An Analysis and Evaluation of Online Instructional Activities

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Abstract: A key factor in successful teacher education is designing activities that promote attainment of instructional objectives. However, in online teacher education there is little evidence regarding the types of activities that can be used to achieve specific objectives and variation from class to class while providing effective instruction. This study examined 6 online activities focused on the types of objectives instructors often set in teacher education coursework. The activities were evaluated in an online graduate methods course. Data were gathered from the teachers' (a) performance on each activity, (b) rating of questionnaire items, and (c) responses to open-ended survey questions. Findings suggested that the success of the 6 activities varied. Many teachers gave positive ratings to the activities related to facilitating learning of course concepts and promoting interaction among classmates. Several implications for designing online instructional activities are presented.

Online instruction can provide effective strategies for offering courses and field experiences in special education teacher preparation programs. Evidence shows that such approaches can serve to supplement on-campus teaching activities and to replace conventional coursework and practicum supervision for students at distance education sites (Collins, Schuster, Ludlow, & Duff, 2002; Knapczyk, Hew, Frey, & Wall-Marencik, 2005; Sun, Bender, & Fore, 2003). Under circumstances such as these, online instruction can give prospective teachers broad-based, comprehensive, and high quality learning experiences. For example, Caywood and Duckett (2003) reported no significant differences in student learning between an online and an on-campus course on behavior management. Beattie, Spooner, Jordan, Algozine and Spooner (2002) reported similar findings in comparing course evaluations from an online and an on-campus methods course on learning disabilities. Knapczyk, Frey, and Wall-Marencik (2005) surveyed in-service teachers completing an online course on behavior disorders and reported ratings of this experience as equal or superior to conventional coursework in such areas as engagement in course activities, interaction with classmates, instructor feedback and overall quality of learning.

However, an important caution consistently expressed in the literature is that online teaching will not be successful if instructors use the same approaches as in a conventional course (Beattie et al., 2002). Young (1999), for example, reported that when online courses are taught using a conventional model of face-to-face instruction, problems such as high rates of student dropout, learner dissatisfaction, and low motivation result. This is because conventional teaching methods such as lectures, class discussions, reviews of handouts, and presentations using PowerPoint slides are based on an
oral teaching tradition. That is, they rely heavily on an instructor and students speaking and listening to one another to provide information, clarify expectations, structure activities, give feedback, and in other ways convey meaning of course content. Transforming conventional teaching methods to an electronic format does not ensure that these essential forms of interaction will take place (Hirumi, 2003). Online instruction mostly relies on asynchronous communication in which instructors must account for not having a live audience with whom they can communicate freely, gauge reactions, obtain feedback, and adjust teaching methods on an as-needed basis (Dennen, 2005; Meyen, Aust, Bui, & Isaacson, 2002; Romiszowski & Mason, 1996).

One consistent principle that pertains to both online and on-campus teaching is that the approach an instructor uses should facilitate achievement of the objectives learners need to attain. In teacher preparation coursework there is typically an array of instructional objectives an instructor needs to address that can include such areas as helping learners understand theoretical concepts, apply the concepts to classroom instruction, compare and evaluate concepts based on teaching situations, and synthesize several concepts into teaching lessons. However, in contrast to conventional face-to-face instruction for which there are models and strategies for achieving such objectives, the online literature provides little information on the effectiveness of specific instructional activities in teaching areas like these. This is unfortunate because the lack of such information hinders novice online educators from having clear guidelines and models for developing activities that can foster the learning of specific instructional objectives.

Another consideration in teacher education is that instructors often have several types of objectives they wish to teach in a single course. For example, 1 week an instructor may wish to focus on helping prospective teachers understand theoretical concepts. The next week, the objective might be to show the learners how to make comparisons among these concepts. The week after, the instructor may focus on how to apply the concepts to classroom situations. Finally, the instructor may teach students how to judge the best circumstances in which to use the concepts in their instruction. Teaching an array of objectives like this naturally requires different instructional activities. Transitions between them can easily be established in face-to-face settings. However, it is unclear whether an online environment can support teaching objectives that require substantial changes in activities from class session to class session. For example, there is no evidence in the literature on whether learners can adapt to weekly changes in online activities and still achieve the instructional objectives, maintain an effective learning dialogue with classmates and feel confident they have gained adequate preparation in the content. Thus, an essential element in online instruction is designing instructional activities that are aligned to the objectives an instructor wants to achieve (Berge, 2002; Smith & Ragan, 1999). Such alignment optimizes student learning and motivates participation in online interactions (Dennen, 2001; Hirumi, 2003), but key questions in this approach pertain to the types of activities that can be used to achieve specific objectives and the extent to which instructors can vary these activities from class session to class session.

The purpose of this study was to examine six online activities that focused on the types of objectives instructors often set in teacher education coursework. It was conducted in a graduate methods course that aimed to teach behavior management concepts and skills to in-service special education teachers with limited or emergency licenses. Objectives studied were the following: (a) learning new theoretical concepts, (b) applying theoretical concepts to specific classroom situations, (c) using theoretical concepts to problem solve solutions to discipline problems, (d) comparing and contrasting theoretical concepts, (e) synthesizing theoretical concepts in developing lesson plans, and (f) examining the limitations and applications of non-teaching concepts (i.e., using medication as a behavior management approach). The theoretical concepts covered in the objectives were taken from the text for the course, *Creating Effective Programs for Students with Emotional and Behavior Disorders* (Jones, Dohrn, & Dunn, 2004). Supplemental readings and instructor-prepared handouts provided additional information and case study examples of the concepts. Although the course addressed several state, national, and profes-
sional organizational standards in such areas as assessment, individualizing instruction, and planning interventions, the objectives and activities were not designed to fully cover specific standards. For example, some of the objectives and activities provided the background and preparation for standards that teachers met in follow-up practicum assignments.

