Using Instructional and Assessment Vignettes to Promote Recall, Recognition, and Transfer in Educational Psychology Courses

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Instructors have long used short descriptive stories such as vignettes as a tool to model, teach, and research behavior and understanding as well as to stimulate discussion and problem solving in learning situations. This article summarizes the results of a study comparing the effectiveness of two types of vignettes (evaluation and synthesis) as instructional tools and assessment tasks in five sections of an educational psychology course. Study results suggest that the positive effects of vignette instructional and assessment tasks on student mastery of subject matter are additive, regardless of the type of vignette. Mean quiz, assignment, and posttest scores in the two sections that received vignette instruction were significantly higher than those in sections that did not receive vignette instruction and differed only in terms of assessment style (forced-choice, summarization, and vignette). Scaffolding vignette instruction not only enhanced vignette assessment performance as a measure of transfer of course content, but also enhanced recognition and recall of course content.

Keywords: vignettes, vignette assessment, instructional strategies

Teachers have long used stories in their classrooms. Short, descriptive stories such as vignettes create contexts to situate course content and stimulate discussion. Recent research has identified the *vignette assessment task*, analyzing and evaluating a situation or analyzing and solving a problem presented in a vignette, as an effective and reliable method for identifying and assessing what and how students learn (Jeffries & Maeder, 2004). Vignettes augment the information gathered in more traditional assessments by providing a context for creative and critical thinking – this is often difficult to glean from forced-choice items, (e.g., true/false, multiple-choice, fill-in items). There is little research however that attempts to quantify the impact that vignettes have on learning. Do vignettes help learners recall and apply prior knowledge to new situations? Do vignettes assist in the transfer of learning to new contexts? Do vignettes facilitate the integration of knowledge and skills so that learners can make predictions about those new contexts?We conducted an experimental study in 2004-2005 in five sections of an educational psychology course comparing two types of vignette instructional and assessment tasks as methods to enhance and assess the learning of course content. The study also compared vignette assessment tasks with forced-choice items and summary prompts as methods to assess students' mastery of subject matter.

VIGNETTES IN EDUCATION AND RESEARCH

Stories have been used in many different forms and formats as a powerful and successful method for modeling, teaching, discussing, and researching behavior and understanding in general education, legal education, health sciences, social sciences, and behavioral sciences. Story formats include case studies, case stories, scenarios, and vignettes. *Case studies* are long narrative descriptions of real or hypothetical situations in which learners are asked to identify or solve a problem (Engle & Faux, 2006; Gideonse, 1999; Hrabe, Kinzie, & Julian, 2001; Jackson, 1998; Loughner, Harvey, & Milheim, 2001; Marsick, 1998). They are sometimes categorized under case-based learning, (see Williams, 1993, for a review of case-based learning). *Case stories* are stories that simulate the real world but are written by individuals within the classroom and told from their perspectives (Hunter & Hatton, 1998; Maslin-Ostrowski & Ackerman, 1998). *Scenarios* are narrative descriptions that contain a set of realistic assumptions and facts about the future used to provide a unified context for decision-making (International Centre for Development Oriented Research in Agriculture, n.d.; Pesonen, n.d.).

The *vignette*, a fourth type of story, has been used as a tool to model, teach, and research behavior and understanding in general education

(Campbell, n.d.; Galguera, 1998; Kruse, 1997; New Hampshire Equity Handbook Writing Team, n.d.; Pransky & Bailey, 2002; Schwartz & Riedesel, 1994; TESOL, 2001; Vaughn & Klingner, 1999; Volkmann, 1998), health sciences (Callicott, 2003; Chambers, 1999; King, Murray, Salomon, & Tandon, 2002a), social sciences (Hughes & Huby, 2002), and behavioral sciences (Richman & Mercer, 2002). Vignettes are distinguished from case stories, case studies, and scenarios in the following criteria:

- a combination of unrealistic events and real life events create vignette situations in which there is no one 'right' answer (Hughes & Huby, 2002; Campbell, n.d.)

- vignette readers are not required to have in-depth knowledge of the topics under study (Hughes & Huby, 2002)

- vignettes provide a useful focus and stimulus for discussion of difficult-to-explore and sensitive topics due to fewer complexities and personalities (Hughes & Huby, 2002; Campbell, n.d.)

- people from different backgrounds can identify with the vignette's storyline and characters and bring their own perspective forward in discussions of solutions (King, Murray, Salomon, & Tandon, 2002b; Campbell, n.d.)

- sufficient detail can be included in a vignette to avoid unwarranted assumptions, thus enabling all participants to respond to the same stimulus (Hughes & Huby, 2002; King et al., 2002b)

VIGNETTE DEFINITION AND CONSTRUCTION CRITERIA

Following previous research that united the wide range of definitions, usage, construction, testing, and examples of the vignette (Jeffries & Maeder, 2004; Kish, 2004), vignettes are defined here as *incomplete short stories that are written to reflect, in a less complex way, real-life situations in order to encourage discussions and potential solutions to problems where multiple solutions are possible*. The five criteria in this definition of the vignette are (a) it is a story; (b) it is under 200 words; (c) it simplifies a real life situation in which no participant is likely to have expertise; (d) its set of tasks is directly connected to a scoring rubric; and (e) it is purposely incomplete, either requiring *synthesis* when the plot line stops at a critical juncture and there is a problem to be solved or *evaluation* when the story's details are omitted so that multiple interpretations can be defended. See Appendix A for an example of each type of vignette.

VIGNETTE AS AN ASSESSMENT TOOL

In a previous study analyzing data collected during a six-year period in two online education courses (Jeffries & Maeder, 2004), we found a significant link between vignette assessment task quiz scores, midterm scores, and final project scores, providing preliminary evidence that vignettes are a reliable assessment tool in measuring student mastery of subject matter. Since half of the midterm items in that study were vignette assessment tasks, the strong correlation between vignette quizzes and the midterm was a measure of reliability, i.e., the scoring guide was consistently used and participants tended to perform similarly on the two assessments. Since the final project contained no vignettes but required an application of similar course content, the correlation between vignette and final project scores was a measure of construct validity, i.e., evidence that supported decisions concerning final projects and overall course grades.

