Chapter 3

Methodology

An exploratory case study with mixed methods was used to examine the experiences and satisfaction levels of online students and faculty with online courses at DVC. The study took place during fall semester, 2007, (August 16th to December 16th). This is an exploratory case of satisfaction with online courses at DVC with two major embedded units of analysis: (a) adult students enrolled in a 3-4 unit full-semester online course, (b) faculty of online courses. The primary data sources for this study were obtained from student and faculty focus-group discussions, custom-developed surveys of students and faculty, and the enterprise information system which contains the electronic records for students and faculty. This study incorporates qualitative and quantitative data to explore, describe and infer significant factors of student and faculty satisfaction and success with online courses and support at DVC.

Participants

There were two primary populations in this study: (a) adult students enrolled in at least one 3-4 unit, full-term online course, and (b) faculty of online courses. The vast majority of community college students are adults, so minors were excluded for the sake of expediency (parental permissions required for minors), and so that adult learning theories would apply. Courses of 3-4 units were chosen to ensure that participants would have spent a comparable amount of time participating in an online course. This would not have been the case for students enrolled in courses ranging from 0.3 to 2 units. *Full-term* courses were chosen for the sake consistency and to ensure that

all students had a similar experience of course duration when the survey was administered in late-fall. By contrast, s*hort-term* courses are offered at different time intervals throughout the semester—early, mid-, late—and are compressed to provide the same course outline over a shorter period of time. Thus, students in short-term courses may have significantly different experiences due to the compressed nature of the course. So, for the sake of consistency and uniformity, and in an effort to reduce response bias, the student population was limited to students enrolled in 3-4 unit, full-term courses. A total of 1,653 students attending 78 course sections among 45 different courses met these criteria.

All DVC online instructors were included in the study—even those teaching courses less than three units or short-term. This was done because instructors were asked about their general experiences about teaching online courses. They were not asked to reply about one specific course. There were 85 online instructors for fall 2007 and this included faculty whose primary teaching location was at San Ramon Center, a satellite campus of DVC.

Data Collection

This study incorporated qualitative and quantitative data gathering methods. The primary data sources were collected from student and faculty focus groups, custom surveys of students and faculty, and the enterprise student information system. This study may be somewhat unique in that the student information system supplied the individualized data for each student which was eventually linked to the student survey responses. Thus, each student survey response would include individual demographics

and course grades. The student demographic data included ethnicity, age, gender, course load, and course grade. The student and faculty data resources are summarized in Appendices A and B. For the sake of organization and research analyses, the student and faculty data resources are organized into three groups: input variables, process variables, and outcome variables (Coldeway, 1988).

Focus Groups

Student and faculty focus group meetings were conducted between October 9th and November 2nd, 2007. The purpose of the focus groups was to engage currently enrolled online students and faculty in discussions about their experiences with online courses and use this information to guide the development of the surveys. To recruit students to the focus groups, an email invitation was sent to 1,955 students who were currently enrolled in 3-4 unit online courses (short-term and full-term). They were invited to attend a free lunch or dinner focus group meeting to "discuss your likes, dislikes and hopes for online courses and online support services at DVC." Pizza and beverages were offered as an incentive, along with the appeal to "help us to serve you better!" Twelve students replied to attend the lunch meeting and fifteen students replied to attend the dinner meeting. About two-thirds of the student responders actually showed up and participated in the focus group discussions. For the faculty focus groups, email invitations were sent to all of the current online instructors (85). Initially, the faculty focus group invitation provided the option of two meeting times. Due to the large number of faculty that wanted to attend but had scheduling conflicts, two additional focus group meetings were scheduled. So, a total of four faculty focus groups

were conducted. Finally, an impromptu focus group meeting occurred with my Information Technology & Services staff during the course of a general meeting. All of the focus group meetings are listed chronologically in Table 1.

Table 1

Schedule of Focus Group Meetings

Focus Groups	Meeting Times	DVC Meeting Locations	Participants
Student Focus Group #1	October 9, 2007 12:30 to 1:30 PM	Media Conference Room, L151	8[a]
Student Focus Group #2	October 9, 2007 5:30 to 6:30 PM	Media Conference Room, L151	10[a]
Faculty Focus Group #1	October 18, 2007 12:30 to 1:45 PM	Advanced Technology Center, 103	9
Faculty Focus Group #2	October 18, 2007 5:15 to 6:30 PM	Advanced Technology Center, 103	4
Faculty Focus Group #3	October 29, 2007 12:00 to 1:15 PM	Advanced Technology Center, 103	2 +1 (late)
Faculty Focus Group #4	October 30, 2007 12:30 to 1:45 PM	Advanced Technology Center, 103	4
Staff Focus Group #1	November 2, 2007 10:30 to 11:00 AM	Media Conference Room, L151	15[a]

[a] The number of participants was not recorded during the focus group meeting and this number is a close, conservative estimate.

