A Comparison of Hybrid and Online Instruction in Two School Library Media Graduate Courses: A Preliminary Study

By Audrey Church and Frances Reeve

Audrey Church
Longwood University
201 High Street
Hull 232
Farmville, VA 23909

Frances Reeve
Longwood University
201 High Street
Hull 228
Farmville, VA 23909
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Abstract:

This study conducted at a small southeastern university compared student learning as measured by pre- and post-tests, faculty time spent, student time spent, and student-completed course evaluations for two graduate level school library media courses offered in both hybrid and fully online formats. Using pre-test scores as covariates to control for any differences in students enrolled in online and hybrid sections of the courses, a univariate analysis of variance was run on post-test scores with format of course (online or hybrid) as the independent variable. Independent samples t-tests were used to compare faculty time spent for format of course, student time spent for format of course, and course evaluations for format of the course. No statistically significant difference was found between online and hybrid for student time spent or for student-completed course evaluations. There was a statistically significant difference, however, for faculty time spent and for student learning, as measured by the course post-test. Further study comparing courses offered in hybrid and fully online formats is recommended. Additional research should involve more faculty members, at different institutions, and across disciplines.
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Introduction and Overview

As colleges and universities strive to meet the needs of their diverse student learners, distance education becomes more popular. Tracing the history of distance education, we move from print-based correspondence courses to audio and video delivery of instruction to online, Web-based courses. By comparing initially reported data from 1997 from the National Center for Education Statistics with subsequent reports issued in 2000 and in 2003, it is possible to analyze the trend of distance education in higher education over a period of time. Thirty-three percent of postsecondary institutions offered courses via distance education in the 1994-1995 academic year compared with 34% in 1997-1998 (Lewis, Alexander, and Faris 1997; Lewis and others 1999). By the 2000-2001 academic year, this percentage had almost doubled, with 56% of institutions offering distance education courses (Waits and Lewis 2003).

The upward trend of institutions to offer distance education courses is reflected in the increased number of courses available in this format. In 1994-1995, almost 26,000 distance education courses were offered (Lewis, Alexander and Faris 1997). By 1997-1998, this number had slightly more than doubled with over 54,000 courses offered (Lewis and others 1999). The number of courses offered then greatly increased to over 127,000 in 2000-2001 (Waits and Lewis 2003). Library science courses, specifically school library media courses, are no exception.

According to the 2002 Library and Information Science Education Statistical Report from the Association of Library and Information Science Educators (ALISE), of the 994 courses
offered by graduate library and information science education programs in ALISE institutional members, 70 were offered as hybrid/multimedia courses whereas 350 were Internet/Web based. A search of the American Library Association’s Directory of Accredited Programs for “School Library Media Program” produces a list of 47 institutions. Limiting the search to schools that offer school library media programs “Primarily face-to-face with select online courses offered” produces a list of 20 schools (LIS Directory 2006). Limiting the search to schools that offer school library media programs “Primarily online with some face-to-face courses required” produces a list of nine schools while limiting the search to schools with “100% online program available” for school library media produces a list of 12 institutions (LIS Directory 2006). It must be noted, also, that this list includes only ALA-Accredited Masters Programs in Library and Information Studies which offer a school library media option. It does not reflect the additional 33 institutions which offer Nationally Recognized NCATE-AASL Reviewed and Approved School Library Media Education Programs (NCATE-AASL 2006), many of which also offer distance education options.

At our small southeastern university, our program of study requires that a student successfully complete 12 three-credit courses to earn the Master of Science in Education with a concentration in School Library Media. Two of these courses are education courses, while the remaining ten are school library media courses. The ten school library media courses are typically taught in hybrid, or blended, format, combining face-to-face class sessions with online coursework. Of the ten courses, four are also sometimes offered in fully online format. The majority of our students are non-traditional, adult learners, part-time students, who appreciate the convenience and flexibility which hybrid and online courses offer.
During the 2004-2005 academic year, our institution began to promote and support fully online courses, providing a week-long Online Technology Institute in May 2005. The authors attended this institute which focused on instructional design and pedagogical issues in the development of online courses. As we completed the institute and prepared to offer two courses in fully online format for the first time during the fall 2005 semester, we had questions regarding student learning in hybrid v. online courses, the amount of time that our students and that we, as faculty, would invest in hybrid v. online courses, and how student-completed faculty/course evaluations might differ for courses taught in the two formats.

For the purposes of this article, the following definitions are used:

**“Hybrid courses”** are courses in which a significant portion of the learning activities have been moved online, and time traditionally spent in the classroom is reduced but not eliminated. The goal of hybrid courses is to join the best features of in-class teaching with the best features of online learning to promote active independent learning and reduce class seat time” (Garnham and Kaleta 2002, 1).