Collecting evidence of recognition. Based on these findings, one issue worthy of study is to compare vignette assessment tasks to forced-choice items as methods of measuring student recognition of course content. True/false, multiple-choice, and fill-in test items are often the scapegoat examples of assessment as a missed learning opportunity, merely measuring how well test takers recognize course content with few opportunities to discuss problem-solving strategies or attempt a second try (Wolf, 1993). Yet, worthwhile work requires incubation, revision, and collaboration. Such activities may be more easily accomplished with the vignette assessment task.

Collecting evidence of recall. A second issue worthy of investigation is to compare vignette assessment tasks to summary prompts as methods of measuring student recall of course content. Summarization involves restating the essence of text or an experience in a new, yet efficient, manner (Wormeli, 2004). Perhaps the most important learning phase of summarization is the chunking and translation process (McGuire, 1999). A student may not understand sentences created for him, but he will certainly understand sentences which he himself creates (Wittrock, 1974). The translation into a personal lexicon not only internalizes content,

but may determine length of recall and transferability (Brown, Campione, & Day, 1980).

A summary assessment task consists of a prompt to trigger recall of what has been chunked and summarized during instruction. Retention of information is enhanced when students receive instruction in the rules and strategies of précis writing as well as explicit training in the monitoring of those rules and strategies (Day, 1980; Friend, 1994). Summarization enhances more free recall of information than simple note-taking, even if the note-taking process includes pauses to review the notes (Davis & Hult, 1997). However, summarization as part of writing-to-learn strategies has not been found to enhance critical thinking skills or encourage application of course content to new areas (Ashworth, 1992; Wang, 2001).[1] A comparison of vignette and summary assessment tasks is therefore warranted.

VIGNETTE AS AN INSTRUCTIONAL TOOL

Herman's (1998) vignette research, involving a written description, photograph, or videotaped scene as a brief glimpse of an educational situation, found that vignettes can be used as an instructional tool to help pre-service teachers apply theoretical constructs and research findings to classroom situations. Although his use of vignettes involved lengthy stories and a treatment over several class sessions, a logical extension of the study of the vignette as an assessment tool is the inclusion of the *vignette instruction task*, i.e., an investigation of the effect of incorporating vignettes into the instructional process. It is expected that the positive effects of teaching and assessing via vignettes are additive. Learners who make connections between course content and new contexts during instruction and assessment are likely to forge a more organized and robust knowledge base.

Scaffolding vignette instruction. The vignette instruction task adds a scaffolding component to the learning process. In Clark and Graves' (2005) description of one form of the instructional scaffolding model, the instructor first models the skill to be learned, providing the necessary instruction. The instructor gradually releases responsibility for learning through guided practice, which includes moment-to-moment verbal scaffolding. Finally, the learners work collaboratively in small groups, summarizing, questioning, clarifying, and predicting with less frequent instructor assistance. This procedure is a form of Palinscar and Brown's (1984) reciprocal teaching model.

Scaffolding vignette instruction tasks to collect evidence of transfer. Transfer has been defined as "the effect that knowledge that was learned in a previous situation (task A) has on learning or performance in a new situation (task B)" (Mayer & Wittrock, 1996, p. 48). Educators are hopeful that students will show evidence of transfer in a variety of situations: from one problem to another within a course, from one course to another, and from school to work. Studies show that information presented in the context of solving problems is more likely to be spontaneously used than information presented in the form of simple facts, particularly if the problem-solving instruction involves the use of concrete examples where concepts are presented in multiple contexts (Gick & Holyoak, 1983).

It is possible that evidence of transfer could be collected on vignette assessment tasks if vignettes were properly scaffolded to include appropriate modeling and group problem-solving activities during instruction. First, it appears that modeling the cognitive processes during problem solving leads to improved performance on a transfer task (Pedersen & Liu, 2002; Bransford, Brown, & Cocking, 1999). More effective than simply giving tips or explaining how tools function, having an expert think aloud as he/she engages in problem-solving tasks provides the type of support that enhances students' performances in novel problem situations. Increasing the degree of comparison support between two problem-solving tasks further increases the rate of transfer (Gentner, Loewenstein, & Thompson, 2003). Students learn by drawing comparisons across examples and cases.

Second, it appears that group interaction enhances transfer of learning. Olivera and Straus (2004) noted that students who had either participated in group problem solving or observed others engaged in group problem solving were subsequently able to solve problems more successfully than their counterparts who simply solved problems on their own beforehand.

[1] Although the summary assessment primarily collects evidence of recall of information, it should be noted as well that the test taker is no doubt reminded of course content by the summary task's instructions, so that the summary assessment also collects evidence of recognition.

The vignette instruction task and subsequent assessment task mesh well with Bransford and Schwartz's (1999) perspective that assessments should be dynamic to measure the degree to which people's past experiences have prepared them for future learning. Vignettes encourage reflection and rehearsal from multiple perspectives – hence the dynamic nature of vignette tasks– but their context is sufficiently pertinent to collect evidence of mastery of course content and transfer.

Therefore, four research questions that emerge from this review of literature are: (1) Do vignette assessment tasks promote recognition, recall, and transfer of course content? (2) To what degree will scaffolding vignettes during instruction enhance recognition, recall, and transfer as measured by forced-choice, summary, and vignette assessment task performance? (3) What differences in student learning outcomes can be observed using vignette assessment tasks vs. forced-choice items or summarization tasks? and (4) What are the differences, if any, of teaching and assessing with evaluation vs. synthesis vignettes?

METHOD

PARTICIPANTS

Data were collected in 2004-2005 from participants in five sections of a west-coast public university educational psychology course. Participants (n = 93) consisted of graduate students in a teacher credential program. Approximately one-third of the participants were employed school teachers, either part-time or full-time. All had experience working with children in education settings, e.g., substitute teaching, tutoring, working as teacher aides. The course content, readings, and technology in the five sections were identical. Course topics included learning, motivation, development, teaching models, and the application of theory to adolescent education. All of the sections were taught by the same instructor.

PROCEDURE

The five sections were randomly assigned a different treatment condition: Forced-Choice group (n = 26), Summary group (n = 16), Vignette-only group (n = 18), Evaluation group (n = 18), and Synthesis group (n = 15). The sections differed only in the type of vignette instruction (evaluation, synthesis, and none) and quiz assessment tasks (vignette, summary, and forced-choice) used to measure student mastery of subject matter.