The study was designed to determine whether teachers (a) achieved the objectives of the activities, (b) felt they participated in an effective learning experience as activities changed from week to week, and (c) were satisfied with the online approach used in the activities. The next section describes each of the instructional activities and the later sections explain the methods, empirical findings, and implications of the study.

**Description of Activities**

The six activities were designed for a graduate level course entitled *Management of Severe Behavior Disorders* that was offered off-campus through distance education. The course was delivered in an online format to full-time special education teachers who were teaching with emergency (i.e., temporary) licenses. Each activity was 1-week in duration. The readings, class groupings, assigned tasks, and grading rubric were posted the previous week. The following gives a brief overview of each activity.

**Activity 1: Class Discussion of Readings**

In the first activity, the instructional objective was: *To learn new theoretical concepts by reviewing and discussing assigned readings in a learner-centered format.* The concepts covered in the readings were definitions of behavior disorders and identification and classification of school-age children who have these conditions. In this activity, one teacher served as the Starter for the week’s online discussion among a group of nine or ten teachers. This teacher reviewed the assigned readings before the rest of the group, posted a 1–2 page summary of the material, and presented three open-ended questions that were to prompt the week’s discussion. The other group members developed and maintained the week’s discussion by making at least one posting in answer to each of the Starter’s questions and at least one comment on a classmate’s posting on those topics. In addition to answering the Starter’s questions, teachers typically shared examples from the readings and personal experiences, asked and answered questions of one another, expressed opinions, raised related issues, and gave one another feedback.

Later in the week, one teacher served as the discussion Wrapper by reviewing and summarizing the group’s postings on each discussion question. The Wrapper’s task was to highlight main points of the readings, recap key issues raised in the discussion, and outline major points and questions that arose. The final task for the week was for all class members (including Starter and Wrapper) to post a reflective summary that explained two things they learned from the discussion.

**Activity 2: Application of Management Procedures**

In the second activity, the instructional objective was: *To learn to apply theoretical concepts by describing how behavior management methods and interventions could be used in real life classroom situations.* In this activity, instructors started the activity by posting a list of 36 common behavior management techniques, such as environmental modification, social skills training, conflict resolution, contingency contracts and self-management strategies. They assigned each teacher three or four of the methods and gave directions to review readings and websites on the procedures. Teachers had 4 days to make a posting on each method that (a) gave its description, (b) provided guidelines for its use, and (c) presented three examples of its application in addressing real-life problem situations in their classroom. Instructors then compiled the postings of all the teachers into a resource file and sent it to them.

**Activity 3: Matching Management Problem Hypotheses to Case Studies**

In the third activity, the instructional objective was: *To learn problem solving skills by first matching problem behavior to specific conditions that might cause that behavior, and then choosing intervention procedures to address those causal factors.* In this activity instructors...
had teachers work in groups of three or four on one of the following problem behavior hypotheses: (a) problems caused by conditions in the child’s environment, (b) problems caused by skill deficits, (c) problems caused by performance deficits, and (d) problems caused by the child’s lack of motivation. Each small group was given 4 days to post detailed information from the text and other sources about its hypothesis area in separate discussion folders. Group postings were to include: (a) a description of the hypothesis area, (b) an explanation of how the hypothesis area could cause problem behavior, (c) factors that indicate whether problem behavior is actually caused by the hypothesis area and (d) what a teacher should accomplish with an intervention focused on the area. Along with this posting, each group was to write two case studies that reflected its hypothesis area and provided enough background to clearly show that the child’s difficulties were caused by factors in that area. The case studies were to be sent to the instructor who edited and posted them in random order in a separate discussion folder.

Later in the week, each class member had 3 days to read the hypothesis descriptions and case studies. Teachers were to choose the two case studies that best matched each hypothesis description and post a 1–2 paragraph rationale for their choices. In addition, they were to describe an intervention that matched procedures to the cause of the problems and explain why it was applicable to the case study portrayals. Finally, each small group was to review the case selections and interventions classmates posted for its hypothesis area and provide feedback on whether the explanations and case choices were applicable to the area.

Activity 4: Debate of Management Philosophies

In the fourth activity, the instructional objective was: To learn to compare and contrast theoretical orientations on behavior management philosophies. This activity was structured as an online debate in which teachers examined ethical considerations associated with behavior management philosophies and proposed a set of principles governing professional practice. The class worked in groups of 3 or 4 on one of the following issues: (a) using rewards to induce compliant behavior, (b) using punishment to suppress “unacceptable” behavior, (c) formalism (i.e., students’ rights and needs supersede those of schools/society), and (d) utilitarianism (i.e., schools/society’s rights and needs supersede those of individuals). Each small group was assigned one issue and given 3 days to research its area and post a group-developed overview and set of arguments advocating it in a discussion folder. Groups were also asked to prepare a strategy for defending their issue with other groups who would advocate alternative viewpoints. After the summaries of the four issues were posted, small groups had 2 days to review each of the other groups’ postings and present three criticisms of the position in that discussion folder. The groups that advocated the original position then had 2 days to consider the criticisms and post a rebuttal. Finally, each teacher was to read the debate postings for all the issues, post a two to three paragraph reflection on ethics associated with behavior management, and suggest three principles governing interventions for children who display problem behavior.

