Getting Online with Student Satisfaction: An Exploratory Study

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Background

Since its early beginnings, distance education in a variety of formats has provided students with opportunities that may otherwise be unavailable. The explosion of the Internet and information age within the past two decades has encouraged more university programs to offer diverse forms of distance education. In 2008, the National Center for Education Statistics reported 82 percent of public four-year degree-granting institutions offered graduate courses in a nontraditional format (Parsad, Lewis, & Tice, 2008, p. 5). This access is not only advantageous for the students but to the community as well because it allows for the creation of a diverse workforce, often specially crafted to fulfill specific shortages within the community.

A series of reports from the Virginia Department of Education (VDoE) and the Virginia Educational Media Association (VEMA) identified such a need for licensed school librarians in Virginia. School librarians were listed on the state's "Top 10 Critical Shortage Teaching Endorsement Areas in Virginia" for the 2003-2004 and 2008-2009 school years (VDoE, 2005; 2008a). A critical shortage area is defined by VDoE as: "(1) shortages by subject matter as designated from the top ten academic disciplines identified in an annual survey of school divisions; or, (2) a school personnel vacancy for which a school division receives three or fewer qualified candidates" (VDoE, 2008a). VDoE uses a survey to collect data regarding personnel licenses from its 132 school divisions each year. The need for critical shortage educators is so great that in 2001, the Virginia General Assembly passed legislation allowing retired teachers to be hired for these positions with process revisions made in 2008 (VDoE, 2001; 2008b). VEMA, the professional organization for school librarians in Virginia, echoed the need for licensed school librarians with a 2000 survey report drafting a timeline of current librarians' expected retirements (Wilson, 2000). This report estimated that over half of surveyed school librarians were planning to retire by 2010. Data from this report identified two specific regions of the state as having greater need than others in Virginia. These regions included isolated, rural areas of southwestern Virginia and more heavily populated, urban areas in northern Virginia.

In order to address this need for licensed school librarians in Virginia, Library Science faculty in the Darden College of Education at Old Dominion University (ODU) received a three year grant from the Institute of Museum and Library Services (IMLS) to develop and implement an online program to educate school librarians. The program was designed specifically for licensed teachers to earn their endorsement as school librarians in the two regions of Virginia labeled as critical shortage areas. Program recruitment began in 2005 with the first cohort of students starting classes in the spring of 2006. Recruitment continued throughout this time with the second cohort of students beginning coursework in the spring of 2007. The endorsement program consisted of eight classes with students taking two each semester and finishing coursework in approximately a year and a half, or four semesters. Students had the option of earning the degree of Master's of Science in Elementary or Secondary Education with ten credits of additional coursework.

Purpose

The main purpose of this study was to research student satisfaction in an online program in an effort to influence and develop best practices in distance education. This research documents the satisfaction of two separate cohorts of licensed and working teachers enrolled in the same online program to earn their school library endorsement. The first cohort of students finished the program in the spring of 2007, and their satisfaction with the online program was measured at that time (Reed, 2007). Pribesh, Dickinson, and Bucher (2006) also studied this first cohort of students and compared their course performance with face-to-face students enrolled in the same course the same semester. The study reported here specifically measured the graduate student satisfaction of the second cohort of students to progress through the online program; these students reached program completion one year after the first cohort in spring of 2008. Then, the research compared the satisfaction levels of both cohorts. Based on the high levels of student satisfaction documented for the first cohort and the duplication of coursework, procedures, and instruction, it was anticipated that the results from this study would reveal high levels of satisfaction for the second cohort of students in the online program. The researcher also predicted the second cohort would exhibit lower levels of satisfaction in the same areas as the first cohort, mainly those

relating to course workload, study environment, and comparisons with face-to-face modalities.

Research Questions

Research questions focused on three areas of satisfaction addressed by the testing instrument, in addition to differences between the satisfaction levels of the two cohorts of online students. These questions included: (a) What was the level of student satisfaction concerning communication in the online program?; (b) What was the level of student satisfaction concerning the quality of courses in the online program?; (c) What was the level of student satisfaction concerning the online delivery of courses in the online program?; and (d) Are there statistically significant differences between the satisfaction levels of the first and second cohort of students in the online program?