Instruction. The Forced-Choice group received no instruction on how to complete true/false and multiple-choice items. Participants in the Summary group were given a 45-minute demonstration of the précis method of summarizing text passages during the second class meeting. The instructor provided an overview of the chunking process and summarized a sample passage using participants' suggestions. The participants individually completed a second example and shared their summaries in pairs, followed by a class discussion concerning their summaries and the scoring guide. Summary group participants were encouraged to summarize readings and lectures throughout the course and were required as part of their participation grade to submit quick-write summaries of course readings at various junctures during the semester. No further instruction concerning summarizing was provided. Participants in the Forced-Choice group read and discussed the same two sample passages during their second class meeting.

Vignette-only group participants were given a 45-minute demonstration of how to complete a vignette assessment task at the second class meeting. The instructor first provided a vignette definition and scoring guide, completed a sample vignette task with the class, and evaluated the generated response according to the scoring guide. The participants then paired off to complete a second vignette on a different topic while incorporating instructor feedback. The class discussed and critiqued exemplary responses generated by participants. They were reminded to define terms, cite clues in the vignette, and refer to class readings when defending their vignette responses. No further instruction concerning vignettes was provided to Vignette-only group participants.

Evaluation and Synthesis group participants completed vignette instruction and assessment tasks throughout the semester. In the Evaluation group, all vignettes involved a hypothetical educational problem and solution to be analyzed and evaluated. In the Synthesis group, all vignettes involved a hypothetical educational problem to be analyzed and solved. Participants in each group were given a 45-minute demonstration similar to what Vignette-only group participants received on how to complete the vignette assessment task that

matched their treatment condition at the second class meeting.

In subsequent sessions, Evaluation and Synthesis group participants were introduced to each of eight course topics through vignettes. Four of the eight instructional vignettes were presented in class, first as participants paired off to complete the vignette task with occasional instructor feedback and then as an entire class discussing and analyzing exemplary responses. The remaining four instructional vignettes were presented online during weeks when the class did not meet on campus. Participants were required to e-mail individual vignette responses to the instructor in order to receive individual feedback. Following the first online vignette task, a class discussion during the next on-campus session was held to review posted vignette responses. During the second online vignette task, participants received a posted generic critique from the instructor to the entire class. Following the third online vignette task, the instructor posted three exemplary responses on an online discussion board for the entire class to review. As part of the fourth online vignette task, the instructor created and posted an inaccurate and incomplete vignette response that participants were required to revise and complete during the week. Sample exemplary responses and explanations of inaccuracies were later posted for student review.

MEASURES

Pre- and posttest. To collect evidence that the 93 participants were drawn from the same student population, participants completed a pretest during the first class meeting that consisted of ten forced-choice items, a summarization task, and two vignette tasks related to course content. During the final week of the semester, participants completed a posttest identical to the pretest to address the first and second research questions and collect evidence of recognition (forced-choice items), recall (summarization task), and transfer (vignette tasks). Posttest scores as well as the three posttest subscores were compared across the five treatment groups to determine if the positive effects of vignette instruction and assessment tasks were additive and to what degree.

Quizzes. Four quizzes were administered during the semester to address the third and fourth research questions and compare forced-choice, summary prompt, and vignette performances when collecting evidence of mastery of course content, (see Appendix A for examples of forced-choice, summary, and vignette quiz items). The Forced-Choice group completed quizzes consisting of ten true/false, multiple-choice, and fill-in items related to course topics taken from the course readings and lectures, (see Table 1 for the sequence and description of all assessments in the study).

TABLE 1

ASSESSMENT SEQUENCE

Class Meeting	Assessment	Description
1	Pretest	(forced-choice, summary, vignette items)
6	Quiz 1	(observational/vicarious learning, neurocognition/memory)
9	Quiz 2	(scaffolding, teen cognition)
10	Case Study	(teen and adult interviews)
12	Quiz 3	(locus of control, self-regulation)
14	Quiz 4	(principle of least intervention, cooperative learning)
16	Lesson Analysis	(observation, teacher interview)
16	Posttest	(forced-choice, summary, vignette items)

Note: Quiz assessment type corresponded to each group's treatment condition. The remaining assessments were identical in all five groups.

The Summary group completed quizzes consisting of two prompts to summarize (from memory) the same course topics assessed in the forced-choice quizzes. Each prompt included key phrases relevant to the topic to promote recall. Quiz responses were scored by both researchers using a ten-point scoring guide based on presentation, accuracy, scope, and summary (see Appendix B). The summary assessment tasks were used to

measure recall of course content and to a lesser extent, recognition of course content.

The Vignette-only group completed quizzes consisting of two vignettes, one evaluation and one synthesis, related to the same course topics that were assessed in the forced-choice and summary prompt quizzes. Each vignette included a story and a set of tasks intended to promote transfer of course content to a new situation. In the evaluation vignette assessment task, participants were asked to evaluate how effectively a vignette character was incorporating teaching and learning strategies in light of implications from adolescent learning theory. In the synthesis vignette assessment task, participants were asked to use implications from adolescent learning theory to solve a hypothetical teaching or learning problem related to a specific course topic. Each vignette's description was purposely vague so that various interpretations were possible, allowing participants to find clues in the vignette in order to defend their interpretation with references back to course lectures and readings. Quiz responses to each vignette were scored by both researchers using the same ten-point scoring guide used when scoring summary assessments. The vignette assessment tasks were used to measure recognition, recall, and transfer.

Each quiz administered to the Evaluation group consisted of two evaluation vignettes related to two topics taken from the course readings and lectures. In the Synthesis group, each quiz consisted of two synthesis vignettes related to the same topics assessed in the Evaluation group. In both groups, the quiz vignettes dealt with the same topics as the instructional vignettes but in different contexts.

***Assignments*.** The final two assessment tasks addressed the transfer aspect of the first research question by measuring the application of course content to new educational settings. A mid-semester case study evaluation task required participants to conduct interviews with an adolescent and an adult who knew the adolescent and then write an evaluation paper. The assignment was used to evaluate how well participants were able to identify the adolescent's cognitive and social development. The second assignment required participants to observe and analyze a public school teacher's implementation of a lesson. This classroom lesson evaluation was used to measure how well participants were able to apply course content to a specific classroom context. All of the participants in the study completed both assignments.

Course-ending survey. An anonymous course-ending survey was administered to the Evaluation and Synthesis groups to address the fourth research question concerning perceived differences, if any, between evaluation and synthesis vignettes. The survey was also intended to collect evidence of reliability that vignette instruction tasks were conducted consistently across the two groups. Participants were asked to respond to nine questions about vignette instruction and assessment tasks. Eight of the survey items used five-point Likert-type scales to record responses to questions concerning the effect of practice with vignette quizzes, comparisons to more traditional assessments, transfer of course content, time spent studying, and their teaching experience. The ninth item asked participants to rank various vignette-related activities in terms of difficulty. All nine survey items included space for comments.

