video.

Overall, 88% of the students felt the assessment program used was overall a valuable learning tool, and 87% would take another course taught this way.

Educational Implications and Future Research

The survey portion of this study indicates that many of the outcomes sought by educational psychology teachers (e.g., higher-order thinking, more quality time spent on assignments, intrinsic motivation) were achieved with the use of alternative forms of assessment. Ancillary benefits in terms of perceived writing and technological skills were found as well.

These results suggest that choice and responsibility are appreciated by college students and assessments that incorporate such attributes may motivate students to become better learners. This finding that choice leads to intrinsic motivation, rather than just "getting a grade" is consistent with previous research (Deci, E., Vallerand, R.J., Pelletier, L.G., & Ryan, R.M., 1991). Intrinsic motivation is an under-employed resource and should be utilized more throughout education, especially at the college level.

While it appears that students believed this program was effective, research is needed to compare traditional with alternative forms of assessment. Such research must be careful in choosing a dependent variable or variables because the usual "test" of knowledge may not be an appropriate measure of what we hope our students learn in our educational psychology courses.

References

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- Sweet, D. (1993). Performance assessment. Mid-Western Educational Researcher, 6(2), 35-36.
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APPENDIX A

Modified Course Syllabus

Educational Psychology

Instructor: Dr. John Gambro

Text: Woolfolk, A. E. (1993). Educational psychology (5th ed.). Allyn & Bacon. Needham Heights: MA.

Course Description:

Educational Psychology directs the student in the application of the principles of psychology to education. Special emphasis is given to understanding growth and development, the learning process, motivation, intelligence, evaluation, measurement, and the impact of culture on learning styles.

Objectives:

1. Students will apply Behaviorism, including Classical Conditioning, Operant Conditioning, and Social Learning Theory, to educational situations.
2. Students will apply the cognitive development principles of Piaget and Vygotsky to educational situations.
3. Students will demonstrate an understanding of the mechanisms involved with information processing and apply additional cognitive learning concepts to educational situations.
4. Students will apply cognitive strategies, including reciprocal teaching and metacognition, in order to create effective learning situations.
5. Students will demonstrate an understanding of motivational processes and produce educational applications using motivational considerations based on theories of motivation.
6. Students will demonstrate an understanding of motivational techniques including teacher expectations and cooperative learning.
7. Students will demonstrate an ability to utilize effective planning and teaching strategies, including writing appropriate objectives.
8. Students will characterize and discuss the educational implications of individual differences, and concepts of intelligence.
9. Students will demonstrate an ability to understand concepts related to standardized testing and interpret standardized test data.
10. Students will discuss and evaluate advantages and disadvantages of traditional forms of assessment, alternative forms of assessment, evaluation, and grading.
11. Students will demonstrate an understanding of child and adolescent social, emotional, physical, and language development and describe educational implications based on developmental considerations.

Course Evaluation:

1. Course grades will be determined by performance on the following assignments:

| | | |
|----|---------------------|-----|
| A. | Class Assignments | 25% |
| B. | Class Participation | 10% |

- C. Course Portfolio 65%
- A. The "Class Assignments" will include written assignments, performance-based assessments (e.g., class demonstrations and presentations), group assignments, content quizzes, attendance quizzes, and other activities.
- B. Criteria for Class Participation Evaluation:
- A Well-prepared for class
 Voluntarily gets involved in discussions and asks questions frequently
 Integrates outside readings and experiences
 Consistently uses professional vocabulary
 Asks students to clarify ideas
 Voluntarily contributes to group work
 Works diligently to develop cooperative group
- B Prepared for class
 Voluntarily gets involved in discussions
 Integrates outside readings and/or experiences
 Uses professional vocabulary
 Asks students to clarify ideas
 Contributes to group work
 Cooperates, but does not work to get others involved
- C Somewhat prepared for class
 Contributes to class discussions when called upon
 Seldom asks students to clarify ideas
 Rarely uses professional vocabulary
 Does not initiate contributions to group work
 Cooperates by "always going along" with other people's ideas
- D Poorly prepared for class
 Few contributions to class discussions
 Never integrates outside readings or experiences
 Passes negative judgement on other peoples' ideas
 Does not contribute to group work
 Non-cooperative behavior
- F Not prepared for class
 No contributions to class discussions
 Passes negative judgement on other peoples' ideas
 Does not appear to listen
 Fails to contribute or cooperate
- C. Each student is required to demonstrate mastery of the objectives by compiling a course portfolio. Within the portfolio each student must include **at least** one artifact for each course content objective which represents his or her mastery.