Literature Review

An extensive review of the literature illustrated various methodologies and lenses used to research student satisfaction with distance education. This researcher chose to examine the literature studying satisfaction based on the areas of communication, quality, and online delivery of courses as highlighted by the testing instrument used to collect data for this study. This instrument was first developed by Biner (1993) to measure student satisfaction in televised courses and later modified by Bolliger (2004) to specifically address satisfaction within online programs. Many studies have researched how these three factors, communication, quality, and online delivery of courses, affect student satisfaction with the online format. Consequently, a wide variety of contradicting and concurring findings have emerged from the collected data.

Communication

Communication in an online course consists of feedback between students and instructor or other program staff in regards to policies and procedures as well as grading. Accessibility and availability of instructors and program management are important concerns of online students (Reed, 2007; Wang & Lin, 2007). Research from Mupinga, Nora, and Yaw (2006) revealed four of the top five expectations students had prior to beginning online coursework related to issues of communication including feedback on student work, email and phone call responses, verifying receipt of student work, and basic communication with instructors. Communication in an online setting requires much effort from all parties involved. Questions and issues easily resolved in a face-to-face setting can escalate into larger miscommunications when online students do not take the time to post questions, read questions from classmates, or email instructors (Frey, Alman, Barron, & Steffens, 2004). Standardization of policies, procedures, and organization among online programs helps to facilitate communication and understanding for students, staff, and faculty (Frey et al., 2004). Research has also suggested that communication is integral for project-based learning activities in online programs and can affect grading outcomes for students (Pribesh, Dickinson, Bucher, 2006).

Findings in the literature concerning interaction among online course participants, including classmates, instructors, and other program staff are contradictory. Some research suggests interaction is a very important factor in course satisfaction (Bikowski, 2007; Bray, Aoki, & Dlugosh, 2008; Lim, Morris, & Yoon, 2006; Sher, 2009). In a longitudinal case study following pre-service teachers from their first class in a graduate education program to the end of their first year employed as teachers, participants perceived interactions with classmates as being among "the most important activities preparing them for knowing how to teach" (Schweizer, Hayslett, & Chaplock, 2008, p. 19). Interaction between the student and content has also been related to online satisfaction. Higher levels of satisfaction were found to be correlated to printing out materials from an online course (Lim, Morris, & Yoon, 2006). Other research indicates the opposite. Opportunity costs associated with the flexibility of the online format were found to outweigh the need for class interaction for some students (Braun, 2008; Lim, Kim, Chen, & Ryder, 2008). Moreover, Wyatt (2005) measured no significant difference between students' perceived levels of interaction in an online and traditional classroom.

Quality of Courses

According to the annual *National Online Learners Priorities Report* in 2007, the quality of online courses is an important area where many programs still need improvement (Noel-Levitz, Inc.). Perceptions of quality are influenced by a variety of factors including instructors and their individual teaching styles. Studies have shown that it is important for instructors to develop and adapt teaching styles to accommodate varying learners in an online setting just as they would in a traditional classroom (Hutchinson, 2007; Rovai, 2002). While studies have sought to find a precise learning style prevalent in students enrolled in online coursework (Hutchinson, 2007; Liu, Magjuka, & Lee, 2008), others have found a prevailing preference for independent learning as a unifying characteristic among many online students. Using the Myers-Briggs Cognitive Style Inventory to measure personalities, Mupinga, Nora, & Yaw (2006) found the majority of online students in their study of 131 undergraduates tested as introverts. According to researchers, this finding was "not surprising because

introverts need space and time alone, making the Web learning environment ideal" for this particular personality type (p.187). Bray, Aoki, & Dlugosh (2008) reinforced this finding with research indicating online students who had no preference for interaction had higher satisfaction levels than students who preferred interaction in the classroom.

Online Delivery of Courses

Student satisfaction with the online delivery of a course is also influenced by a variety of factors, some controlled by university programs and others by the individual student. The impact of course management systems chosen by online programs must be considered, in particular the methods and options offered by the course platform to facilitate the creation of a community among learners. More personal factors affecting student satisfaction include the students' personal technology proficiency in addition to the physical learning environment available to or developed by each student while they are engaged in online coursework.