RESULTS

The pretest was administered to collect evidence that participants in the five groups were drawn from the same student population. Mean pretest percentage scores in the Forced-Choice group (M = 41.15, SD = 7.54) were not significantly different from those in the Summary group (M = 42.08, SD = 7.59), Vignette-only group (M = 39.63, SD = 6.75), Evaluation group (M = 38.89, SD = 7.05), or Synthesis group (M = 40.00, SD = 5.63), $F(4, 93) = 0.58$, $p = .68$, (see Table 2 for mean pretest and posttest scores and subscores).[2]

POSTTEST DATA

The posttest was administered to address the first and second research questions by collecting evidence of recognition (forced-choice items), recall (summarization task), and transfer (vignette tasks) and measuring the effect of scaffolding vignettes during instruction. The main effect of assessment type on the posttest scores was statistically significant, $F(4, 93) = 11.70$, $p < .0001$. The Forced-Choice group's mean posttest score was significantly lower than those of the other four groups. The Summary group's mean posttest score was significantly lower than those of the Evaluation and Synthesis groups. No other group posttest score comparisons were significant.

[2] An alpha level of .05 was used for all statistical tests.

The fan effect of improvement from pretest to posttest across the five groups is illustrated in Figure 1. The Synthesis group posted the largest mean score increase (+36 points), followed by the Evaluation group (+35 points), the Vignette-only group (+29 points), the Summary group (+21 points) and the Forced-Choice group (+11 points).

FIGURE 1. ***MEAN PRETEST AND POSTTEST PERCENTAGE SCORES***

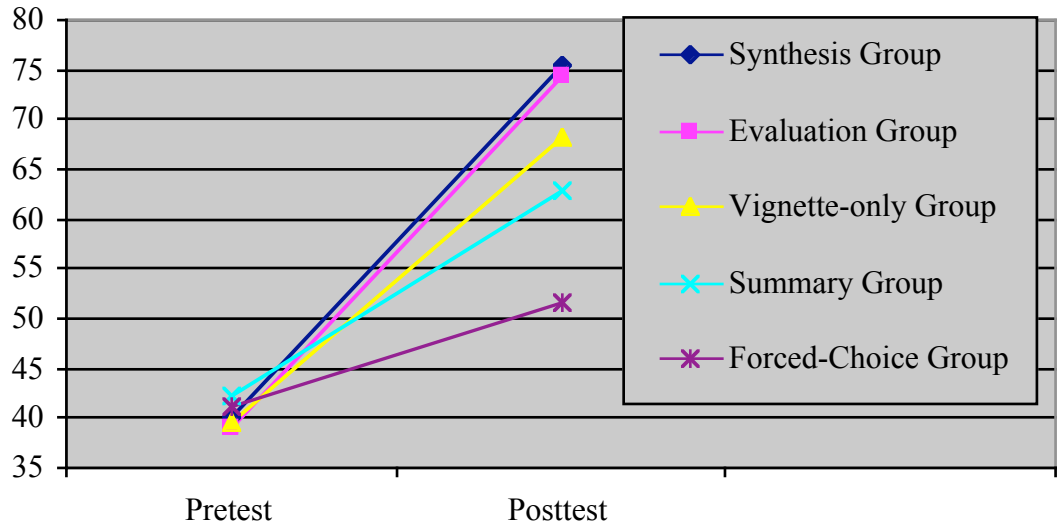


TABLE 2

MEAN PRETEST AND POSTTEST PERCENTAGE SUBSCORES

Group	Forced-Choice	Summary	Vignette	Pretest Total
Forced-Choice (*n*=26)	57.69	56.92	8.85	41.15
Summary (*n*=16)	59.38	60.63	6.25	42.08
Vignette-only (*n*=18)	56.11	58.33	4.44	39.63
Evaluation (*n*=18)	55.56	59.44	1.67	38.89
Synthesis (*n*=15)	62.00	57.33	0.67	40.00
Combined (*n*=33)	58.49	58.48	1.22	39.39
All Groups (*n*=93)	57.96	58.39	4.84	40.39

Group	Forced-Choice	Summary	Vignette	Posttest Total
Forced-Choice (*n*=26)	79.23	57.69_a	17.31_a	51.67_a
Summary (*n*=16)	83.75	67.50_a	37.50_b	62.92_b
Vignette-only (*n*=18)	83.33	62.78_a	58.33_c	68.15_c
Evaluation (*n*=18)	84.44	79.44_b	58.89_c	74.26_c
Synthesis (*n*=15)	77.33	80.00_b	69.33_c	75.56_c
Combined (*n*=33)	81.21	79.69_b	63.64_c	74.85_c
All Groups (*n*=93)	81.51	68.17	45.16	65.02

Note: The *Combined* row represents the merging of the Evaluation and Synthesis groups' data. Scores with different subscripts in the same *column* are significantly different at the .05 level.

Posttest subscore data. We also examined subscores from the three types of assessment on the posttest: forced-choice, summary, and vignette items. The main effect of assessment type on the *forced-choice* items of the posttest was not statistically significant. The main effect of assessment type on the *summary* items of the posttest was statistically significant, $F(4, 93) = 9.49$,

$p < .0001$. Mean posttest summary subscores in the Forced-Choice, Summary, and Vignette-only groups were significantly lower than those in the Evaluation and Synthesis groups, (see Table 2). No other group posttest summary subscore comparisons were significant.

The main effect of assessment type on the *vignette* items of the posttest was also statistically significant, $F(4, 93) = 17.58$, $p < .0001$. The Forced-Choice group's mean posttest vignette subscore was significantly lower than that of the Summary group, which was in turn significantly lower than those in the Vignette-only, Evaluation, and Synthesis groups, (see Table 2). No other group posttest vignette subscore comparisons were significant.

The main effect of assessment type on the posttest across the five groups was primarily attributed to the vignette portion of the posttest. Specifically, 23 points of the Synthesis group's 36-point increase from pretest to posttest was attained in the vignette items, i.e., the vignette items accounted for 64% of the Synthesis group's increase from pretest to posttest. Similarly, 19 points of the Evaluation group's 35-point increase from pretest to posttest was attained in the vignette items (54%) and 18 points of the Vignette-only group's 29-point increase from pretest to posttest was attained in the vignette items (62%). The influence of the vignette items was less pronounced in the non-vignette groups' posttest scores: only 10 points of the Summary group's 21-point increase (48%) and 4 points of the Forced-Choice group's 11-point increase (36%) were due to vignette items.