**Online courses** involve “delivery of class via the World Wide Web” (Witta 2005, 37). “The learning process is occurring through the Internet. The instructor and students are not constrained by time or physical separation” (Wang 2005, 1862).

**Review of the Literature**

**Student Learning Performance**

In his 1999 work, *The No Significant Difference Phenomenon*, Russell reported no significant difference in student learning outcomes using various instructional delivery methods. His review of 355 studies conducted from 1928 to 1999, however, preceded the great influx of hybrid and online/Web-based instruction (No Significant Difference 2006). Subsequent research
since Russell’s review shows that student learning performance is equal to or higher in hybrid courses than in courses taught in traditional face-to-face format.

Seventeen instructors from five University of Wisconsin campuses participated in the Hybrid Course Project in 2000-2001, transforming and offering their traditional courses in hybrid format. They found that “student interactivity increased, student performance improved, and they could accomplish course goals that hadn’t been possible in their traditional course” (Aycock, Garnham, and Kaleta 2002, 6). Over a two-year period, three professors at Baldwin-Wallace College taught eight courses in hybrid format, concluding that students in the hybrid classes achieved learning outcomes equal to or higher than those in face-to-face classes. When major course projects were assessed by outside assessors using a blind-review process, scores for projects completed by students in the hybrid courses were 10 to 12 percent higher than those completed by students in face-to-face courses (Martyn 2003).

Research also shows that student learning in online/Web-based courses is equivalent to that in traditional face-to-face courses. In a study examining student learning outcomes in a behavior management methods course taught in both on-campus and online format by five different instructors, there were no significant differences in learning across environments when comparing quiz scores and final course grades. Follow-up assessment of student’s teaching performance also showed no significant difference (Caywood and Duckett 2003). Comparing midterm and final examination scores for students taught in the traditional 15-week course format, an eight-week summer course, and an eight-week online, Web-based course, Witta (2005) found no significant difference. Because final examination mean scores were highest for students in the online course, Witta contended that learning in the online format may promote greater attentiveness to written material.
Johnson, Aragon, and Shaik (2000), comparing grades on both final major course projects and final course grades, also found no significant difference in student learning outcomes between students taught in online and in face-to-face learning environments. Leonard and Guha (2001), reporting on their study of preservice teachers’ perceptions of the benefits of completing courses online, assert that taking online courses strengthens these future teachers’ technology skills, a bonus of the online format.

*Time Invested, Faculty and Student*

*Faculty*

Research shows that more time is required by faculty to create hybrid courses than traditional courses. Instructors involved in the Hybrid Course Project at five campuses of the University of Wisconsin reported “developing the hybrid course had required more time than developing traditional courses, primarily because of time and effort required to redesign the course, learn new teaching techniques, and acquire new technology skills” (Garnham and Kaleta 2002, 3).

An examination of the literature regarding faculty time in developing online courses reveals mixed findings. One study completed by Altalib and others (2002), comparing time and effort spent by instructors in preparing traditional and online courses, found no significant differences. The majority of the research, however, seems to indicate that more time is spent by faculty for the development and offering of fully online courses as opposed to traditional courses. SchWeber, Kelley, and Orr (1998) report that “while web classes are smaller (median 23) than in person classes (median 30), web faculty spent about 2-5 hours more per week in their classes than in person faculty” (348) in courses offered by the Graduate School of Management and Technology, University of Maryland University College.
A study at Florida State University explored interactions among six lead faculty members, 18 online mentors, and students. Faculty members designed and guided the online courses, with day-to-day details, instruction, and grading then handled by the online mentors: “mentors reported devoting an average of 50 minutes per student per week during the first semester, spending approximately 12 to 15 hours per week on their classes. In the spring, this was reduced to an average of 20 minutes per student per week, and approximately 8 to 10 hours per week for each class” (Easton 2003, 102). Tomei (2006) found that faculty members spent a minimum of 14 percent more time in online courses than in courses offered in traditional format.

Student

Searches for research documenting student time spent on task for hybrid or online courses as opposed to time invested in traditional face-to-face courses produced limited results. In one study, Leonard and Guha (2001) reported that students enrolled in an online education course and an online math education course “indicated spending 50 minutes to 4 hours following the professor’s instructions and interacted with the professor at least 1 hour per week. The students also mentioned that they spent from 0 to 2 hours a week interacting with their peers” (55).