Activity 5: Integrating Assistive Technology in Lessons and Interventions

In the fifth activity, the instructional objective was: To learn to synthesize concepts of assistive technology with other behavior management approaches by developing an instructional lesson in an academic area. This activity was designed to show teachers how to incorporate assistive technology and other intervention methods in instructional lessons for children who display problem behavior. Class members were given an article on electronic reserve that gave examples of how assistive technology could be used as an intervention approach for such children (e.g., by accommodating for their learning difficulties, by teaching needed social skills, by enhancing their motivation). They were given 3 days to read the article and three case studies that the instructor posted in separate discussion folders and to propose two procedures that addressed a problem behavior for each case. For one of the suggested interventions, teachers were to explain how
they would use assistive technology and other intervention methods to address the problem behavior. In this posting they were to (a) give an overview of the technology, (b) provide a rationale for its use as an intervention method, (c) highlight its potential benefits to a behavioral intervention and an instructional lesson, and (d) explain how to incorporate the technology intervention in a group lesson in a specific curriculum area. After making this posting, teachers had 2 days to provide suggestions for 6 of their classmates' lessons (i.e., two in each of the case study folders). In their responses, they were to give feedback on potential problems and/or benefits of the intervention approach. The last part of the assignment gave teachers 2 days to re-read the postings in each case study folder, consider the intervention ideas of their classmates, and give a 2- to 3-paragraph reflection on what they learned about integrating assistive technology in teaching lessons.

**Activity 6: Chat on Medication as a Behavior Management Approach**

In the sixth activity, the instructional objective was to: *To learn to examine the benefits, limitations and applications of using medication to control problem behavior.* This activity involved an online chat with a child psychiatrist on the use of medication to control problem behavior. To prepare for the chat, teachers were to read handouts posted on electronic reserve that described frequently used medications for behavior control and explained their use with school-age children. In addition, they were to evaluate procedures for monitoring behavior control medications in their own schools. Then they had 3 days to read two medical case study dilemmas posted in a discussion folder that presented the potential benefits, limitations and side effects of medication use and to post answers to seven questions on issues raised in the examples. They had 2 days to reply to another teacher's posting by elaborating on the issues raised, sharing personal experiences and explaining their school's monitoring procedures. After this part of the activity, each teacher had a day to submit four questions to ask a child psychiatrist with expertise in behavior control medication. The questions were to focus on the use of medication as a behavioral intervention and on their role as teachers in these circumstances. An instructor consolidated the questions and gave them to the psychiatrist. These parts of the activity served to orientate teachers to important issues on the topic and to prepare them for a meaningful online chat with the psychologist.

Instructors scheduled several 60-minute synchronous chat times with 4 or 5 teachers per time slot. An instructor moderated each chat session and facilitated the discussion by posting a starting question from the list teachers generated and adding new ones as the discussion on a topic ran its course. Following the chat, teachers were to post a reflection that focused on the following: (a) what they had learned from the activity, (b) how they saw their role as teacher changing as result of it, and (c) two to three monitoring procedures for medication use they would add to their schools' practices and what they would do to initiate the changes.

The next sections of the manuscript focused on evaluating these instructional activities. The following research questions guided the investigation:

1. Did teachers who performed the activity achieve the instructional objective?
2. How did the teachers rate each activity in terms of its effectiveness as a learning experience?
3. What was the teachers' level of satisfaction with the activities in terms of their being delivered in an online format?

**Method**

**Context and Participants**

Evaluation of the six activities was carried out in the *Collaborative Teacher Education Program* (CTEP) that is offered at a large midwestern university. CTEP is a three-year program delivering thirty credits of certification coursework through distance education. Students in CTEP are off-campus, graduate level, in-service teachers who teach full time with emergency licenses and are seeking certification in the areas of mild disabilities and/or emotional handicaps. Teachers participating in the study were enrolled in *Management of Severe Behavioral Disorders*, one of the
Table 1. Demographic Information on Participants

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<th>Teaching environment</th>
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<th>36–45</th>
<th>46–55</th>
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<td>High</td>
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<td>1</td>
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<tr>
<td>Juvenile correctional facility</td>
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3-credit courses required for a teaching license. The course focused on instructional and behavioral methods for addressing severe classroom management problems and on procedures for planning, implementing, and evaluating interventions. It was delivered in an online format and offered during a 15-week semester. The four instructors for the course met each week to design course activities, plan grading procedures, discuss student performance and review other aspects of the course. They used the same syllabus, text, instructional format, course activities, student feedback approach, and grading procedures.

The six instructional activities evaluated in the study were among the 14 online activities used in the course. They were scheduled consecutively between weeks two and seven of the semester. Data from the other eight activities were not reported because either the activity did not have clear instructional objectives, (e.g., a “Getting to Know You” activity in the first class session), or duplicated the activity format for another objective, (e.g., the Class Discussion of Readings activity was also used later in the semester to cover a different course objective from a different set of readings). When an activity was duplicated, its first presentation was used for data collection. Week one’s class session was a face-to-face meeting that provided an introduction to the course, discussed course mechanics and logistics, and had a “Getting to Know You” activity to help familiarize participants with one another. Two other face-to-face classes (week 8 and week 15) were used to review progress on projects and to obtain comments and suggestions about the course.

Thirty-four teachers enrolled in the course and 1 dropped it after two weeks. Data from 33 teachers (7 males, 26 females) were thus used in the study. Participants were from urban, suburban, and rural communities throughout the central and southern parts of a midwestern state. All participants had completed a prerequisite course entitled Survey of Behavior Disorders that covered such topics as the characteristics and attributes of emotional/behavioral disorders, approaches for identifying students with these conditions, and formal testing and assessment methods. Participants were randomly placed into four class sections or large groups consisting of 8 or 9 teachers. Each group had its own set of online discussion folders for each activity and members used them to complete the activities and participate in interactions with classmates and the instructor. Table 1 summarizes demographic information on the study’s participants.