Modification made fall 1994: Each student is required to demonstrate **mastery objectives 1, 2, 3, 5, 6, 9, & 10** by compiling a course portfolio. Within the portfolio, each student must include **at least** one artifact for each course content objective which represents his or her mastery.

Students may work in groups. When students work in groups, minimum requirements are multiplied by the number of group members. Also, each member of group must complete a cooperative group member evaluation form (see form below).

One possible artifact is a focused paper. Focused paper questions are listed on the "Discussion Preparation" forms distributed throughout the semester. Students are encouraged to develop their own questions or to work with the instructor to generate questions of interest. Focused question papers must be at least four typed pages

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Another possible artifact is a typed journal article review (minimum 4 typed pages). The review should incorporate all listed criteria and integrate concepts discussed in class. Listed below are the course objectives with corresponding journal articles. "Annual Editions: Ed. Psych. 93/94" and "Readings & Cases in Ed. Psych." are on reserve at the CSF library. Also, students may review articles of their own choosing.

1. Students will apply Behaviorism, including Classical Conditioning, Operant Conditioning, and Social Learning Theory, to educational situations.

Readings & Cases in Ed. Psych. - 16, 28, 29
Annual Editions: Ed. Psych. 93/94 - 16, 17, 29, 31, 32

2. Students will apply the cognitive development principles of Piaget and Vygotsky to educational situations.

Readings & Cases in Ed. Psych. - 4, 17

3. Students will demonstrate an understanding of the mechanisms involved with information processing and apply additional cognitive learning concepts to educational situations.

Readings & Cases in Ed. Psych. - 18, 19, 21
Annual Editions: Ed. Psych. 93/94 - 11, 15

4. Students will demonstrate an ability to apply cognitive strategies, including reciprocal teaching and metacognition, in order to create learning situations.

Annual Editions: Ed. Psych. 93/94 - 14, 21, 22
Readings & Cases in Ed. Psych. - 18, 19, 21, 33, 34

5. Students will demonstrate an understanding of motivational processes and produce educational applications using motivational considerations based on theories of motivation.

Annual Editions: Ed. Psych. 93/94 - 8, 18, 25, 26, 27
Readings & Cases in Ed. Psych. - 22, 23, 24

6. Students will demonstrate an understanding of motivational techniques including teacher expectations and cooperative learning.

Annual Editions: Ed. Psych. 93/94 - 19, 28, 30
Readings & Cases in Ed. Psych. - 7, 8, 25, 27

7. Students will demonstrate an ability to utilize effective planning and teaching strategies, including writing appropriate objectives.

Annual Editions: Ed. Psych. 93/94 - 20
Readings & Cases in Ed. Psych. - 32

8. Students will characterize and discuss the educational implications of individual differences, and concepts of intelligence.

Annual Editions: Ed. Psych. 93/94 - 23, 36, 37, 38
Readings & Cases in Ed. Psych. - 11

9. Students will demonstrate an ability to understand concepts related to standardized testing and interpret standardized test data.

Annual Editions: Ed. Psych. 93/94 - 45
Readings & Cases in Ed. Psych. - 35, 36, 37

10. Students will discuss and evaluate advantages and disadvantages of traditional forms of assessment, alternative forms

of assessment, evaluation, and grading.

Annual Editions: Ed. Psych. 93/94 - 41, 42, 43, 44
Readings & Cases in Ed. Psych. - 35, 36, 37, 38, 40

11. Students will demonstrate an understanding of child and adolescent social, emotional, physical, and language development and describe educational implications based on developmental considerations.

Annual Editions: Ed. Psych. 93/94 - 5, 6, 7, 30, 10, 11, 12
Readings & Cases in Ed. Psych. - 8, 12

12. Students will develop an explicit and comprehensive theory of teaching, learning, and development based on existing theories and research.