I moderated all of the focus group meetings and my administrative assistant took copious notes. With the participants' permission, the meetings were audio-recorded using an Apple iPod and attached microphone. The focus groups met in comfortable

meeting rooms and the participants were arranged so they could see each other as they spoke. I began the focus groups with an introduction of myself and my assistant (who also served as the WebCT administrator) and a reiteration of the purpose of the meeting—to better understand their experiences and perspectives about online courses. I explained the ground rules: they were encouraged to speak freely, their comments would remain anonymous, there were no wrong or right answers, and they were asked to limit their comments to one person speaking at a time. Basically, I followed standard procedures for conducting focus group interviews in selecting the topic, participants, groups, setting, moderator, questions, and recorder (Lewis, 2000). The face-to-face focus group methodology was particularly chosen so as to benefit from the live interactions and dynamics of the group discussions—expecting this would reveal additional issues and their relative importance among the participants (Romiszowski & Mason, 2004).

The student focus group meetings went pretty smoothly. There was an even pace to the discussions and every participant spoke up at least once. The group size seemed appropriate and it appeared that everyone had the opportunity to speak up when they were so inclined. No one dominated the group discussions. However, in the second student focus group, there was one person who seemed particularly disappointed with a class and complained about it several times. Nevertheless, the discussion was moderated to keep the dialog flowing among the participants and the group did not dwell upon the specific complaint. The notes from the student focus

groups were readily organized by the three main topics of likes, dislikes and hopes for online courses and support.

The faculty focus groups were more intensive than the student focus groups. The faculty had much more to say about their experiences than the students, and many of them felt quite strongly about the topic. The first faculty focus group had nine participants, and although this was a good number for a student focus group, it was too many for a faculty focus group on this topic. We needed fewer people or more time to adequately discuss the topic. This lesson was quickly learned and subsequent faculty focus groups were limited to four or five participants. This turned out to be a good number of participants and afforded everyone enough time to substantially contribute to the discussions. The compilation of the notes from the faculty focus group meetings were categorized and organized into the new subtopics that emerged: (a) Instructor's experience, preparation, and perceptions, (b) observations about students, instructors, and technology, (c) difficulties with student and instructional issues, (d) concerns about students, instructors, technology and transfer, (e) strategies for beginning courses, structuring courses, supporting students, assessing students, and teaching online, (f) suggestions for tutoring, using the web, supporting instructors, and policies.

Survey Development

Two online surveys were developed, one for online students and one for online faculty. SurveyMonkey was selected as the survey tool because it was currently being used by our college research office and academic services office to survey students and faculty for the upcoming accreditation self-study. Thus it was a familiar resource among

many of our students and faculty and it had many desirable features for an online survey tool: easy-to-use, web-based, invitation-based surveys, tracking, email reminders, anonymous surveys, multiple choice options, open-ended options, nice reporting features, downloadable results, and last, but not least, affordable. I was very pleased with the functionality, usability and convenience of SurveyMonkey for developing, distributing, monitoring, reporting, and collecting survey data from online students and faculty. And, given the audience of *online* students and faculty, it made sense to administer this survey online instead of using a paper-based or alternative method.

The online web surveys were designed in large part according to the recommendations from SurveyMonkey's online support resources and a RAND Report Monograph explaining how to best conduct research via email and web surveys (Schonlau, Fricker, & Elliott, 2002; The_Monkey_Team, 2007). In particular, the following guidelines were followed as taken from recommendations by SurveyMonkey and the Rand Report: (a) do not require the users to scroll down in the browser window to read the entire question and response-options, (b) provide an indication of the survey-progress on each screen, (c) allow users to go back to review/revise answers before final submission, (d) use unambiguous terms and phrases, (e) eliminate unnecessary questions, (f) field-test your survey before administering it, (g) give respondents something in return, and (h) stagger the e-mail invitations for large numbers of participants.

After a rough draft of the student survey was completed, several online support staff members reviewed it and provided verbal feedback. After incorporating their feedback, student workers in the DVC Computer Center and Media Center who have taken an online course at DVC were identified and asked to provide feedback on the survey. I watched as they completed the online survey and told me if any part was confusing. After obtaining feedback from one or two students in this manner, the survey was revised, and one or two new students took the revised survey. This process was repeated three or four times over the course of a week. Then, several online support staff and instructors were asked to provide feedback on the survey. After considering all of the feedback from everyone, the revised survey was ready for pilot testing with a group of online students.