Institutions use an array of different course management systems, including Blackboard and Moodle, for graduate online programs. While students, faculty, and staff may hold personal preference, studies have yet to reveal any significant differences among levels of student satisfaction associated with each type (Dahl, 2005; Frey et al., 2004). These course management software programs have many interactive communicative features that serve as connections for online participants to develop a class sense of community. Spirit, trust, common expectations for learning, and online interaction have been found to be critical in growing feelings of community with online courses (Rovai, 2002). In addition to these concepts, Bitkowski (2007) cited three main components to building a group identity in the online classroom: a) Individual factors like personality, interest, and computer proficiency; b) Sharing of course and personal information; and c) Support from faculty, classmates, and the technology itself. Throughout the literature, instructors have often used discussion boards to promote a sense of community within online classes (Frey et al., 2004; Gross, 2002). However, Stein (2004) advises that discussions work best when guided and summarized by the instructors.

Issues with technology are another factor of student satisfaction with the online delivery of courses that varies across the literature. Some students cite technology concerns as most critical in suggestions for program improvements (Bikowski, 2007; Bray, Aoki, & Dlugosh, 2008) while other studies have found that technology issues do not significantly affect student satisfaction in online formats. Research from Rodriguez, Ooms, & Montañez (2008) suggested that students with no prior online coursework were motivated to develop technology skills, but this factor did not influence their culminating course satisfaction. Further research also indicated no statistically significant relationship between Internet experience and student satisfaction (Sher, 2009). Conversely, Barakzai and Fraser (2005) measured computer expertise with a survey and reported that more tech-savvy students were more satisfied with their online program. In addition, Du (2004) measured a linear relationship between student levels of technology proficiency and perceived levels of satisfaction of their online courses: the higher their ability in using the technology, the greater the satisfaction reported by the students.

The literature review studied findings from various studies dealing with online student satisfaction. Researchers have discovered many factors influencing the satisfaction of online students in the areas of communication, quality of courses, and online delivery of courses. Communication, especially with instructors, is critical to student satisfaction in the online format. Student satisfaction with the quality of an online course can be affected by the instructor, class sense of community, and students' personal learning styles. Choices in course management systems and the personal learning environment of the student including technology proficiency have been found to not only affect student satisfaction, but also the student's ability to learn effectively. The literature review set a foundation for this study to achieve its main purpose: interpreting factors underlying student satisfaction in an effort to improve distance education.

Methodology

As distance education becomes more widespread, researching student satisfaction in online programs is critical in order to develop and inform best practices. The purpose of this research was to measure influencing factors on course satisfaction with two groups of students enrolled in the same online endorsement program for school librarians. Since data from an initial study will be compared with this study, the researcher replicated the research design and methodology of the first cohort study (Reed, 2007). Survey research was performed and data were investigated using an unpaired *t* test. The data gathered provide critical evaluative information regarding the perceived satisfaction levels of two similar populations of online students.

Respondents

The populations of students participating in both the first and second studies were similar in a number of ways. Both groups started with 20 full-time, licensed teachers from two diverse urban and rural regions of Virginia labeled as critical shortage

areas for school librarians. Both cohorts finished the program with 18 students, an attrition rate of 10%. Within these populations, 17 out of both groups of 18 students were female. Eleven and eight students from the first and second cohorts respectively resided in the targeted rural region, and seven and ten students respectively resided in the targeted urban region of the state. Chi-square Tests for Independence based on regional and gender differences indicated no statistically significant differences between the two groups of students. Also, both cohorts followed the same course schedule, workload, and residencies throughout the entire endorsement program. Tuition and fees as well as traveling stipends were supplied to both groups of students as part of grant funding from IMLS to begin the online program. The researcher recognizes a major challenge with comparing students between these two studies is that the two groups will naturally have different experiences and perceptions of this program based on their own personal expectations and circumstances as well as course discussions and interactions. Nonetheless, the above mentioned evidence supports the fact that these two groups are similar enough to compare survey data.