Annual Editions: Ed. Psych. 93/94 - N/A
Readings & Cases in Ed. Psych. - N/A

Each student must complete at least 2 artifacts which are **not** journal article reviews or focused papers. Such artifacts may include but are not limited to the following:

- Videotaped Lesson, Mock Nightline (e.g., National Testing), Group Panel Discussion (experts), Lesson Plans, Micro Teaching (small group of peers), Student Interview, Teacher Interview, Case Studies, Oral Report, Concept Map, Working with Students (e.g., Piagetian tasks, Scaffolding, etc.), Develop a budget proposal to spend grant money given to school board, Classroom Observation and Analysis (higher-order questioning scaffolding, authentic assessment, teacher expectations) Principal Interview, Survey / Questionnaire (e.g., memories from school), Book Report

Each artifact included in the portfolio will be evaluated using the criteria listed below. The instructor will evaluate all artifacts. **The student must complete a self-evaluation for each artifact.** Also, three artifacts must be evaluated by a peer currently enrolled in this course. Point totals for grades will be provided by the instructor with consideration of peer- and self-evaluations.

Upon receiving feedback from peers and the instructor, students are permitted to revise and improve artifacts by editing areas which are indicated based on the evaluation criteria and comments from peers and the instructor.

Criteria for Evaluating Artifacts

1. Demonstrates professionalism (i.e., correct use of references, typed, turned in on time, neat, organized, and grammatically correct).

2. Demonstrates a **direct** link to objective.

3. Demonstrates **practical** classroom applications.

4. Demonstrates in-depth knowledge of content.

5. Demonstrates **personal** analysis and synthesis.

6. Demonstrates higher-order understanding and/or application of generalizations gleaned from content.

7. Material is presented in a clear and organized manner.

8. Demonstrates synthesis of previously learned information and objectives (where appropriate).

9. Integrates course content, including professional vocabulary.

10. Demonstrates comprehensive coverage of objective.

Scale - 5 = excellent, 4 = very good, 3 = average, 2 = below average, 1 = not present

Comments:

Evaluated by: _____

Check one:

Instructor _____, Peer _____, or Self _____

Objective # _____

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Cooperative Group Member Evaluation Form

- A Well-prepared for group meetings
Voluntarily gets involved in discussions and asks questions
Asks group members to clarify ideas
Voluntarily contributes to group work
Works diligently to develop cooperative group
- B Prepared for group meetings
Gets involved in discussions when prompted
Asks group members to clarify ideas
Contributes to group work
Cooperates, but does not work to get others involved
- C Somewhat prepared for group meetings
Few contributions to group discussions
Seldom asks group members to clarify ideas
Does not initiate contributions to group work
Cooperates by "always going along" with other people's ideas
- D Poorly prepared for group meetings
Few contributions to group discussions
Passes negative judgement on other peoples' ideas
Does not contribute to group work
Non-cooperative behavior
- F Not prepared for group meetings
No contributions to group discussions
Passes negative judgement on other peoples' ideas
Does not appear to listen
Fails to contribute or cooperate

Name of group member:

_____ A B C D F

_____ A B C D F

_____ A B C D F

_____ A B C D F

Your Name:

Week of:

Course Schedule

| | |
|--------|--|
| 1 - 10 | Chapter 1 & Chapter 6 Teaching, Ed. Psych., & Behaviorism |
| 1 - 17 | Chapter 6 Behaviorism |
| 1 - 24 | Chapter 2 Cognitive Development (only) |
| 1 - 31 | Chapter 7 Cognitive Views of Learning |
| 2 - 7 | Chapter 8 Applications of Cognitivism |
| 2 - 14 | Chapter 8 (Continued) |
| 2 - 21 | Midterm Exhibition * |
| 2 - 28 | Spring Break |
| 3 - 7 | Chapter 9 Motivation: Personal Factors |
| 3 - 14 | Chapter 10 Motivation: External Forces |
| 3 - 21 | Chapter 12 Setting Objectives and Planning |
| 3 - 28 | Easter Break |
| 4 - 4 | Chapter 14 Standardized Testing ** |
| 4 - 11 | Chapter 4 Intelligence (only) |
| 4 - 18 | Chapter 15 Classroom Evaluation and Grading |
| 4 - 25 | Chapter 3 & Chapter 2 (Lang. only) Personal, Social, & Language Development |
| 5 - 2 | Final Exhibition *** |

* Artifacts for objectives 1 - 4 due.