At the start of the course, instructors met with participants in a face-to-face meeting and provided an overview of the course and discussed such aspects as the course objectives, assignments, class schedule, online interaction format, and grading procedures. The meeting enabled instructors and participants to get to know one another and clarify details about the course. The meeting was held in four different locations to minimize travel time for participants. They were then assigned to large and small groups and an instructor. During the semester, there were two additional face-to-face meetings: one in the middle of the semester to obtain general feedback on the course and explain a final project, and one at the end of the semester to bring closure to the course and share project information.

Online Communication System

The activities were delivered by means of an easy to use web-based courseware program that supported synchronous and asynchronous
communication among participants and instructors. The tool had six sections: Syllabus, Schedule, Class, In Touch, Tools, and Help. The Syllabus and Schedule folders were used to post course documents, such as the syllabus, course schedule and project deadlines. The Class section was used by participants and instructors to give autobiographical information. The Tools area had database and course management tools for instructors to post activity scores and give individualized feedback. The Help section offered assistance to any specific section of the courseware program that a class member was in when he or she needed help. The In Touch section provided communication tools, such as email, chat rooms and discussion forums. This is where instructors posted the directions for the activities and set up weekly discussion folders. Several of the participants had used the program in previous coursework while others were using it for the first time. Previous studies have shown that both experienced users and novice users of this courseware consistently rated it as very easy to use in online teacher education courses (e.g., Hew & Knapczyk, in press; Knapczyk, Hew, Frey, & Wall-Marencik, 2005).

Data Collection Instruments

Three types of measures were used in the study, including (a) an assessment rubric for each objective, (b) a questionnaire survey, and (c) a set of open-ended questions.

Assessment rubric

Instructors developed a grading rubric for each instructional activity to evaluate a teacher's attainment of the objective. The rubric was a ten-point scale that assigned points to the following areas: content quality of postings, completeness of steps and tasks, quality of feedback to classmates, timeliness of responses, use of resources and citations in postings, and incorporating "best practices" in responses. Distribution of points across the areas varied from activity to activity depending on its requirements. For example, the rubric may set one or two points for giving feedback to classmates based on the number of times participants were to give it. Similarly, it would include one or two points for using resources only when it was part of the activity. Instructors included the scoring rubric in the activity directions to show the criteria they would be using to evaluate performance of tasks and attainment of the objective.

Instructors posted participant scores in the Tools section of the communication system and participants could see a running account of their own scores but not those of classmates. Along with the weekly scores, instructors gave each participant a brief feedback statement such as "Your response to this activity showed insight into..." or "Your posting was incomplete because you..."

Questionnaire survey

A survey was administered at the end of the course that consisted of two sets of closed-ended statements. One set asked participants to evaluate each instructional activity on whether it provided an effective learning experience (e.g., facilitated the learning of important and useful behavior management concepts and fostered interaction among classmates). The other set of questions asked participants to rate their overall perception of using an online approach to learn behavior management practices.

Participants rated each item on a four-point scale (4=Strongly Agree, 3=Agree, 2=Disagree, 1=Strongly Disagree). The directions asked participants to choose one of the available options but indicated they could choose to not rate an item if they had no opinion about it or if they thought it was not applicable to them. Instructors told participants their ratings would be tallied anonymously by a graduate student who was not a course instructor. Thirty participants (90%) completed all the items.

Open-ended questions

Participants were asked a set of open-ended questions at the end of the course to have them elaborate on their ratings of the activities and express their thoughts on online learning. This item was posed as six separate questions with a brief description of an activity next to each question. The questions included:

1. What comments do you have on ______ (i.e., identify one of the six instructional activities)?
2. What are your comments about interacting online with classmates during the course?

3. What are your thoughts about doing the instructional activities in an online format?

As with the questionnaire, instructors told participants their individual comments would only be seen by a graduate assistant. Thirty participants (90%) responded to all the questions.

Data Collection Procedures

When participants completed an instructional activity, instructors scored their postings using the grading criteria and ten-point rubric that accompanied the directions. They assigned scores of ten or nine to postings that clearly met or exceeded the criteria, (i.e., work they considered at least A level). They gave scores of eight to postings that met the criteria at a sufficient level to meet the objective (i.e., work they considered B level). Scores of seven were assigned to C level work, six to D level work, and five or lower to F level work. In this way, scores for each activity gave a measure of each participant’s level of attainment of the instructional objective. That is, scores of eight, nine and ten indicated attainment of the objective and scores below eight indicated lack of attainment. Instructors posted scores and feedback comments within 3 days of participants completing an activity.

Participants completed the questionnaire survey and answered the open-ended questions at the end of the course in an electronic format. Responses to the closed-ended questions were tallied and summarized as percent scores. Answers to the open-ended questions were separated into three categories: (a) those that described benefits or difficulties in doing the activity, (b) those that focused on interaction among classmates within an activity, and (c) those that gave generalized opinions about doing the activities in an online format.

Reliability

A reliability measure for scores instructors gave teachers on instructional activities was obtained by having another person re-score a sample of assignments using the grading rubric. This person was not an instructor but had previously taught the course and was familiar with its content and assignments. He reviewed the postings of three randomly selected teachers from each instructor’s class group for each instructional activity. (i.e., the person re-scored seventy-two assignments [3 participant postings for 4 instructors for 6 activities]). A comparison was then made between the scores given by the course instructor and the score assigned by the independent rater. The percentage of reliability between the two sets of scores was calculated by dividing the number of agreements by the total of agreements and disagreements and multiplying the product by 100. The percent of reliability in assigning rubric scores was 97% and there were no appreciable differences in reliability among instructors or activities.

Data Analysis and Findings

The data analysis and findings are organized according to research questions described in the earlier section.

Question 1

Did teachers who performed the activity achieve the objective?