For the pilot survey, 108 students currently enrolled in 1, 2 and 5 unit online courses were selected to represent a variety of different courses (five). Students from 3-4 unit online courses were not selected so as to ensure that participants in the study would not be biased by taking the pilot survey before the actual survey. To select the pilot students, a list of prospective students was obtained and names were selected in a semi-random manner. Each student's email address, first name, last name and course name were copied into the SurveyMonkey recipient list for the pilot survey. SurveyMonkey was used to send a personalized email to each student, inviting them to take the pilot survey as soon as possible. As an incentive, a random drawing for a $25 DVC Book Center gift certificate was offered to those who completed the survey before the cutoff. An example of a personalized email message is provided in Appendix C.

The pilot survey was released on November 10th. By November 12th, 26 online students had completed the survey. After reviewing the results, it was clear that student feedback about the survey content was consistent, and the online survey process was working just fine. The survey was then closed, and a lucky respondent was randomly selected to receive the gift certificate. This pilot test provided helpful information towards completing the student survey and preparing it for launch. Administering the pilot survey also provided practice with using the various features of SurveyMonkey, such as sending personalized email invitations, tracking surveys responses, viewing results, and downloading results. Administering the pilot survey was an important and useful step in the process of finalizing the survey.

For the last step, our Dean of Planning, Research and Student Outcomes reviewed the online survey. He provided expert, verbal feedback that helped to further refine some questions and ensure that response options were grammatically parallel. As a result of the pilot survey and expert review, 15 questions were slightly revised, one question was added, some items were eliminated, and the order was changed for several questions. The final student survey consisted of 60 response items distributed over 29 questions; nine of the questions allowed for optional comments, the second to last question was open-ended, and the final question asked whether they were agreeable to possible follow-up questions via email. A total of 38 question items used a 5-point Likert scale, from very satisfied to very unsatisfied. A screenshot of the online student survey is provided in Appendix D.

The development of the faculty survey was begun after the student survey was completed. The basic format of the student survey was used as a template for the faculty survey and an alternative background template was applied. As appropriate, for the sake of comparison, several of the student survey questions were included verbatim in the faculty survey, for example, “How would you rate your computer skills?”, and, “What type of computer do you most often use to access your online course?” Several of the student questions were slightly modified, for example, “Overall, how satisfied are you with this online course?” was modified to, “Overall, how satisfied are you with *teaching* online at DVC?” Many of the student questions were dropped and new questions were added that were based on the literature or focus group data, while trying to keep the survey as short as possible. Similar to the development of the student survey, several cycles of revising the faculty survey—obtaining feedback from online staff/faculty, and issuing the revised survey to new testers—were completed. The Dean of Research, Planning and Student Outcomes reviewed the faculty survey and provided valuable feedback, including the recommendation to ensure that the faculty results are anonymous by omitting questions that were too specific about the courses they were teaching. A screenshot of the faculty survey is provided in Appendix E.

Survey Administration

A unique link to the student survey was emailed to each student that met the research criteria of being over 18 and enrolled in one or more full-term, 3-4 unit online courses during fall semester 2007. The list of students that met these criteria was obtained from the enterprise information system. The list included each student’s

name, ID, birth date, email address, course name and course enrollment status (enrolled/dropped). A negligible percentage (3.8%) of student email addresses was not available from the student information system and no effort was deemed necessary to try to obtain these email addresses for this study. A total of 1,653 such students were currently enrolled in one or more online courses, 287 of those students were currently enrolled in two or more online courses, 41 were enrolled in three online courses, 9 were enrolled in 4 online courses, and 1 student was enrolled in 5 online courses. The student survey invitation was sent to students in reference to *one* of the online courses that they were currently taking. A slightly modified survey link was sent to students that met the criteria but had dropped the online course after the four-week drop date.

The student survey invitation was emailed by SurveyMonkey to 1,591 students beginning on November 14th, 2007. The first 100 invitations were sent on the evening of the 14th and the remainder was sent on the morning of the 15th. The reason for not sending all of the invitations at once was to allow for making adjustments in case a problem was discovered after the first batch were sent. It turned out that there were no problems. The email invitation was purposely timed so that students would have completed 12-13 weeks of instruction—over 70% of the course. This was done to ensure that students had sufficient time to develop a good overall sense of the course. Each student received a personalized email message that included their name, the course name, a unique survey link generated by SurveyMonkey and an appeal to complete the survey, (see Appendix F). As an incentive, four $25 DVC Book Center gift certificates were offered as random drawings for respondents who completed the survey. The

survey remained open until December 13th, 2007. A survey reminder message was emailed to non-responders on November 19th and November 28th. From the 1,591 email messages that were originally sent, 53 messages bounced, 5 students opted out, 706 students started the survey, and 675 students completed the survey for a 43.9% response-rate (not counting the messages that bounced).