Table 3 illustrates how the Evaluation and Synthesis groups' posttest subscores reflected a more balanced performance than those in the other three groups. The forced-choice, summary, and vignette posttest items each constituted approximately one-third of the posttest score in the Evaluation and Synthesis groups. The Forced-Choice and Summary groups and, to a lesser extent, the Vignette-only group scored half or nearly-half of their points on the forced-choice items on the posttest.

TABLE 3

PERCENTAGE CONTRIBUTION OF POSTTEST SUBSCORES

Group	Forced-Choice	Summary	Vignette	Posttest Total
Forced-Choice (*n*=26)	51%	38%	11%	100%
Summary (*n*=16)	44%	36%	20%	100%
Vignette-only (*n*=18)	41%	31%	28%	100%
Evaluation (*n*=18)	38%	36%	26%	100%
Synthesis (*n*=15)	34%	35%	31%	100%
Combined (*n*=33)	36%	36%	28%	100%

Note: The *Combined* row represents the merging of the Evaluation and Synthesis groups' data.

QUIZ DATA

Four quizzes were administered during the semester to address the third research question by comparing forced-choice, summary, and vignette performances when collecting evidence of mastery of course content. The quizzes represented the only difference in assessment type across the five groups. The quizzes were also administered to investigate the effect of the type of vignette instruction (evaluation, synthesis, none) on mastery of course content.

The main effect of assessment type on Quiz 1 scores, $F(4, 93) = 16.00$, $p < .0001$, and Quiz 2 scores, $F(4, 93) = 3.55$, $p < .01$, was statistically significant. Mean Quiz 1 and mean Quiz 2 scores were grouped into three statistically different categories. The Synthesis group's mean Quiz 1 and 2 scores were significantly higher than those in the Evaluation and Forced-Choice groups, which were in turn significantly higher than those in the Vignette-only and Summary groups, (see Table 4).

The main effect of assessment type on Quiz 3 scores was statistically significant, $F(4, 93) = 13.33$, $p < .0001$, and the following pattern was observed:

mean Quiz 3 scores in the Synthesis, Evaluation, and Forced-Choice groups were significantly higher than that of the Vignette-only group, which was in turn significantly higher than that of the Summary group.

The main effect of assessment type on Quiz 4 scores was statistically significant, $F(4, 93) = 2.90$, $p < .03$, with the following pattern: mean Quiz 4 scores in the Synthesis and Evaluation groups were significantly higher than those in the Summary, Forced-Choice, and Vignette-only groups. Finally, mean *composite* quiz scores across the five groups ranked the Synthesis group first, followed by the Evaluation and Forced-Choice groups, and all three groups' mean composite quiz scores were significantly higher than those in the Vignette-only and Summary groups (see Figure 2 for illustrations of all quiz scores).

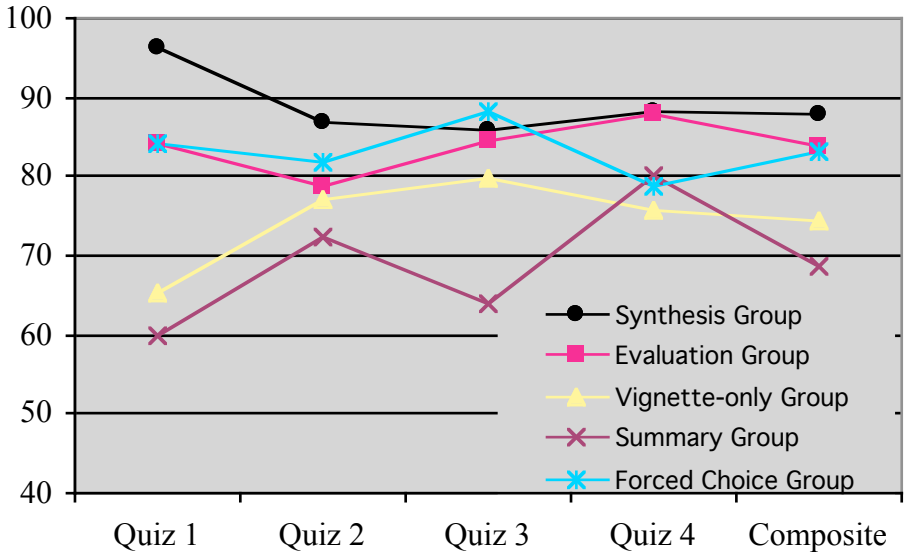
TABLE 4

MEAN QUIZ AND ASSIGNMENT PERCENTAGE SCORES

Group	Quiz 1	Quiz 2	Quiz 3	Quiz 4	Case Study	Analysis
Forced-Choice (*n*=26)	84.04_a	81.92_a	88.08_a	78.85_a	87.03	90.44_a
Summary (*n*=16)	60.00_b	71.25_b	63.75_b	80.00_a	88.93	82.32_b
Vignette-only (*n*=18)	62.67_b	77.22_a	79.72_c	75.83_a	85.40	90.48_a
Evaluation (*n*=18)	84.17_a	78.61_a	84.44_a	87.78_b	86.67	90.48_a
Synthesis (*n*=15)	91.33_c	86.67_c	85.67_a	88.33_b	91.81	93.71_a
Combined (*n*=33)	87.42_c	82.27_c	85.00_a	88.03_b	89.00	91.95_a

Note: The *Combined* row represents the merging of the Evaluation and Synthesis groups' data. Scores with different subscripts in the same *column* are significantly different at the .05 level.

FIGURE 2. ***MEAN QUIZ PERCENTAGE SCORES.***



Quiz data sorted by amount and type of vignette instruction. The study's second research question was also intended to measure the effect of scaffolded vignette instruction on quiz performance. Results from the Evaluation and Synthesis groups were therefore combined and compared to the

Vignette-only group, which did not receive scaffolded vignette instruction and completed both types of vignette assessment tasks. For three of the four quizzes, the composite mean quiz score was significantly higher than that of the Vignette-only group (see Table 4).