** Artifacts for objectives 5 - 7 due.

*** Artifacts for objectives 8 - 12 due.

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APPENDIX B

ASSESSMENT PROGRAM QUESTIONNAIRE FREQUENCIES

Compared with courses that use traditional forms of assessment (e.g., objective and essay tests), in regard to the assessment program in this course I:

Q1 was encouraged to think in a higher-order manner.

| Value Label | Value | Frequency | Percent | Valid Percent | Cum Percent |
|----------------|-------|---------------|---------|---------------|-------------|
| DISAGREE | 2 | 1 | 1.7 | 1.7 | 1.7 |
| AGREE | 4 | 23 | 38.3 | 38.3 | 40.0 |
| STRONGLY AGREE | 5 | 36 | 60.0 | 60.0 | 100.0 |
| | | ----- | ----- | ----- | |
| | Total | 60 | 100.0 | 100.0 | |
| Valid cases | 60 | Missing cases | 0 | | |

Q2 spent more time preparing for their class assessments (i.e., artifacts vs. tests).

| Value Label | Value | Frequency | Percent | Valid Percent | Cum Percent |
|----------------|-------|---------------|---------|---------------|-------------|
| DISAGREE | 2 | 1 | 1.7 | 1.7 | 1.7 |
| NOT SURE | 3 | 7 | 11.7 | 11.7 | 13.3 |
| AGREE | 4 | 18 | 30.0 | 30.0 | 43.3 |
| STRONGLY AGREE | 5 | 34 | 56.7 | 56.7 | 100.0 |
| | | ----- | ----- | ----- | |
| | Total | 60 | 100.0 | 100.0 | |
| Valid cases | 60 | Missing cases | 0 | | |

Q3 felt the time spent was more worthwhile and useful.

| Value Label | Value | Frequency | Percent | Valid Percent | Cum Percent |
|----------------|-------|---------------|---------|---------------|-------------|
| DISAGREE | 2 | 2 | 3.3 | 3.3 | 3.3 |
| NOT SURE | 3 | 8 | 13.3 | 13.3 | 16.7 |
| AGREE | 4 | 26 | 43.3 | 43.3 | 60.0 |
| STRONGLY AGREE | 5 | 24 | 40.0 | 40.0 | 100.0 |
| | | ----- | ----- | ----- | |
| | Total | 60 | 100.0 | 100.0 | |
| Valid cases | 60 | Missing cases | 0 | | |

Q4 better demonstrated their knowledge of course content.

| Value Label | Value | Frequency | Percent | Valid Percent | Cum Percent |
|----------------|-------|---------------|---------|---------------|-------------|
| DISAGREE | 2 | 1 | 1.7 | 1.7 | 1.7 |
| NOT SURE | 3 | 7 | 11.7 | 11.7 | 13.3 |
| AGREE | 4 | 18 | 30.0 | 30.0 | 43.3 |
| STRONGLY AGREE | 5 | 34 | 56.7 | 56.7 | 100.0 |
| | Total | 60 | 100.0 | 100.0 | |
| Valid cases | 60 | Missing cases | 0 | | |

Q5 better personalized the course content and concepts.

| Value Label | Value | Frequency | Percent | Valid Percent | Cum Percent |
|----------------|-------|---------------|---------|---------------|-------------|
| DISAGREE | 2 | 1 | 1.7 | 1.7 | 1.7 |
| NOT SURE | 3 | 3 | 5.0 | 5.0 | 6.7 |
| AGREE | 4 | 25 | 41.7 | 41.7 | 48.3 |
| STRONGLY AGREE | 5 | 31 | 51.7 | 51.7 | 100.0 |
| | Total | 60 | 100.0 | 100.0 | |
| Valid cases | 60 | Missing cases | 0 | | |

Q6 felt that the ability to revise their artifacts and other assignments allowed them to focus more on learning than "getting a grade".

| Value Label | Value | Frequency | Percent | Valid Percent | Cum Percent |
|-------------------|-------|---------------|---------|---------------|-------------|
| STRONGLY DISAGREE | 1 | 1 | 1.7 | 1.7 | 1.7 |
| NOT SURE | 3 | 9 | 15.0 | 15.3 | 16.9 |
| AGREE | 4 | 17 | 28.3 | 28.8 | 45.8 |
| STRONGLY AGREE | 5 | 32 | 53.3 | 54.2 | 100.0 |
| | 9 | 1 | 1.7 | Missing | |
| | Total | 60 | 100.0 | 100.0 | |
| Valid cases | 59 | Missing cases | 1 | | |