Student Evaluation of Faculty

Student satisfaction with courses and faculty is closely related to effective instructional design, perceptions of online communities of learners, and interaction with the instructor and among fellow students (Askar and others 2005). Spooner, Jordan, Algozzine, and Spooner (1999) compared end-of-course evaluations completed by graduate students in a teacher education program for on-campus and distance courses. No significant differences were found in overall ratings for course, instructor, teaching, or communication. In contrast, Johnson, Aragon,
and Shaik (2000) found that students enrolled in face-to-face courses had slightly more positive perceptions about the teaching effectiveness of the instructor and overall course quality.

Research located in the review of literature compared elements from hybrid courses to those in face-to-face courses or elements from online courses to face-to-face. The aim of this study was to explore differences in student learning in hybrid v. online courses, the amount of time that faculty and that students invest in hybrid v. online courses, and how student-completed faculty/course evaluations might differ for courses taught in the two formats.

Research Questions

Research questions for this study were as follows:

1. Is there a significant difference in student learning between hybrid and online courses as measured by pre- and post-tests?
2. Is there a significant difference in time invested by faculty members in preparing for and teaching hybrid and online courses?
3. Is there a significant difference in time invested on coursework by students in hybrid and online courses?
4. Is there a significant difference in student-completed evaluations of faculty in hybrid and online courses?

Methods

Participants

During fall 2005 semester, we offered our Collaborative Instructional Partnerships course and our Administration of School Library Media Centers course in both online and hybrid formats. One author of the study taught three sections of Collaborative Instructional Partnerships, one online section with 20 students and two hybrid sections containing a total of 42
students. The second author of the study taught three sections of Administration of School Library Media Centers, one online section with 20 students and two hybrid sections containing a total of 27 students. Participants in the study were the students enrolled in these courses: N=109; Collaborative Instructional Processes: n=62; Administration of School Library Media Centers: n=47. Content, activities, assignments, and projects were identical for the course sections, whether the course was taught online or in hybrid format.

Instrumentation/Measures

Measurement of student learning was assessed in both courses by instructor-created 10 item pre-tests and post-tests (see Appendix A). To measure time invested, students and faculty members logged all time spent on the courses: students in hybrid courses were instructed to count travel time to and from class sites in addition to all time spent working on coursework and attending face-to-face class sessions. Students in online courses were instructed to count all time spent working on coursework, including communication with fellow students and the instructor.

Faculty members logged all hours spent developing the courses, creating instructional materials, posting materials on Blackboard, interacting with students, and grading student work. For hybrid courses instructors logged travel time to and from class sites as well as time spent in face-to-face class sessions. For online courses instructors logged hours spent attending the University’s Online Technology Institute as well.

At our institution, students complete course evaluations at the conclusion of the course. Thirty-seven statements appear on the course evaluation (see Appendix B). From the thirty-seven statements, the following eleven were selected for comparison:

- Rate the instructor overall
- Rate the course overall
• Rate your learning overall
• Promoted discussion
• Presented material in a clear and organized way
• Summarized material in a way that aided retention
• Clearly stated the objectives of the course
• Explained course material clearly
• Encouraged the consideration of ideas from diverse perspectives
• Gave projects, tests, or assignments that required critical thinking or problem solving
• Gave projects, tests, or assignments that required original or creative thinking

For the first three items, student response choices were “Poor,” “Below Average,” “Average,” “Above Average,” and “Excellent.” For the remaining eight, student response choices were “Hardly Ever,” “Occasionally,” “Sometimes,” “Frequently,” or “Almost Always.” Point values of one to five were assigned for computation purposes. “Not applicable/Don’t know” was also a choice and did not count in computations.

**Procedures**

Pre-tests were administered during the first session of the hybrid courses and during the first week of the online courses. Students were instructed to answer questions to the best of their ability and were assured that neither pre- nor post-test scores would impact their course grade in any way. Post-tests were administered during the final session of the hybrid courses and during the final week of the online courses. Pre- and post-tests were identical.

Both students and faculty members maintained logs of hours spent throughout the course. Students were assured that the logs were for research purposes only and, again, would not impact
their course grade in any way. These logs were submitted to the instructors at the end of the course. Students completed course evaluations during the final session of the hybrid courses and the final week of online courses. Since faculty members were involved in the study both as participants and researchers, data and findings were independently reviewed by the Assistant Dean of our College of Education and Human Services.

Results

Our first research question was as follows:

Is there a significant difference in student learning between hybrid and online courses as measured by pre- and post-tests?

Using pre-test scores as covariates to control for any differences in students enrolled in online and hybrid sections of the courses, a univariate analysis of variance was run on post-test scores with format of course (online or hybrid) as the independent variable. Results of the ANOVA showed that mean post-test score for students enrolled in online courses was 66.58 (SD=19.63); mean post-test score for students enrolled in hybrid courses was 75.00 (SD=18.69); the difference was statistically significant at the p<.05 level.