Vignette quiz subscore data. Since each quiz consisted of two vignettes addressing separate

topic areas, it was possible that the vignette topic may have been a factor in the significant quiz score differences. We therefore examined vignette scores by topic in the four quizzes in the Evaluation, Synthesis, and Vignette-only groups. The vignettes' eight topics and mean scores for the three groups are listed in Table 5. Since the Synthesis and Evaluation groups' mean vignette scores were consistently higher than that of the Vignette-only group for all eight topics and the Synthesis mean vignette score was higher than that of the Evaluation group for six of the eight topics, it does not appear that the vignette topic was a significant factor in quiz score differences. We also examined subscore data for each of the eight quiz vignettes, i.e., the presentation, accuracy, scope, and defense components of the ten-point scoring guide, in an effort to determine if there were any patterns exhibited by participants in any of the three vignette-related groups when completing the vignettes. None of the *presentation* or *accuracy* subscores for any of the vignettes across the three groups were significantly different. Mean vignette score differences were attained exclusively in the *scope* and *defense* components of the scoring guide.

ASSIGNMENT DATA

The Case Study and Lesson Analysis assignments addressed the transfer aspect of the first research question by measuring the application of course content to new educational settings. The main effect of assessment type on Case Study assignment scores was not statistically significant across the five groups, (see Table 4). The main effect of assessment type on Lesson Analysis scores was statistically significant, $F(4, 93) = 5.70$, $p < .001$. The Summary group's mean Lesson Analysis score was significantly lower than those in the other four groups. No other group Lesson Analysis score comparisons were significant. Intercorrelations between Case Study and Lesson Analysis assignment scores were significant, $r=.27$, $p < .01$.

COURSE-ENDING SURVEY DATA

In the anonymous course-ending survey, a majority of the participants in the Evaluation and Synthesis groups reported that practice vignettes, (in-class and online), helped to increase their understanding of course material. Nearly all reported that vignette quizzes accurately assessed their understanding of course material and rated vignettes better at assessing understanding of course material than traditional forced-choice quizzes. All of the participants reported that vignettes, both instructional and quiz, helped them transfer their understanding of course material to new situations. Participants reported that they spent an average of three hours per week preparing for each weekly class meeting and all reported that studying for, taking, and reviewing vignettes helped them learn the course material. Mean reported teaching experience was 1.3 years in the Evaluation group and 1.9 years in the Synthesis group.

Participants in both groups ranked analyzing situations/solving problems as the most difficult aspect of completing vignettes. After analyzing situations, the Evaluation group ranked the following components in order of decreasing difficulty: defining terms, defending responses, relating vignette clues to course material, and finding clues. After problem solving, the Synthesis group ranked the following components in order of decreasing difficulty: defending responses, relating vignette clues to course material, defining terms, and finding clues.

TABLE 5

MEAN QUIZ PERCENTAGE SUBSCORES

Quiz	Vignette Topic	Vignette-only (n = 18)	Group Evaluation (n = 18)	Synthesis (n = 15)
Quiz 1	Observational / Vicarious Learning	58.89_a	85.56_b	90.67_b
	Neurocognition / Memory	71.67_a	82.78_b	91.33_c
Quiz 1 Total		65.28_a	84.17_b	91.33_c
Quiz 2	Scaffolding	76.11_a	77.22_a	85.33_b
	Teen Cognition	78.33	81.11	88.00
Quiz 2 Total		77.22_a	78.61_a	86.67_b
Quiz 3	Locus of Control	79.44	84.44	78.00
	Self-regulation	80.00_a	84.44_a	93.33_b
Quiz 3 Total		79.72_a	84.44_a	85.67_b
Quiz 4	Principle of Least Intervention	78.33_a	93.33_b	94.67_b
	Cooperative Learning Groups	73.33	82.22	82.00
Quiz 4 Total		75.83_a	87.78_b	88.33_b
All Quizzes		74.51_a	83.75_b	88.00_b

Note: Scores with different subscripts in the same *row* are significantly different at the .05 level.

Many participants remarked that they understood the course content much more clearly following the vignette quizzes, noting that the extra work involved in learning new content via vignettes, practicing with them, and later completing vignette quizzes was well worth the effort. Here are four sample comments, (the first two from the Evaluation group and the second two from the Synthesis group):

Participant A: “The vignette[s] served as a very practical instructional activity because they related text methodology to actual educational situations.”

Participant B: “Vignettes are better because you can have more than one right answer and are given the chance to elaborate.”

Participant C: “I think that I retained more than I would have otherwise. I think that they are very helpful because you remember the situation and the information that you have learned.”

Participant D: “Vignettes are a nice way to put yourself in a teaching role and hypothesize effective teaching strategies.”

DISCUSSION

The examination of the results of five sections of an educational psychology course that differed only in terms of type of vignette instruction (evaluation, synthesis, none) and type of assessment (forced-choice, summary, vignette) indicates that the two groups that received scaffolded vignette instruction and completed vignette assessment tasks consistently outperformed the three groups that did not receive scaffolded vignette instruction. The Evaluation and Synthesis groups each scored consistently higher than the Summary and Vignette-only groups across all assessment tasks and higher than the Forced-Choice group in all but two assessment tasks.

Findings and implications relevant to the study’s research questions follow.

THE EFFECT OF SCAFFOLDED VIGNETTE INSTRUCTION ON RECOGNITION, RECALL, AND TRANSFER

To address the first research question and collect evidence of recognition (forced-choice items), recall (summarization task), and transfer (vignette tasks), posttest scores across the five groups were graphed and compared. This resulted in a fan effect where completing forced-choice assessment items during the semester produced modest gains from pretest to posttest, completing summary assessment tasks produced more

significant gains, completing vignette assessment tasks produced even greater score increases, and completing vignette instruction and assessment tasks produced the greatest score increases. Recognition, recall, and transfer of course content were enhanced significantly by the additive effects of scaffolded vignette instruction and vignette assessment tasks.

Posttest subscore analyses and implications. All five groups showed significant improvement on the *forced-choice* items from pretest to posttest. The Evaluation and Synthesis groups posted significant gains on the *summary* items from pretest to posttest, the Summary group posted modest gains, and the Forced-Choice and Vignette-only groups posted only marginal gains. As expected, the Evaluation and Synthesis groups posted their greatest score increases on the *vignette* items from pretest to posttest, far greater than those posted by the Forced-Choice, Summary, and Vignette-only groups.