In regard to the assessment program used in this course, in general, I:

Q7 found the process of self-evaluation useful.

| Value Label | Value | Frequency | Percent | Valid Percent | Cum Percent |
|-------------------|-------|---------------|---------|---------------|-------------|
| STRONGLY DISAGREE | 1 | 4 | 6.7 | 6.7 | 6.7 |
| DISAGREE | 2 | 7 | 11.7 | 11.7 | 18.3 |
| NOT SURE | 3 | 22 | 36.7 | 36.7 | 55.0 |
| AGREE | 4 | 18 | 30.0 | 30.0 | 85.0 |
| STRONGLY AGREE | 5 | 9 | 15.0 | 15.0 | 100.0 |
| | Total | 60 | 100.0 | 100.0 | |
| Valid cases | 60 | Missing cases | 0 | | |

Q8 found the peer-evaluation to be useful feedback for my work.

| Value Label | Value | Frequency | Percent | Valid Percent | Cum Percent |
|-------------------|-------|---------------|---------|---------------|-------------|
| STRONGLY DISAGREE | 1 | 3 | 5.0 | 5.1 | 5.1 |
| DISAGREE | 2 | 10 | 16.7 | 16.9 | 22.0 |
| NOT SURE | 3 | 19 | 31.7 | 32.2 | 54.2 |
| AGREE | 4 | 13 | 21.7 | 22.0 | 76.3 |
| STRONGLY AGREE | 5 | 14 | 23.3 | 23.7 | 100.0 |
| | 9 | 1 | 1.7 | Missing | |
| | Total | 60 | 100.0 | 100.0 | |
| Valid cases | 59 | Missing cases | 1 | | |

Q9 found peer-evaluation to be useful because I could examine classmates' work.

| Value Label | Value | Frequency | Percent | Valid Percent | Cum Percent |
|-------------------|-------|---------------|---------|---------------|-------------|
| STRONGLY DISAGREE | 1 | 2 | 3.3 | 3.4 | 3.4 |
| DISAGREE | 2 | 6 | 10.0 | 10.2 | 13.6 |
| NOT SURE | 3 | 16 | 26.7 | 27.1 | 40.7 |
| AGREE | 4 | 21 | 35.0 | 35.6 | 76.3 |
| STRONGLY AGREE | 5 | 14 | 23.3 | 23.7 | 100.0 |
| | 9 | 1 | 1.7 | Missing | |
| | Total | 60 | 100.0 | 100.0 | |
| Valid cases | 59 | Missing cases | 1 | | |

Q10 enjoyed the freedom to choose an artifact.

| Value Label | Value | Frequency | Percent | Valid Percent | Cum Percent |
|-------------------|-------|-----------|---------|---------------|-------------|
| STRONGLY DISAGREE | 1 | 1 | 1.7 | 1.7 | 1.7 |
| DISAGREE | 2 | 1 | 1.7 | 1.7 | 3.3 |
| NOT SURE | 3 | 6 | 10.0 | 10.0 | 13.3 |
| AGREE | 4 | 21 | 35.0 | 35.0 | 48.3 |
| STRONGLY AGREE | 5 | 31 | 51.7 | 51.7 | 100.0 |
| | | ----- | ----- | ----- | |
| | Total | 60 | 100.0 | 100.0 | |

Valid cases 60 Missing cases 0

Q11 noticed an improvement in my writing skills.

| Value Label | Value | Frequency | Percent | Valid Percent | Cum Percent |
|----------------|-------|-----------|---------|---------------|-------------|
| DISAGREE | 2 | 7 | 11.7 | 11.7 | 11.7 |
| NOT SURE | 3 | 20 | 33.3 | 33.3 | 45.0 |
| AGREE | 4 | 18 | 30.0 | 30.0 | 75.0 |
| STRONGLY AGREE | 5 | 15 | 25.0 | 25.0 | 100.0 |
| | | ----- | ----- | ----- | |
| | Total | 60 | 100.0 | 100.0 | |

Valid cases 60 Missing cases 0

Q12 improved my skills in technology (e.g., using video or computer equipment).