Our second research question was as follows:

Is there a significant difference in time invested by faculty members in preparing for and teaching hybrid and online courses?

Hours per student per week for online courses (M=0.49, SD=0.44)) were compared with hours per student per week for hybrid courses (M=0.26, SD=0.30) using an independent samples t-test. There was a statistically significant difference in number of faculty hours spent with p<.05.

Our third research question was as follows:
Is there a significant difference in time invested on coursework by students in hybrid and online courses?

An independent samples t-test comparing number of hours students spent on online (M=81.52, SD=47.15) versus hybrid courses (M=89.19, SD=29.74) showed no statistically significant difference at p<.05 level.

Our fourth research question was as follows:

Is there a significant difference in student-completed evaluations of faculty in hybrid and online courses?

An independent samples t-test was run on each of eleven items from course evaluations for online versus hybrid courses. As shown in Table 1, although mean scores were slightly lower for online than for hybrid for every item, no statistically significant differences were found, p<.05.

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<th>Table 1 Course Evaluations</th>
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<td>Promote Discussion</td>
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<td>Clearly State Objectives</td>
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<td>Explain Clearly</td>
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<td>Encourage Diverse Ideas</td>
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<td>Promote critical thinking</td>
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<tr>
<td>Promote creative thinking</td>
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</table>
Discussion

Student Learning

Results of the ANOVA showed a statistically significant difference for post-test scores at the p<.05 level between students enrolled in hybrid and in online courses. Students in hybrid courses scored an average of 8.42 points higher (75.00-66.58) on the post-test than those students in fully online courses. Several items of caution should be mentioned. The ten-item pre-tests and post-tests were constructed by the instructors for the purposes of this study, and no validity measures were established. Also, an examination of final course grades earned by students in both hybrid and online courses showed no major difference in grade distribution.

Previous research studies, however, have compared student learning in hybrid to face-to-face and in online to face-to-face. Additional studies should be completed to compare student learning in hybrid to student learning in online. The findings from this preliminary study suggest that hybrid may provide the better format for student learning.

Faculty Time Invested

The two faculty members involved in the study spent almost twice as many hours per student per week in the online courses (0.49) as per student per week in the hybrid courses (0.26). The online courses consistently required more faculty time and effort in preparation and presentation of material and in interactions with students. This finding is consistent with the majority of studies reviewed from the literature.

Student Time Invested

Results of the independent sample t-test showed no statistical difference in total number of hours students in the online course spent (81.52) compared to total number of hours students in the hybrid courses spent (89.19) where N=100. A possible threat to validity is the self-
reporting aspect of the student log. Several students in both online and hybrid courses acknowledged when submitting their logs that they knew they had forgotten to log hours spent. It is worthy to note, however, that this lack of accurate reporting occurred in both formats of the courses.

Course Evaluations

On each of the eleven items examined, means are slightly higher for the hybrid course than for the online course. Independent sample t-tests showed no statistically significant difference, however. From these findings, it can be assumed that students are equally satisfied with courses, the instructors, and their own learning in both online and hybrid formats. It can also be assumed that faculty members teaching in both online and hybrid formats promoted discussion, presented, explained, and summarized material, clearly stated course objectives, encouraged consideration of ideas from diverse perspectives, and promoted both critical and creative thinking. Again, these findings are generally consistent with those found in the literature.

Implications and Suggestions for Future Study

Our findings suggest that there is no significant difference in time students spend or in faculty/course evaluations for two graduate level school library media courses taught in online and hybrid formats. There is, however, a statistically significant difference in time faculty members spend and in student learning as measured by a course post-test. Additional research involving more faculty members, at different institutions, and across disciplines is needed.

Our review of literature found comparisons of hybrid courses to traditional face-to-face and comparisons of online courses to traditional face-to-face. We did not find comparisons of hybrid and online courses. As distance education offerings increase at colleges and universities
and choices of formats and instructional design options are made, it is imperative that we have
data comparing courses offered in these two formats: hybrid and online.
Works Cited


http://www.uwsa.edu/ttt/articles/garnham2.htm [2006, August 26].


Appendix A

EDSL660
Posttest
Fall, 2005

1. True or False The Virginia Standards of Accreditation specify the number of books per pupil which school libraries in Virginia should have.

2. In one sentence, define information literacy.

3. Which of the following is not a theme found in *Information Power: Building Partnerships for Learning*?
   a. Collection development
   b. Collaboration
   c. Leadership
   d. Technology

4. In *Information Power: Building Partnerships for Learning*, the information literacy standards for student learning are divided into how many categories?