Moreover, Evaluation and Synthesis group participants posted scores with a balanced contribution from the three subsections of the posttest. The forced-choice, summary, and vignette posttest items accounted for 36%, 36%, and 28%, respectively, of their combined posttest score. The implication is that vignette instruction and assessment tasks combined to prepare participants for all three types of measures on the posttest: recognition (forced-choice items), recall (summary items), and transfer (vignette items). It was possible that scaffolding vignette instruction would only enhance vignette assessment task performance, since participants in the Evaluation and Synthesis groups received no instruction on completing forced-choice or summary items. This across-the-board enhancement on the posttest was not observed in the Forced-Choice or Summary groups; participants in those groups only improved on the posttest section (recognition and recall, respectively) on which they practiced during the semester.

Four findings emerge from the posttest subscore analysis: (a) forced-choice quizzes prepared the Forced-Choice group participants only for posttest recognition items; (b) summary quizzes prepared the Summary group participants for posttest recognition and recall items; and (c) vignette quizzes prepared the Vignette-only group participants for posttest recognition, recall, and transfer items; (d) scaffolded vignette instruction tasks, (which included additional practice), followed by vignette assessment tasks, significantly enhanced Evaluation and Synthesis group participants' performance on all three types of posttest measures.

***Quiz score analyses and implications*.** In our previous study, it was noted that it was not until the second assessment that participants were successfully able to complete a vignette assessment task (Jeffries & Maeder, 2004). This finding was replicated in the present study by the Vignette-only group, whose Quiz 1 scores were significantly lower than those in the Forced-Choice group, yet their Quiz 2, 3, and 4 scores were not significantly different from those in the Forced-Choice group. Moreover, Evaluation and Synthesis group quiz scores were consistently higher than those in the Vignette-only and Summary groups and higher than those in the Forced-Choice group in three of the four quizzes. Since participants in the Evaluation and Synthesis groups completed vignette instruction tasks that included practice with vignettes during the session prior to each quiz, they were immediately able to outperform all other participants on the four quizzes. The fact that participants learn even more quickly how to successfully complete vignette assessment tasks when vignette instruction and practice are scaffolded beforehand facilitates the incorporation of vignettes into instruction and assessment plans. Vignettes quickly become effective teaching and testing tools for the instructor.

Successively removing more and more worked-out solution steps (fading) during the scaffolding of vignette instruction tasks apparently helped learners transition from relying on examples to independent problem solving on near-transfer tasks.[3] The vignette instruction tasks included modeling of problem-solving behavior by the instructor, followed by collaborative practice, partially worked-out solutions, and individual feedback. The vignette assessment tasks included detailed prompts in the instructions to encourage the students to identify connections in the new vignette to prior content and the vignette instruction tasks (near transfer). This coincides with Atkinson, Renkl, and Merrill's (2003) finding that adding prompts to encourage learners to identify the underlying principles illustrated in the worked-out solution steps during the fading process was reliably effective on near-transfer tasks without prolonging learning time.

[3] In this context, an evaluation vignette includes a problem-solving task.

On the other hand, Summary group quiz scores were significantly lower than those in the Evaluation and Synthesis groups (all four quizzes), Forced-Choice group (three out of four quizzes), and Vignette-only group (two out of four quizzes). Apparently, participants in the Summary group needed more practice to learn how to successfully complete a summary assessment task, confirming Friend's (1994) recommendation that summary writing techniques be taught over a longer period of time in order to be effective.

Assignment analyses and implications. The Case Study and Lesson Analysis assignments also addressed the transfer aspect of the first research question by measuring the application of course content to new educational settings. Case Study assignment scores across the five groups were not significantly different, which suggests that the amount or type of vignette instruction had little to no effect on case study assignment performance. The lack of effect of vignette instruction on Case Study assignment scores may be due to a timing issue – the scaffolded vignette instruction was only halfway completed when the mid-semester Case Study assignment was due – or to the fact that the Case Study assignment was only intended to measure how well a participant was able to identify one adolescent's cognitive and social development, a narrow and specific content domain making transfer more difficult to observe.

Lesson Analysis scores in the Evaluation and Synthesis groups were not significantly different, but were significantly higher than those in the Summary group. These findings suggest that although the type of vignette instruction had little to no effect on lesson analysis performance, the amount of vignette instruction was a salient factor: participants were able to apply a large amount of course content to a specific classroom context after working with vignettes all semester. The weak correlation between the two assignments further strengthen the implication that summary assessment tasks enhance recognition and recall of course content (case study assignment), whereas practice with vignettes, both during instruction and during assessments, promote transfer of course content to new contexts (lesson analysis assignment).

TEACHING AND ASSESSING WITH EVALUATION VS. SYNTHESIS VIGNETTES

To address the fourth research question, Evaluation and Synthesis group performances were compared. The Evaluation group received instruction and later completed quizzes concerning the analysis and evaluation of hypothetical teaching situations. The Synthesis group received instruction and later completed quizzes concerning hypothetical teaching problems to be analyzed and solved. Although Synthesis group participants scored higher than their Evaluation group counterparts across all assessments, significant differences were observed on only the first two quizzes. Since the vignettes presented typical classroom scenarios, the higher scores in the Synthesis group may have been a result of classroom teaching experience, (on average, participants in the Synthesis group had six months more experience than their Evaluation group counterparts). There does not yet appear to be any evidence that synthesis vignettes are pedagogically preferable to evaluation vignettes when used in instruction or assessment.

Course-ending survey analyses and implications. Results from this study provide additional support to the notion that completing vignette assessment tasks is an episode of learning in and of itself (Jeffries & Maeder, 2004). The similarity of course-ending survey responses in the two groups is an indicator of reliability concerning how the study was conducted and how vignettes were perceived. Participants in both groups found the vignettes helpful, valuable, better than forced-choice, and effective for instruction and assessment. Perhaps not surprisingly, they ranked the task of evaluating a solution to a problem in a story – or solving a problem in a story – most difficult. Evaluation group participants identified the defining of terms, a skill required when analyzing and evaluating a vignette, as the second-most difficult task while Synthesis group participants identified defending responses, a skill required when solving a problem.

SUGGESTIONS FOR FURTHER STUDY

Based on these initial results we believe the vignette to be a highly effective instructional and assessment tool that provides a rich learning experience and promotes recognition, recall, and transfer of teacher understanding. We agree with Richman and Mercer's (2002) view of the vignette assessment task as a flexible and fertile component to complement more traditional forms of assessment of content or skill mastery and we

extend the effective application of the vignette to encompass instruction as well.