| Value Label | Value | Frequency | Percent | Valid Percent | Cum Percent |
|-------------------|-------|-----------|---------|---------------|-------------|
| STRONGLY DISAGREE | 1 | 5 | 8.3 | 8.5 | 8.5 |
| DISAGREE | 2 | 17 | 28.3 | 28.8 | 37.3 |
| NOT SURE | 3 | 12 | 20.0 | 20.3 | 57.6 |
| AGREE | 4 | 11 | 18.3 | 18.6 | 76.3 |
| STRONGLY AGREE | 5 | 14 | 23.3 | 23.7 | 100.0 |
| | 9 | 1 | 1.7 | Missing | |
| | | ----- | ----- | ----- | |
| | Total | 60 | 100.0 | 100.0 | |

Valid cases 59 Missing cases 1

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Q13 learned through collaboration (formally or informally).

| Value Label | Value | Frequency | Percent | Valid Percent | Cum Percent |
|-------------------|-------|---------------|---------|---------------|-------------|
| STRONGLY DISAGREE | 1 | 3 | 5.0 | 5.0 | 5.0 |
| DISAGREE | 2 | 3 | 5.0 | 5.0 | 10.0 |
| NOT SURE | 3 | 9 | 15.0 | 15.0 | 25.0 |
| AGREE | 4 | 25 | 41.7 | 41.7 | 66.7 |
| STRONGLY AGREE | 5 | 20 | 33.3 | 33.3 | 100.0 |
| | | ----- | ----- | ----- | |
| | Total | 60 | 100.0 | 100.0 | |
| Valid cases | 60 | Missing cases | 0 | | |

Q14 was encouraged to participate in a learning experience that I probably would not have done (e.g., talk to another person about an educational topic).

| Value Label | Value | Frequency | Percent | Valid Percent | Cum Percent |
|-------------------|-------|---------------|---------|---------------|-------------|
| STRONGLY DISAGREE | 1 | 1 | 1.7 | 1.7 | 1.7 |
| DISAGREE | 2 | 6 | 10.0 | 10.0 | 11.7 |
| NOT SURE | 3 | 4 | 6.7 | 6.7 | 18.3 |
| AGREE | 4 | 17 | 28.3 | 28.3 | 46.7 |
| STRONGLY AGREE | 5 | 32 | 53.3 | 53.3 | 100.0 |
| | | ----- | ----- | ----- | |
| | Total | 60 | 100.0 | 100.0 | |
| Valid cases | 60 | Missing cases | 0 | | |

Q15 used the discussion preparation forms.

| Value Label | Value | Frequency | Percent | Valid Percent | Cum Percent |
|-------------------|-------|---------------|---------|---------------|-------------|
| STRONGLY DISAGREE | 1 | 3 | 5.0 | 5.0 | 5.0 |
| DISAGREE | 2 | 7 | 11.7 | 11.7 | 16.7 |
| NOT SURE | 3 | 4 | 6.7 | 6.7 | 23.3 |
| AGREE | 4 | 30 | 50.0 | 50.0 | 73.3 |
| STRONGLY AGREE | 5 | 16 | 26.7 | 26.7 | 100.0 |
| | | ----- | ----- | ----- | |
| | Total | 60 | 100.0 | 100.0 | |
| Valid cases | 60 | Missing cases | 0 | | |

Q16 found the discussion preparation forms helpful.

| Value Label | Value | Frequency | Percent | Valid Percent | Cum Percent |
|-------------------|-------|---------------|---------|---------------|-------------|
| STRONGLY DISAGREE | 1 | 3 | 5.0 | 5.0 | 5.0 |
| DISAGREE | 2 | 4 | 6.7 | 6.7 | 11.7 |
| NOT SURE | 3 | 6 | 10.0 | 10.0 | 21.7 |
| AGREE | 4 | 26 | 43.3 | 43.3 | 65.0 |
| STRONGLY AGREE | 5 | 21 | 35.0 | 35.0 | 100.0 |
| | Total | 60 | 100.0 | 100.0 | |
| Valid cases | 60 | Missing cases | 0 | | |

Q17 felt that the criteria for evaluation was clear.