Testing Instrument

The survey instrument used to measure student satisfaction for both cohorts was first developed by Biner (1993) and then adapted by Bolliger (2004) to address the online format. The researcher for the first cohort of students slightly modified the instrument to specifically address this online program (Reed, 2007). The survey included 42 questions addressing the three factors of communication, quality of courses, and online delivery of courses. A final open-ended question asked the students for any other specific suggestions or comments they had regarding the program; however, due to space constraints, this information is not thoroughly examined in this paper. For the other 42 questions, respondents had a choice of five answers measured on a five point Likert Scale with "Strongly Agree" equaling five points; "Agree" equaling four points; "Do not know" equaling three points; "Disagree" equaling two points; and "Strongly Disagree" equaling one point. Students were sent this survey and a cover letter three weeks after they finished their online coursework. In the study of the first cohort, 16 of the total 18 students responded to the survey upon course completion in the spring of 2007, a response rate of 89 percent (Reed, 2007). This study focuses on the second cohort of students. Of the 18 total students in the second cohort, 15 surveys were returned at an 83 percent response rate.

After the surveys were returned, the data collected from the second cohort were analyzed based on measures of central tendency, including the mean and mode of each question on the five point Likert scale. Given that each survey question related to one of the three factor areas, the data were broken down into three groups and analyzed as part of determining the specific level of satisfaction within each of the three areas: communication, quality of courses, and online delivery of courses. After measuring and analyzing the data from the second cohort, an unpaired *t* test was used to provide comparison data between the two cohorts, measuring for statistically significant differences in each area. Although this was a step forward from the first study, replicate analysis measures were used to determine the overall student satisfaction with this online program in the first three years of its infancy based on the perceptions of its first two cohorts of students.

Findings

Student satisfaction with the online graduate program for licensed teachers to become school librarians was measured focusing on the factors of communication, quality, and online delivery of courses. The mean and mode of each question was calculated to determine the average level of student satisfaction for the differing questions. To this researcher, means higher than four indicated high levels of graduate student satisfaction. This figure was chosen because it represents a midpoint between the three highest satisfaction scores and this study was focused on the factors affecting students' positive levels of satisfaction in their online program. Since the raw data was not available from the study of the first cohort of students, the means of the second cohort were compared to the mean data recorded in the preliminary study with the first cohort (Reed, 2007) using an unpaired *t* test to measure statistically significant differences in satisfaction in the three areas. Carifio and Perla (2008) indicate this statistical procedure as an appropriate way to analyze such data.

Communication

Fourteen questions focused on the area of communication within the online program. The mean and mode for each question were calculated and compared to the mean and mode scores the first study measured using an unpaired *t* test. The only question found to hold a statistically significant difference was question three, dealing with timely feedback from instructors. The total mean for the fourteen communication survey questions was 4.28 with a mode of 4.00 for the second cohort and 4.04 with a mode of 4.00 for the first cohort. The grand total mean and mode for this area combining both cohorts' satisfaction levels were 4.24 and 4.00, respectively. Both cohorts measured similar satisfaction levels with communication in the online program, with the exception of the question regarding timely feedback of

assignments where the second cohort's satisfaction was significantly lower than the first.

Quality of Courses

There were nine survey questions concerned with student satisfaction surrounding the quality of courses in the online graduate program. The researcher calculated the mean and mode for each question as it related to course quality and then compared both scores to the first cohort's scores using an unpaired *t* test. For this area, no questions were found to have statistically significant differences in satisfaction levels between the two cohorts. The total mean of the nine questions addressing the quality of courses was 3.84 with a mode of 4.00 for the second cohort and 4.08 with a mode of 4.00 for the first cohort. The grand total mean and mode for this area was 3.96 and 4.00, respectively. Both cohorts measured similar satisfaction in the quality of courses for this online program.

Online Delivery of Courses

The survey instrument included eighteen questions directed towards satisfaction in the online delivery of courses throughout the online graduate program. For this area, no questions were found to have statistically significant differences in satisfaction levels between the two cohorts. The total mean for all eighteen survey questions dealing with the online delivery of courses was 4.16 with a mode of 4.00 for the second cohort and 4.04 with a mode of 4.00 for the first cohort. The grand totals for both cohorts measured a mean of 4.10 and a mode of 4.00. As with the other two areas, both cohorts measured similar levels of satisfaction with the online delivery of courses in this program.

This study measured a total mean of 4.17 with a mode of 4.00 for all of the survey questions, one through forty-two, for the second cohort of students to graduate from the online program for school librarians. The study of the first cohort of students measured a total mean of 4.13 and a mode of 4.00 for survey questions one through forty-two. No statistically significant difference was measured between the satisfaction means or the modes of both cohorts. The combined mean totals of the two cohorts calculated together measure a mean score of 4.15 with a mode of 4.00 for total student satisfaction in the online program as reported by its first two graduating classes.