One trend worthy of further investigation is a comparison of evaluation vignette instruction incorporating synthesis vignette assessment tasks with synthesis vignette instruction incorporating evaluation vignette assessment tasks. Goldstone and Son (2005) note that transfer is better when problem-solving tasks differ, that is, when the elements of the second task are different from the first but are governed by the same principles. By juxtaposing evaluation skills with synthesis skills, the best transfer may be observed when originally concrete elements become idealized, that is, the elements switch from vignette to vignette, prompting more general schemas such that the schemas are multiply instantiated. "Progressive idealization (concreteness fading) allows originally grounded and interpretable principles to become less tied to specific contexts and hence more transferable" (Goldstone & Son, 2005, p. 69).

Second, we suggest a comparison of vignette assessment tasks with reflective papers based on participant classroom observation, since many teacher education programs require their candidates to complete a significant number of hours of observation at local schools. Such a study would measure the broadest form of transfer by providing the means to determine whether vignette instruction enhances the application of course content to actual classroom observations as measured by the students' subsequent reflective essays. The resultant transfer would hopefully continue when participants later teach in their own classrooms.

Third, since we encourage the use of multiple vignettes both to teach and assess the same course content, we suggest a reliability study concerning the vignette scoring guide to collect evidence that participants perform similarly when completing two or more vignettes on the same topic. Fourth, the skill of vignette writing is worthy of study, since the instructor who plans to use vignettes must know how to create a storyline and set of tasks that reliably connect a new context to participants' prior knowledge. Just as the construction of a good multiple-choice item or summary prompt is an art, writing a good vignette may require extensive practice and training.

By their very nature, vignette tasks require learners to transfer their learning to new situations and in so doing integrate their knowledge and skills well enough to make predictions about those new contexts. Making instruction and assessment activities episodes of learning that encourage recognition, recall, and transfer of learning provides a wonderful balance to the more traditional forms of instruction and assessment. We believe that vignettes are worth the extra time to develop and administer because our students learn more when completing them and we learn more about what our students understand.

APPENDIX A

SAMPLE FORCED-CHOICE QUIZ ITEMS

(1) Which one of the following statements would most likely be made by a student suffering from learned helplessness?

_____ My teacher doesn't teach the material correctly.
_____ I treat myself well but my parents treat me poorly.
_____ It doesn't matter what I do.
_____ If I try harder, I can succeed.

(2) True (T) or False (F)

_____ Teachers can assume that when students master a skill or concept during one activity in the classroom, they will automatically be able to apply the skill or concept to a different setting or situation.

SAMPLE SUMMARY QUIZ ITEM

Write a summary (in no more than 10 sentences) of locus of control. Be sure to address internal and external loci of control, effort, ability, motivation, success, failure, and self–efficacy.

SAMPLE EVALUATION VIGNETTE QUIZ ITEM

Lax B. Havure's fourth-period wood shop class at Slacker City Middle School was known as the rowdiest class in the school. Mr. Havure did not begin class formally but simply worked at the lathe as the students entered the room. After screaming at the class and handing out a few detention slips, Mr. Havure tried to discuss the day's project but was drowned out by loud bullies playing keep-away with the only copy of the project instructions. The frequency of safety violations, injuries, and detentions was twice that of the other shop classes combined. With the assistance of the vice-principal of discipline, Mr. Havure is planning to incorporate the following changes:

(a) greet the students at the door before class and institute an assigned seating arrangement;
(b) place copies of the current project instructions at every student's work station;
(c) review shop safety practices;
(d) review and implement consequences of rules violations;
(e) complete the first project step-by-step so that no student lags behind;
(f) praise students who are working effectively;
(g) move closer to disruptive students to help them refocus; and
(h) moderate the classroom banter, always steering it back to project-related comments and questions while the students work.

Complete the following task:

Analyze at least THREE of the ways Lax B. Havure has tried to improve his classroom management skills. Be sure to relate your answer to the principle of least intervention (prevention, cues, praise, reminders, and consequences). Defend your answer with clues in the vignette, references to this week's readings, or assumptions that you have made.

SAMPLE SYNTHESIS VIGNETTE QUIZ ITEM

Lax B. Havure's fourth-period wood shop class at Slacker City Middle School is notorious for being the rowdiest class in the school. The frequency of safety violations, injuries, and detentions is twice that of the other shop classes combined. The vice-principal of discipline at the school has hired you as a consultant to observe the class and make recommendations to improve the situation. After a week of observations, you've noted the following: Mr. Havure does not begin class formally but simply works at the lathe as the students enter the room. Finally, after about ten minutes of student horseplay, Mr. Havure screams at the class, hands out a few detention slips, and begins to discuss the day's project. He is drowned out by loud students and frequently interrupts his lecture with idle threats. The only copy of the project instructions is in a three-ring binder tossed around the room by bullies playing keep-away. Other students line up to ask Mr. Havure for help, pushing and shoving in line for ten to fifteen minutes before their turn. By the end of class, several students are sent to the vice-principal or school nurse and others have snuck out to go off campus.

Complete the following task:

Describe at least THREE ways Lax could improve his classroom management skills. Be sure to relate your answer to the principle of least intervention (prevention, cues, praise, reminders, and consequences). Defend your answer with clues in the vignette, references to this week's readings, or assumptions that you have made.

APPENDIX B

TABLE A1

SCORING GUIDE

Category / Subscore	Description
Presentation	
2	Uses appropriate, correct, and clear language, phrasing, and grammar
1	Includes some errors and/or some lack of clarity
0	Includes extensive errors and inaccuracies; general lack of clarity
Accuracy	
2	Portrays and interprets the information and content accurately
1	Includes some errors; minimal portrayal or interpretation present
0	Includes extensive errors; little or no portrayal or interpretation present
Scope	
3	Addresses all parts of the question; includes appropriate references to readings, theory, and research; addresses at least two points of view when appropriate
2	Missing a few of the necessary scope components
1	Missing many of the necessary scope components
0	Missing all or most of the scope components
Defense / Summary	
3	Describes the problem or issue and gives a viable resolution, explanation, and analysis; includes a clear and focused statement of agreement or disagreement when appropriate; includes relevant evidence in support of the viewpoint(s) presented; provides relevant, accurate definitions and examples of key terms
2	Missing a few of the necessary defense components
1	Missing many of the necessary defense components
0	Missing all or most of the defense components

Total Score (10 points possible) _____

Grading Scale:

9–10	A
8	B
6–7	C
5	D
0–4	F

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