Table 2 gives the frequency counts of scores participants received on each of the six activities. It shows, for example, that on Activity 3: Matching Management Problem Hypotheses to Case Studies, 20 participants earned scores of ten on the grading rubric instructors used to evaluate their performance, 12 participants earned scores of nine on the activity and 1 earned a score of seven. The second to last row gives the totals of participants who were given scores for the activities.

The grading scheme instructors used defined scores of eight or higher as meeting the objective for the activity and scores of seven or lower as not meeting the objective. On Activity 4: Online Debate of Management Philosophies, all participants achieved the instructional objective of comparing and contrasting theoretical orientations. One participant did not achieve the objective for Activity 3; 2 participants did not achieve the objective for Activities 2, 6, and 5; and 3 participants did not achieve the objective for Activity 1. The participant who received a zero score for Activity 1 was ill during that week and did
Table 2. Frequency of Participants Obtaining Scores for Each Instructional Activity

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<th>Scores</th>
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<tr>
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Percent of participants who met objective: 91% 94% 97% 100% 94% 94%

Note. 1 = Activity 1: Class Discussion of Readings. 2 = Activity 2: Application of Procedures. 3 = Activity 3: Matching Problem Hypotheses to Case Studies. 4 = Activity 4: Debate of Management Philosophies. 5 = Activity 5: Integrating Assistive Technology. 6 = Activity 6: Chat on Using Medication.

not make any postings. The last row of Table 2 shows that based on these scoring criteria at least 91% of participants met each activity’s instructional objective. A review of instructor feedback comments accompanying posted scores indicated that low scores were generally given for not completing specific parts of an activity rather than for making a posting that showed lack of understanding of concepts or methods. On Activity 6, for example, 2 students were given low scores because they did not participate in the chat session rather than because they posted incorrect information.

Research Question 2

How did the teachers rate each activity in terms of its effectiveness as a learning experience?

Table 3 lists the activities in an ordered sequence beginning with the 1 participant rated most highly in terms of its effectiveness as a learning experience. This determination was made from the ratings participants gave on whether they strongly agreed, agreed, disagreed or strongly disagreed that the activity permitted a full, open and beneficial interaction with classmates on the concepts and methods covered by the directions. The table shows the percent of participants who rated each activity and the results suggest that all six activities were at least partly successful in that each received more than 60% of the total of strongly agree and agree ratings. Participants rated Activity 1: Class Discussion of Readings (100%), Activity 6: Chat on Medication as a Management Approach (93%), and Activity 2: Application of Management Procedures (91%) the highest based on the sum of agrees and strongly agrees. These are followed by Activity 5: Integrating Assistive Technology in Lessons and Interventions (89%), Activity 3: Matching Management Problem Hypotheses to Case Studies (86%), and Activity 4: Debate of Management Philosophies (63%).

A review of responses to open-ended survey questions on each activity provided additional information on participants' evaluation of their learning experience. The following summarizes the major findings from the review.

Activity 1: Class Discussion of Readings

—Participants gave 21 comments about their learning experience in this activity. Seventeen comments (81%) indicated that the learner-
centered format was particularly good for helping participants understand important theoretical concepts and principles. For example, one comment said, "It [class discussion of readings] was a good way to cover the details of the content and encouraged student-student interaction." This point was repeated by another comment, "I prefer this method, especially when it is used to cover content in texts. I would like to have more of these."

There were three comments (14%) critical of the activity in stating that its directions were vague or confusing. One participant wrote, "[The activity] is somewhat confusing at first. Some of the directions are vague." Also, three comments (14%) stated there was too little time to do the activity well. For example, "The Starter position was very time consuming." As mentioned before, Starters had to review and post a 1–2 page summary of readings and prepare three open-ended questions prior to the week's scheduled discussion, and they usually did these tasks along with doing another week's assignment.

Activity 2: Application of Management Procedures

There were 22 comments regarding participants' learning experience in Activity 2 and eighteen of them (83%) referred to the activity as being very beneficial for learning how to apply concepts of behavior management to specific classroom situations. Several suggested that participants enjoyed being the expert on their particular procedures and that the assignment encouraged them to do in-depth research on intervention methods and applications. For example, one comment said, "I thought this activity was a great way to really focus on a few interventions and share their value with others. I liked the idea of becoming a semi-expert in an area. I think that it helps an individual better understand the interventions." The activity also provided participants with a comprehensive guide that they could use for subsequent course activities and for their own classroom use. This was exemplified by the following comment, "This was an awesome activity!!! I learned a lot from it. This activity provided me with a data base of appropriate and inappropriate intervention techniques that would be helpful in any classroom setting."

Another comment echoed, "This (activity) required some considerable research and we composed an excellent resource for subsequent activities in the course as well as for classroom applications."

Four comments (18%) questioned the heavy workload in doing the reading and research for the assignment in a relatively short amount of time. One participant wrote,

It took hours to research the topics and then to write about them in a professional manner that would benefit my classmates. However, the book didn't give much information so there was a lot of research. Again, I'm a mother, wife, and full-time teacher. I'm not only a student.

Another comment suggested, "Maybe cutting down on how many cases (intervention applications) are given to each person. When you have three case studies (application examples), four interventions is a little too much."

Activity 3: Matching Management Problem Hypotheses to Case Studies

Participants provided 13 comments about the learning experience in Activity 3. Nine (70%) stated the activity helped with solving actual behavior management problems. For example, 1 participant likened her role to a "behavior detective" and stated that the activity allowed her to adapt intervention procedures to real situations. Another stated, "I thought this activity was quite thought provoking. It was really neat to see how one activity seemed to so clearly match one hypothesis in my mind, but other people attributed it to a very different hypothesis. I think it hits at the heart of working with students with EBD (Emotional/Behavior Disorders). There is not one right answer and a new perspective can sometimes change everything."