5. True or False There is considerable overlap between the information literacy standards for student learning, the Virginia Standards of Learning, and content area standards at the national level.

6. True or False Collaboration between a teacher and the library media specialist involves co-planning, co-teaching, and co-evaluation of student work.

7. Name the four roles of the library media specialist as set forth in *Information Power: Building Partnerships for Learning*.

8. Keith Curry Lance is best known in the library field for
   a. His work at the Library of Congress
   b. His textbook on the curricular role of the school library media specialist
   c. His studies which show the impact of school libraries on student achievement
   d. His presentations at state and national conferences.

9. Who developed the Big 6 research process model?
   a. Barbara Stripling and Judy Pitts
   b. Marjorie Pappas and Ann Tepe
   c. Julie Tallman and Marilyn Joyce
   d. Mike Eisenberg and Bob Berkowitz

10. True or False Building level library media specialists should be considering how to document the impact that they have on student achievement.
1. List 5 of the 6 components of an action plan according to AASL.

2. Fair use allows a school library media specialist to make one backup (for archival purposes) of each videotape and computer software program purchased for the library. (True or false)

3. A creative work without a notice of copyright is in the public domain? (True or false)

4. What is FVR (in three words)?

5. What is the theme of the 2005 VEMA conference?

6. Who is Peter Milbury? (Circle the correct answer.)
   - President of ALA
   - President of VEMA
   - Moderator of LM_NET
   - Author of several school library media textbooks

7. The Virginia Standards of Quality require that all school libraries with 1000 students have two full-time librarians and 1 full-time clerical staff member. (True or false)

8. Line item, performance, PPBS, and zero-based are four types of budgets. (True or false)

9. Suggestions for designing a new school library media center are provided in *Information Power: Building Partnerships for Learning*. (True or false)

10. According to David Loertscher’s taxonomies, what is the most important role of the school library media specialist?
## Appendix B

### Longwood University

**Student Assessment of Instruction**

**INSTRUCTIONS**

<table>
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<th>Acceptable marks</th>
<th>Unacceptable marks</th>
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<td>1. Use only No. 2 pencil. Otherwise, Time Record cannot be processed.</td>
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<td>2. Each circle should be filled with a dark mark.</td>
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<td>3. Erase completely any incorrect marks.</td>
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<tr>
<td>4. Do not tear, fold, or staple this form.</td>
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**Directions:** Please answer the following questions about this course. Your response will be kept completely confidential. Your thoughtful answers to these questions will provide helpful information to your instructor.

---

### Compares to other courses...

1. How much reading was required?  
2. How much writing was required?  
3. How much other work was required?  
4. How difficult was the course?  
5. How hard did you work?

**Attitudes:**

- No, definitely not  
- No, probably not  
- Neutral  
- Yes, probably  
- Yes, definitely

6. Do you have a more positive attitude about this subject after taking this course?  
7. Would you like to take another course from this instructor?

**Workload:**

- None  
- 1 to 4  
- 5 to 8  
- 9 to 12  
- More than 12

---

### Overall Evaluation:

1. Rate the instructor overall  
2. Rate the course overall  
3. Rate your learning overall

---

### Assessment of Teaching: The instructor...

12. Promoted discussion  
13. Presented material in a clear & organized way  
14. Encouraged students to express themselves  
15. Was enthusiastic about the subject matter  
16. Considered issues from an ethical perspective  
17. Gave exams that covered important material  
18. Spoke with expressiveness & variety in tone of voice  
19. Demonstrated the significance of the subject matter  
20. Made it clear how each topic fit into the course  
21. Offered explanations for grades earned  
22. Summarized material in a way that aided retention  
23. Clearly stated the objectives of the course  
24. Explained course material clearly  
25. Related course material to life situations  
26. Gave exams that were based on course content and requirements  
27. Encouraged the consideration of ideas from diverse perspectives  
28. Provided feedback on exams and papers in a timely fashion  
29. Offered the opportunity to practice or apply skills through exercises and projects  
30. Was available for consultation with students outside of class  
31. Gave projects, tests, or assignments that required critical thinking or problem-solving  
32. Gave projects, tests, assignments that required original or creative thinking  
33. Was clear in stating expectations for papers or other assignments  
34. Gave helpful feedback on exams and assignments  
35. Used instructional technology to enhance presentations  
36. Gave projects or assignments that required the use of computers  
37. Demonstrated how technology can be used to search for information, present information, or solve problems

**Extra Questions:** If your instructor has provided additional questions, please respond to them in the space designated below.

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