Discussion

Overall, both cohorts reported high levels of satisfaction in the three targeted research areas of communication, quality, and online delivery of courses. To this researcher, Likert survey responses and measures of central tendency of 4.00 and above indicated high levels of satisfaction with the addressed areas of the online program. As predicted, there was no significant difference in the overall satisfaction between the two cohorts. However, the third survey question dealing with timely feedback did measure a statistically significant difference and is discussed further in the following analysis sections.

Communication

Two questions in this area scored means under 4.00 on the survey of the second cohort. Question three, "Feedback and evaluation of papers, tests, and other assignments were given in a timely manner," scored a 3.93; however, only two of the fifteen students marked responses under 4.00 with ten and three students indicating 4.00 and 5.00, respectively. The two lower scores caused this low mean of 3.93. The first cohort indicated a much higher level of satisfaction for question three with a mean score of 4.76. This was the only survey question indicating a statistically significant difference in satisfaction between the two cohorts. This difference may be due to the only two instructor changes between both cohorts of students. These two instructors were specifically identified in the final open-ended question on the survey by a number of students. One student commented that feedback from these two instructors was "almost nonexistent" while another stated they "didn't seem to know much about their subjects."

The second question indicating lower levels of satisfaction for cohort two was question thirty-five, "There was more interaction between all involved parties in the online courses in this program." Involved parties in the online courses included instructors, program directors, and program and department staff. The total mean score was 3.80 with five students each scoring 5.00 and 4.00, two students scoring 3.00, a response of "Do Not Know," and three students scoring 2.00, a response of "Disagree." With one third of the students scoring under 4.00, agreeing with the statement in question thirty-five, data indicate that the almost completely online interaction of this program may not have been appropriate for these specific learners. Conversely, these students may benefit from more interaction when engaged in learning, as supported by some of the research studied in the literature review (Schweizer, Hayslett, & Chaplock, 2008).

These survey responses reinforce the importance of communication within an online learning setting as concluded by previous researchers (Frey et al., 2004; Mupinga, Nora, & Yaw, 2006; Reed, 2007; Wang & Lin, 2007). The findings from this study also indicate that clear and concise feedback on assignments is critical to student satisfaction in an online course. Furthermore, these results suggest that interaction is an important consideration of both in-

structors and students participating in online coursework.

Quality of Courses

Two questions in this area indicated a mean satisfaction level under 4.00 for the second cohort. Question thirty-nine, "I was satisfied with the workload required for this program," scored a mean of 2.82 for cohort two. Dissatisfaction with the workload was reinforced by open-ended survey responses indicating that the workload was "intense" and "overwhelming" to some students. This low level of satisfaction could be connected to a variety of factors. First, students enrolled in this program were all working teachers and not full time students. They may need to take one class per semester instead of two in order to give them more time to engage in their class work, professional, and personal lives. Also, these students may benefit from support in developing their time management skills so the workload is more manageable for them. Another suggestion from the open-ended responses was to overestimate work times for projects and "include samples" of projects within the syllabus.

The other question measuring low satisfaction for the second cohort was number 40, "I was satisfied with my final grades for classes in this program," which scored a mean of 3.87. The reasoning for question 39 dealing with course workload may also explain the low mean for question 40. The instructor change for two of the courses could be another influencing factor. While the project and course requirements remained the same for both of these courses, instructors naturally bring varying expectations and personal standards. Nonetheless, consistency is key within an online program employing an intense course timetable such as the one studied here. In addition, as indicated in previous research, instructors must be prepared to adapt teaching to their specific students' strengths and weaknesses as learners in the online environment just as they would in a traditional classroom setting (Hutchinson, 2007; Rovai, 2002). This could be an influencing factor on the students' perceptions of the quality of online courses.