On the other hand, four comments (30%) expressed concern that some case examples were hard to match to specific problem hypotheses. A subsequent review of the cases showed that a couple of the problem descriptions could fit into more than one hypothesis area depending on the teacher's interpretation. This supported one comment that said, "There is not enough information in some cases and many intervention practices could go with these cases because they were too vague."
Activity 4: Debate of Management Philosophies

Participants made 16 comments about their learning experience in Activity 4 and half of them referred to the debate as beneficial in helping to seriously consider the pros and cons of using specific interventions with students. The following comment illustrates this view,

I really enjoyed this activity though I believe it was one of the most challenging. I thought the debate format was fun and really made team members “stretch” their ability to think critically. It made me evaluate the pro’s and con’s [of different theoretical orientations]. Good activity. [It was] interesting and provocative. I reinforced my own philosophical orientations as a result of this activity.

However, four comments (25%) expressed concern that in a debate format it was difficult to stand up for a position if the teacher did not believe in it or if it involved an approach not used regularly. The following comment shows this view, “Yes, it was fun to debate with the other groups, but it is extremely difficult to argue a perspective that you do not believe in!”

One comment stated that some classmates were too forceful in defending a position in the debate. This participant said, “Some classmates got very defensive and rude when debating what intervention was the best practice.” A review of the postings for this activity showed these types of statements occurred when one class member strongly disagreed with her team’s position even though the posting of disagreements was an assigned part of the activity. Finally, there were 3 comments (18%) expressing problems with the structure and mechanics of the activity rather than its content, such as difficulties with coordinating communication in groups of four during the assignment,

Groups of four are nearly impossible with this format [online debate]. It was very difficult to write something as a group via internet, especially with very limited time. Group work was a little too demanding and too dependent upon idealistic communication.

Activity 5: Integrating Assistive Technology in Lessons and Interventions

The participants’ task in this activity was to incorporate assistive technology and one or more common intervention procedures in a lesson plan for an academic subject matter area. Participants made 14 comments about this activity. Eleven of them (80%) expressed benefits from synthesizing and adapting approaches to their own circumstances and from the suggestions and critical feedback of classmates on their ideas. The former was evident in the following comments, “It helped me to think about the many nuances in actually incorporating interventions into classroom functions” and “I like this activity. It made one put together information learned from a variety of situations.” Another comment put it this way,

With so much pressure to cover curriculum and standards, teaching various skills to students is being neglected. This activity helped integrate these seemingly competing forces and prove that both can be done without neglecting the other. Very nice!

One limitation of the activity, besides a lack of time, was the frustration one teacher experienced with not having ready access to assistive technology in her school. Consequently, she said she had a harder time completing the activity, as illustrated by her comment, “This was a difficult one to complete without much insight. The focus was on technology and that is an area that carries many obstacles amongst schools.”

Activity 6: Chat on Medication as a Behavior Management Approach

Participants wrote 22 comments about this activity and 17 of them (79%) highlighted benefits from chatting with an outside expert on the use of medication in managing behavior, an approach they frequently encounter with their students. As 1 participant stated, “We had all these questions (on the use of medication to control behavior) that only a doctor could answer and yet we have never had a chance to talk to a physician about our questions.” Another shared the same view, “I think this is an awesome way to provide access to some ‘outside’ school professionals with whom there are rare opportunities to exchange ideas. I enjoyed the chat and reading the various responses.”

The spontaneity of the online chat, however, presented a limitation expressed in
Table 4. Participants’ Overall Satisfaction with the Activities

<table>
<thead>
<tr>
<th>Item</th>
<th>Strongly Agree (%)</th>
<th>Agree (%)</th>
<th>Disagree (%)</th>
<th>Strongly Disagree (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall, I was satisfied with the activities.</td>
<td>9</td>
<td>72</td>
<td>16</td>
<td>3</td>
</tr>
<tr>
<td>I would recommend the activities in an online format to my colleagues.</td>
<td>20</td>
<td>61</td>
<td>16</td>
<td>3</td>
</tr>
<tr>
<td>The directions for the activities were clearly explained.</td>
<td>20</td>
<td>56</td>
<td>17</td>
<td>7</td>
</tr>
<tr>
<td>There was sufficient time scheduled to do the activities.</td>
<td>0</td>
<td>50</td>
<td>44</td>
<td>6</td>
</tr>
<tr>
<td>I learned valuable teaching approaches from the activities that I could use in real-world environments.</td>
<td>45</td>
<td>45</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>The activities helped me learn new approaches to behavior management.</td>
<td>29</td>
<td>58</td>
<td>13</td>
<td>0</td>
</tr>
<tr>
<td>The level of student-student interactions was high.</td>
<td>16</td>
<td>68</td>
<td>16</td>
<td>0</td>
</tr>
<tr>
<td>I received enough constructive feedback from my classmates.</td>
<td>19</td>
<td>78</td>
<td>3</td>
<td>0</td>
</tr>
</tbody>
</table>

Four comments (18%). Some participants criticized the chat as being hurried and narrow in focus. One stated that,

It seemed that the people in the chat were in a huge hurry to get the chat completed. The chat was also not able to stay on a focus. Teachers were eager to get their three or four questions completed. Therefore, the chat was not a learning experience for me because others were in such a rush to end it.

As a result, some felt the logical flow of the online chat was not well maintained or brought to a satisfactory conclusion because of interruptions by participants who dominated the discussion. There was one comment referring to being overwhelmed by the amount of information generated during the chat session, “There was an overwhelming amount of information to read (online).” It should be noted that the chat function in the communication system used for the course had a tendency to delay and then bunch up synchronous postings for users on dial-up connections as were most teachers in the course. These multiple postings were often listed out of order as well. Research Question 3 (i.e., What was the participants’ level of satisfaction with the activities in terms of their being delivered in an online format?)