| Value Label | Value | Frequency | Percent | Valid Percent | Cum Percent |
|----------------|-------|---------------|---------|---------------|-------------|
| DISAGREE | 2 | 1 | 1.7 | 1.7 | 1.7 |
| NOT SURE | 3 | 4 | 6.7 | 6.7 | 8.3 |
| AGREE | 4 | 22 | 36.7 | 36.7 | 45.0 |
| STRONGLY AGREE | 5 | 33 | 55.0 | 55.0 | 100.0 |
| | Total | 60 | 100.0 | 100.0 | |
| Valid cases | 60 | Missing cases | 0 | | |

Q18 felt that the instructor's evaluation of the artifacts was fair.

| Value Label | Value | Frequency | Percent | Valid Percent | Cum Percent |
|----------------|-------|---------------|---------|---------------|-------------|
| NOT SURE | 3 | 2 | 3.3 | 3.3 | 3.3 |
| AGREE | 4 | 24 | 40.0 | 40.0 | 43.3 |
| STRONGLY AGREE | 5 | 34 | 56.7 | 56.7 | 100.0 |
| | Total | 60 | 100.0 | 100.0 | |
| Valid cases | 60 | Missing cases | 0 | | |

Q19 felt the assessment program used in this class was overall a valuable learning tool.

| Value Label | Value | Frequency | Percent | Valid Percent | Cum Percent |
|----------------|-------|---------------|---------|---------------|-------------|
| DISAGREE | 2 | 1 | 1.7 | 1.7 | 1.7 |
| NOT SURE | 3 | 6 | 10.0 | 10.0 | 11.7 |
| AGREE | 4 | 25 | 41.7 | 41.7 | 53.3 |
| STRONGLY AGREE | 5 | 28 | 46.7 | 46.7 | 100.0 |
| | Total | 60 | 100.0 | 100.0 | |
| Valid cases | 60 | Missing cases | 0 | | |

Q20 would like to take another course in which I was assessed this way.

| Value Label | Value | Frequency | Percent | Valid Percent | Cum Percent |
|-------------------|-------|---------------|---------|---------------|-------------|
| STRONGLY DISAGREE | 1 | 1 | 1.7 | 3.3 | 3.3 |
| DISAGREE | 2 | 1 | 1.7 | 3.3 | 6.7 |
| NOT SURE | 3 | 2 | 3.3 | 6.7 | 13.3 |
| AGREE | 4 | 10 | 16.7 | 33.3 | 46.7 |
| STRONGLY AGREE | 5 | 16 | 26.7 | 53.3 | 100.0 |
| | 9 | 30 | 50.0 | Missing | |
| | Total | 60 | 100.0 | 100.0 | |
| Valid cases | 30 | Missing cases | 30 | | |

Descriptive Statistics

| Variable | Mean | Std Dev | Minimum | Maximum | N |
|----------|------|---------|---------|---------|----|
| Q1 | 4.57 | .59 | 2 | 5 | 60 |
| Q2 | 4.42 | .77 | 2 | 5 | 60 |
| Q3 | 4.20 | .80 | 2 | 5 | 60 |
| Q4 | 4.42 | .77 | 2 | 5 | 60 |
| Q5 | 4.43 | .67 | 2 | 5 | 60 |
| Q6 | 4.34 | .86 | 1 | 5 | 59 |
| Q7 | 3.35 | 1.09 | 1 | 5 | 60 |
| Q8 | 3.42 | 1.18 | 1 | 5 | 59 |
| Q9 | 3.66 | 1.06 | 1 | 5 | 59 |
| Q10 | 4.33 | .86 | 1 | 5 | 60 |
| Q11 | 3.68 | .98 | 2 | 5 | 60 |
| Q12 | 3.20 | 1.32 | 1 | 5 | 59 |
| Q13 | 3.93 | 1.07 | 1 | 5 | 60 |
| Q14 | 4.22 | 1.06 | 1 | 5 | 60 |
| Q15 | 3.82 | 1.11 | 1 | 5 | 60 |
| Q16 | 3.97 | 1.09 | 1 | 5 | 60 |
| Q17 | 4.45 | .70 | 2 | 5 | 60 |
| Q18 | 4.53 | .57 | 3 | 5 | 60 |
| Q19 | 4.33 | .73 | 2 | 5 | 60 |
| Q20 | 4.30 | .99 | 1 | 5 | 60 |

RELIABILITY COEFFICIENTS

N OF CASES = 27.0

N OF ITEMS = 20

ALPHA = .8993