Online Delivery of Courses

The second cohort of students revealed a mean score of less than 4.00 out of a possible 5.00 for three questions within this area. Question fifteen, "I was satisfied with the use of chat software," scored a 3.73 with three students marking a response of five, "Strongly Agree;" eight students responding with a score of four, "Agree;" one student marking a response of three, "Do Not Know;" and three students indicating a score of two, "Disagree." This mean may be reflective of the students' personal familiarity with chat software and various types of interactive technology used in the coursework. These findings reinforce some research of online formats studying how students' technology proficiency affects their course satisfaction (Barakzai & Fraser, 2005; Du, 2004). Survey question thirty-seven asked respondents to agree or disagree with the statement: "I was familiar with the technology tools used at the beginning of this program." A mean response of 4.00 was measured, indicating higher familiarity levels with technology than alluded by the chat software question. Proficiency with chat software for cohort two may be an exception to the other technology tools utilized in this program. These other tools mostly included basic software programs.

Question thirty-eight, "My environment in which I completed my work was free of distractions," was another low mean for cohort two at 3.80. This question concerns students' personal learning setting at school, home, or other locations. These graduate students were working educators with varying responsibilities so some of them may not have had access to a distraction-free environment to complete online coursework. In addition, some of these students resided in more rural areas of Virginia that may not offer reliable Internet access as other students living in urban areas. In the final open-ended survey question, one student suggested "requir(ing) high speed Internet access" for future students.

The final question, "Compared to classroom-based courses, I was more satisfied with the online program," scored the second lowest mean on the entire survey at a level of 3.35. This was also the only question with a tri-modal response of 2.00, 4.00, and 5.00. It is questionable from this data whether these students were prepared to engage in an almost entirely online program; responses on question thirty-five dealing with online communication and interaction indicated a similar conclusion. Based on the modal data from this question, it is clear that students within the second cohort had very diverse reactions to the online format compared to their perceptions of traditional classrooms. These findings are consistent with the first cohort of students who measured a 3.10 mean for this question. These results suggest an importance in thoroughly preparing and advising students mentally and physically for the rigors of a completely online program.

With only one question scoring statistical significance in the difference between the satisfaction levels of cohorts one and two, the similarities in satisfaction between both groups of students warrant consideration. As reported earlier, both populations of respondents were very similar demographically. Chi-Square analyses indicated no statistical significance between the two groups' gender and regional differences. Aside from two instructor changes mentioned earlier in the analysis, both cohorts completed dupli-

cate coursework and an identical program timetable. In addition, tuition and travel stipends were paid for both groups of students through IMLS grant funding. With so many similarities between the first and second cohorts of students, it is not surprising that only one question measured significant difference in the students' satisfaction. The similarities of their responses regarding satisfaction in the areas of communication, quality of courses, and online delivery of courses provide empirical evidence to inform best practices for online programs.

Next Steps

The next steps of this research seek to address a large gap in the research of online distance education: longitudinal studies of former online students currently in their professional careers. Only one such study was found during the literature review and this research only looked at online students' first year in the classroom as professional teachers (Schweizer, Hayslett, & Chaplock, 2008). The field would be better capable of preparing quality professionals via the online format if more was known about these students after they enter the work force. What are the areas they have been ill-equipped to address as employed professionals? What are their perceptions of gaps in the content and preparation of their respective online programs? Further research with this study's population will provide insight into these questions.

This study's methodology and procedures will be duplicated in the longitudinal study of the same students. An identical version of the survey will be sent to the first and second cohorts of the online program for school librarians. This survey will measure the students' perceptions of their satisfaction with the online coursework now two and three years out of the program. It will be interesting to see if time has changed their perceptions of the program. Since they were only a few weeks out of the program the first time they responded to the survey, they may have different perceptions of the workload and their perceived interactions with classmates and instructors. Being active in the workforce for two and three years now, they may have been able to fully utilize the skills and even projects they completed during their time as an online student. Conversely, they may be able to indicate areas the online program should address in order to better prepare future school librarians in Virginia. This insight will be invaluable to improving the online program at ODU, and also in helping to inform similar programs instructing professional educators online.

In addition to curricular and instructional improvements in the online program, the survey will ask students to describe their professional life since graduating from the program. After finishing their coursework, did they pursue employment in a school library? If not, why? If so, where? Did they remain in their specific regions, labeled by the VDoE as critical shortage areas for endorsed school librarians (2005; 2008a)? It will be interesting to see if these students have been able to fill these staffing shortages, truly addressing ODU's initial inspiration for developing the online program. It is the hope of this researcher that following these educators from their experiences as online learners to their current positions and professions will ultimately guide improvements in the ways and means future students should be educated online.

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