Participants were asked to rate a series of questionnaire items in order to assess their overall satisfaction with use of an online approach to learn behavior management concepts. All 33 participants rated the items and Table 4 gives the percentages of those who indicated they strongly agreed, agreed, disagreed, or strongly disagreed with the statements. The total of strongly agree (9%) and agree (72%) ratings suggest that 81% were satisfied with the activities. The same total percent indicated they would recommend the activities in an online format to colleagues. Seventy-six percent agreed or strongly agreed the directions to activities were clearly explained, but 50% felt there was not sufficient time allotted to them. Ninety percent agreed or strongly agreed they had learned valuable teaching approaches from the activities that they could use in their own classrooms, and 87% agreed the activities helped them learn new approaches to behavior management. Overall, 84% of participants rated student-student online interaction as being very high and 97% agreed or strongly agreed they received enough constructive feedback from their classmates to learn the required concepts. These findings are consistent with participant ratings and open-ended comments on each activity presented in the findings for research question 2.

Open-ended questions accompanying the survey were used to have participants elaborate on their ratings and 21 participants (63%) made comments. Analysis of these responses suggests that a major benefit of doing activities online was the convenience it afforded teachers. Eight comments (38%) pertained to this feature. The following gives three examples,

I am a non-traditional student with adult responsibilities and cannot always attend a weekly class. This type of course allows me to work at home at my convenience. It is very convenient for those of us who have to travel quite a way to get to class or those of us who are very busy. Being offered in an online format gives me the flexibility that I need in my schedule.
These comments are consistent with the findings of other researchers who found that convenience is a major factor in prospective teachers enrolling in online coursework (e.g., Collins, Schuster, Ludlow & Duff, 2002; Meyen, Aust, Bui & Isaacson, 2002). 

There were other positive comments pertaining to the benefits gained from the instructional activities. Two participants (10%) stated the activities permitted a high level of interaction among classmates. One said, "Despite the online nature, doing the activities was as intimate as a (conventional) classroom." Two participants (10%) highlighted the opportunities the activities gave for reflection. One commented that, "I actually had time to reflect (on) and apply what I have learned." Two participants (10%) felt that the online format allowed them to learn more concepts than in a conventional course. For example, "It [online format] allows for a great deal of information to be exchanged between instructors and students, which would have been otherwise impossible during a regular face-to-face class."

Participants also described some limitations they felt were inherent in an online approach with the activities. Three (14%) said the activities took more time than they had expected. One wrote, "I know that this is a graduate level course, but I feel that I am doing ten times the work as I would be if I go to class every week." Two participants (10%) described difficulties interacting with classmates, especially when preparing team-based rather than individual postings. One wrote, 

I did feel that sometimes it was hard to get into contact with other classmates especially in small group activities. It seemed like I was waiting for other students to reply to my email and we were running behind getting part of our assignment completed at times. One time my small group used the chat line which I did not like at all. If you are on a slower computer it takes time to get caught up during the chat.

One participant praised the online approach except for the number of postings she had to read, "The online format is great except when there is a huge amount of postings to read. That is when I feel overwhelmed." Another commented on the difficulties she had getting immediate feedback to questions, "I enjoyed the convenience of the online format. However, I also feel that there is so much important information to process that having opportunities to ask questions and get immediate feedback as in a face-to-face class is valuable."

**Discussion and Conclusions**

An online methods course in special education typically covers different types of instructional objectives in order to prepare teachers to meet certification standards. Such objectives can include building an understanding of theoretical concepts, showing how those concepts compare to other concepts, demonstrating application of the concepts to real life teaching situations, synthesizing the concepts into lesson plans, and many others. When methods courses are designed to teach a varying set of objectives like this, instructors must carefully match the instructional activities to each objective so they successfully teach the concepts and skills that are involved.

This study evaluated the effectiveness of six online activities in helping in-service teachers attain the types of instructional objectives that mirror those in many methods courses. The overall results suggest that each instructional activity was at least partly successful in teaching participants to achieve its objective based on the scoring rubric used by instructors. At least 30 of the 33 participants attained the objective for each of the activities; moreover, a very high percentage of them expressed satisfaction with the online approach instructors used in their teaching. For example, over 85% of participants rated the activities as facilitating their learning and classroom application of concepts in the objectives, and over 80% stated they would recommend the activities in an online format to other teachers. There was no indication from the data that participants had difficulty adjusting across class sessions to changes in either the instructional objectives or the instructional activities. Moreover, their high activity scores and questionnaire ratings suggest that they readily made the shift across consecutive class sessions from one type of objective to another type and from one set of teaching approaches to another set.
Participants' perceptions of each activity were also assessed in terms of its providing a beneficial learning experience (e.g., having tasks and structuring an online environment in which they could have a full and open discussion of concepts pertaining to behavior management). Findings revealed that participants rated Activity 1: Class Discussion of Readings and Activity 6: Chat on Medication as a Behavior Management Approach the highest in terms of providing an effective learning experience. These were followed by Activity 2: Application of Management Procedures, Activity 5: Integrating Assistive Technology in Lessons and Interventions, Activity 3: Matching Management Problem Hypotheses to Case Studies, and Activity 4: Debate of Management Philosophies. Participants rated the first five activities from 100% to 86% as beneficial for learning course concepts and interacting with classmates.