On November 16th, a slightly modified survey was emailed to the 246 students who had *dropped* an online course after the 4 week drop-date. The only modification was to question #28 where students were asked to, "Please indicate the reasons you dropped this course", instead of, "What else would you like to say about online courses at DVC?" This survey remained open until December 13th, 2007. A survey reminder was sent to non-responders on November 19th and November 28th. From that group, 10 messages bounced, 1 student opted out, 76 started the survey and 64 completed it for a 27.1% response-rate. These results were combined with the results of the first survey and used for analysis.

The faculty survey was released on December 5th, 2007. A generic email message was sent to all of the online instructors with one URL to the faculty survey. In contrast to the student survey, where each student received an individualized email that allowed for tracking individual student results, the faculty received a generic email with a shared link to the survey. The faculty responses were not attributable to individuals unless the respondent chose to provide an email address for possible follow-up questions. The faculty survey remained open until December 18th, 2007. A survey reminder was sent on December 11th. A total of 43 instructors completed the survey for a 50.6% response

rate. The student and faculty survey schedules and completion rates are summarized in Table 4.

Table 2

Schedule of Student and Faculty Survey Events

Survey	Sent	*N*	Bounce	Opt out	Start	Finish	*%*	Closed
Student Pilot	11/10	108	--	0	27	26	24.1	11/12
Student One Course	11/14	1,591	53	5	706	675	43.9	12/13
Student Drop Course	11/16	248	10	1	76	64	27.0	12/13
Faculty	12/5	85	0	0	43	43	50.6	12/18

As the surveys were being completed, SurveyMonkey provided real-time reports of the survey responses. It was reassuring to check the results on occasion to see how many students and faculty were completing the survey. The real-time survey reports included the response count, response percent, response skipped, optional comments, and bar graphs. Sample screen shots of the survey reports are provided in Appendix G.

Student Information

In February, after the fall semester was complete and course grades were submitted by instructors, additional information about the online students was obtained from the enterprise information system: student gender, age, ethnicity, course load and course grade. The student grade data was used to calculate the retention and success rates for the student sample and student population. This information was combined with the student survey data for analysis.

Data Preparation

In order to prepare the survey responses for statistical analysis, the response data for each survey was downloaded from SurveyMonkey and imported into SPSS as a unique file. In SPSS, after reviewing the default numeric coding scheme that was automatically generated by SurveyMonkey, most of the responses were recoded to make the numeric results easier to interpret when analyzed. For example, in SurveyMonkey, Yes/No items were coded as 2/1. These were recoded within SPSS as 1/0 so that the average for the yes/no questions could be readily interpreted as a percentage of yes responses. For example, an average of 0.35 would mean that 35% of the respondents replied "Yes" to that item. Similarly, Yes/No/Maybe items were recoded as 1/-1/0 so that a positive average would mean that more respondents replied, "Yes", and a negative average would mean that more respondents replied, "No." The Likert-scale items were recoded so that 1 was very unsatisfied and 5 was very satisfied, etc., thus, the higher the number, the greater the satisfaction level. Each of the survey variables and labels were edited in SPSS to match the survey questions and response options as they appeared in SurveyMonkey. This made it easier to compare the results between SPSS and SurveyMonkey to ensure that the recoding was done accurately. Furthermore, each variable was categorized within SPSS as nominal, ordinal or scalar. Most of the variables were ordinal or nominal. All of the recoding and labeling was done within SPSS for each of the survey files.

The additional student data was exported from the enterprise information system and imported into SPSS as a separate file. The variables for student first name,

last name, and course name were labeled and categorized to be identical to the equivalent variables in the surveys. This enabled the data and survey files to be merged into one file that included all of the variables from the enterprise system linked to the corresponding records of the student survey responses. The result was that each record of the student sample contains the course grade and demographic data in addition to the survey response data. The same student information was obtained for the student *population*—gender, age, ethnicity, and course grade. This data set was used to compare the student sample to the student population. The same was done for the faculty, with the exception of course load and course grade.

All of these data resources were collected, prepared, reviewed and analyzed in order to learn more about the satisfaction and success of online students and faculty. The results of these analyses are presented in the next chapter.