Although the results from the participants' assignment scores, activity ratings and comments on open ended questions suggest that an online format can be very effective for teaching an array of objectives, there is some indication that this approach may be limited for certain types of activities. For example, in Activity 6: Chat on Medication as a Behavior Management Approach a few participants indicated that some classmates dominated the chat session by stressing their own questions and concerns, which hampered discussion of a wide range of issues. Also, the communication system used for the course tended to delay and then bunch up chat postings for participants using dial up connections and this problem made it difficult for some class members to follow the discussion thread. Even with these problems, participants indicated in survey responses that they benefited substantially from having a chat with an outside expert on the use of medication as a behavioral intervention. A comparison of an online chat with a face-to-face small group discussion with an expert on an issue such as this could give valuable insight into the benefits and limitations of each instructional approach.

Another activity in which an online format might have had some drawbacks is Activity 4: Debate of Management Philosophies. All participants achieved high scores on the activity so the instructors viewed it as very effective in teaching the objective, but only 63% of the participants rated it as an effective learning experience. Some teachers' comments stated that they had difficulty defending a theoretical position they were opposed to, and others said they did not feel the online format provided an open enough structure for arguing orientations and viewpoints. A debate format is difficult to use in any instructional setting because of the preparation and mechanics involved and it may especially be difficult to structure in an asynchronous online environment that relies heavily on a text-based, independent and delayed response format.

A more general concern expressed by several participants is that a 1-week timeframe for activities limited their ability to prepare for and participate in them. For example, Activity 3: Matching Management Problem Hypotheses to Case Studies and Activity 4: Debate of Management Philosophies required working in teams of three or four to put together an initial posting and then again in teams to review and critique classmates' responses. Activities 3 and 4 required more tasks and logistical requirements than the other four activities and these demands may have affected participants' ratings of the activities. Some reported having difficulty getting in touch with teammates, dividing responsibilities among team members and scheduling enough time to prepare adequate responses. Activities 3 and 4 were the only ones in which teachers interacted in small teams to prepare collaborative postings and participants gave them the lowest ratings. However, it is unclear to what extent factors such as the extra work required, the leadership needed to facilitate team interactions, and the division of labor for completing tasks affected ratings. On the other hand, it was apparent from reviewing assignment postings and instructor scores that teams where one member quickly assumed a leadership role were able to meet the posting deadlines and achieve the highest scores. Although studies have investigated online group collaboration on a broad level (e.g., Wade, Niederhauser, Cannon, & Long, 2001), future research should examine specific factors, such as team leadership, time frame, and task complexity that can contribute to or hamper small group activities.

An important limitation of the study is that it did not control for such variables as (a) differences in the tasks demands of the activities, (b) differences in the difficulty of
the content covered in them and (c) the serial nature of the activities. For example, all the activities were scheduled for 1 week and it was apparent from comments to open-ended questions that participants perceived differences among activities in the number of postings they were to make and the preparation required to make them. It is possible that differences in the amount of work required for an activity and the time available for it may have affected their scores and responses to survey questions. Also, there was no attempt to control for the difficulty level in the content of the activities. For example, it is likely that participants were familiar with many of the management procedures covered in Activity 2 but had little or no prior knowledge of many aspects of the medication issues covered in Activity 6. Such differences may have affected their ability and incentive to perform activities. Finally, the instructional objectives and activities focused on separate chapters from the text with supplemental material sometimes added. Each of the chapters covered content that was fairly discrete from the others but it is possible that some of the earlier content served as a foundation for later activities. No provision was made to control for this variable and it may also have affected participant scores and perceptions.

There are several implications for the design of online instructional activities that follow from the study. First, instructors should schedule sufficient time for teachers to carry out an activity by establishing priorities among the array of concepts that could be covered. For example, the instructors of this course felt that 1 week was not sufficient for participants to fully engage in some of the activities even though the majority of them met the objectives. They felt the next time they offer the course they need to strike a better balance among such factors as the depth and breadth of the content coverage and the amount and level of classmate interaction they require. Second, instructors should emphasize the importance of good online communication techniques, organization, and ethics. These elements could help teachers feel comfortable in taking on a leadership role in small group activities and in contributing personal views without being perceived as rude or forceful by classmates. One technique would be for instructors to provide clear guidelines and directions on the parameters of classmate interaction. For example, the instructors felt they should have demonstrated better strategies for teachers to respond to one another's postings without being seen as challenging, superficial or overly critical. Third, instructors might schedule fixed times in online chats to focus on specific issues rather than allow for a free ranging discussion. For example, the course instructors might have scheduled discussion on one set of topics between 4:00 and 4:30 pm, another set between 4:30 and 5:00 pm, and so on. This approach might have mitigated the problem of the chat losing its focus as participants rushed to get their own questions answered. Fourth, in an online debate instructors might have teachers choose their preferred position to argue unless there are specific benefits from having them take positions they do not support. They would naturally have a more vested interest in presenting their views and defending their positions. On the other hand, there may be compelling reasons to have teachers research issues they are initially opposed to and future studies should examine the circumstances in which to plan such activities. The instructors felt it would have been beneficial to split the class according to preferred and non-preferred positions so they could compare the postings and ratings of the two groups.

The use of online learning to prepare teachers on emergency licenses is an unfolding pedagogical innovation and its importance is increasing as teaching positions become harder to fill with fully certified personnel. A key factor in facilitating online teacher education is designing instructional activities that support achievement of learning objectives. Future research should continue to examine ways to teach an array of teacher education objectives, to sequence and organize online activities and to foster effective interaction among classmates. For example, the objective of showing prospective teachers how to prepare lesson plans usually requires a step-by-step process taught over several class sessions. Research should examine the effectiveness of online approaches in achieving complex objectives like this that require activities which are sequential and that build to integrated and complicated teaching practices. Similarly, future research should also investigate objectives that involve a close link
between theoretical concepts and their field application, such as in learning to use specific remedial reading strategies or math teaching techniques in a particular classroom setting. Here the challenge is to explore effective online strategies for integrating coursework and field experiences.

References


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