ARTICLE

Virtual counseling: An examination of academic advising via the Internet

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Over the course of the last few decades, computer technology has become an essential part of human activity. Coleman (1984) expressed the belief that modern technology has made possible practically anything humans only dreamed of before. Today, besides unusual applications of the digital revolution such as far away space exploration and distance child care centers, computer technology allows many practical uses such as permitting students to take distance education program courses via the Internet. Ideas about programmed instruction and services were first introduced in the 1950s by Skinner and Crowder and gradually developed into modern distance education and a network of services (Granello, 2000; Niemiec & Walberg, 1989).

When mainframe computers were replaced by mini and personal computers and the cost of programming instructions was decreased dramatically, the idea of the applying computers to counseling services became a reality that exploded in the late 1960s (Granello, 2000). Notably, the first program for a computer-counseling relationship was developed in 1966 and is still available on the Web. The name of this first virtual counselor was "ELIZA - a friend you could never have before" ("Eliza," n.d.). This primitive program provides an example of the emulation of the reflective comments of Rogerian client-centered therapy.

During the 1980s counselors began to interface with computers and explore possibilities for cognitive therapy. As a result, two experimental programs were created to demonstrate virtual counseling. The first program, named PlatoDCS, was designed for solving decision-making dilemmas (Wagman & Keber, 1984; Patterson, 1995). The second, named MORTON, used cognitive therapy principles to identify thoughts that may be the symptomatic of depression and was created to deal with clients suffering from a mild to moderate condition of mental illness (Selmi, Klein, Griest, & Harris, 1982).

A high level of enthusiasm about the potential of Internet technology has marked the last few years. Lee (1998) stated that counseling via the Internet has become a reality. "While only in its infancy, it is certain that 'cybercounseling' will grow as computer technology and Internet capabilities become more sophisticated" (p. #1).

Being an integral part of a student's educational process, counseling services, like other educational services (e.g., distance education), also have been greatly influenced by computer technologies during the last few decades (Granello, 2000). Although counseling services are designed partly as a mental health service for students on

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campus, the primary goal of counseling in the educational system is to provide effective academic advising (Cohn, 1997).

It is worthwhile to note that researchers who studied technologies incorporated into counseling services found bipolar data and formed different conclusions and attitudes toward the use of technologies in counseling services. On one hand, researchers were enthusiastic about the implementation of digital technologies in counseling and considered it a useful alternative or supplement to the face-to-face method of counseling (Boaz, Elliott, Foshee, Hardy, Jarmon, & Olcott, 1999; Boettcher & Conrad, 1999; Carelse, 2001; Grant, Bryant, & Gilley, 1999; Hassenplug & Harnish, 1998; Mattice & Dixon, 1999). On the other hand, some counseling professionals (Coiera, 1996; Sellu, 1996) were reasonably suspicious of online counseling and questioned online services' ethical and professional credibility because of the lack of security with distance counseling technologies and the uncertainty of public readiness for a new form of counseling service.

Fishman (1997) discussed computer-mediated communication tools that are correlated with computer experience, social influence, communication apprehension, academic self-concept, parental education, and gender. Fishman concluded that although face-to-face counseling is popular and probably will not be replaced absolutely by counseling via the Internet, the benefits of counseling online should be studied. These benefits include instant accessibility, time and money efficiency, convenience for those who are not able to leave home, the ability to stay in the relaxed home environment, increased privacy for some sensitive people, and potentially more versatility, which means people can have extended professional support or information (Fishman).

The use of Internet technology in counseling is a promising path for future development. Computer technologies can significantly enhance conventional face-to-face student counseling (Granello, 2000; Lambert, 1988). Lee (1998) emphasized that cyber-counseling provides a new dimension to counseling service. However, the implementation of new technologies will be a significant challenge for educational leaders, especially if they do not draw on research findings to guide their decisions. Although the Internet offers great potential, many researchers (Hackerman & Greer, 2000; Ross, 1999; Suler, 1997) believe that technologies cannot replace face-to-face human relations. They may, however, serve as a viable supplement to existing services.

The practical application of Internet technology by counselors is not limited to providing information about office hours, tests, notes, hypertext, graphics, sound, and video supplements. Besides the fact that the Internet is a virtually unlimited library of information, it can be employed for many virtual activities such as chat sessions at appointed times, or for online role-playing sessions (Guterman & Kirk, 2001). For those students who are already Internet-enculturated, distance academic counseling may be perceived as a valuable and sufficient technological tool to enhance their opportunities. For other students who are technologically illiterate, face-to-face sessions may be the most effective alternative (Ross, 1999; Sherry, 1998). In any case, the potential for virtual counseling seems limited only by the extent of counselors' enthusiasm and creativity (Granello, 2000).

Method

Fresno City College, a community college located in central California, was selected for this study. The college had an approximate enrollment of 23,000 students during the spring 2003 semester. A purposive sample of participating subjects was chosen from a list of enrolled students and invited to participate in the study. The sample was divided into three groups (1 through 3) that include a total of 88 participants. Group 1 ("Traditional") included 33 students who had traditional face-to-face service. Group 2 ("Video") included 30 students who were invited to participate in a video conferencing academic counseling session. Group 3 ("Chat") included 25 students who participated in virtual distance academic counseling sessions via the Internet using a chat room module. After each academic advising session, a survey was administered to students who received conventional face-to-face advising services as well as to students in videoconference, and chat room groups.

The feedback critical to implementation of academic advising via Internet and assessment needs was obtained through a survey instrument developed by American College Testing (ACT). The Evaluation Survey Service (ESS) is a standardized instrument containing seven parts including background information, general advising information, academic advising needs, impression of adviser, additional advising information, questions developed specifically to evaluate the utilization of Internet technologies in the College Counseling Center, and comments. There was sufficient evidence of good reliability and validity for the instrument (American College Testing, 1995). After a thorough study of the survey's item sensitivity, Mittelholtz and Noble (1993) concluded that students' self-reported data are an accurate and valid source of information.

All survey instruments had been used and kept according to requirements of ACT and were administered by trained professional counselors. Nine counselors who participated in the study rotated between traditional, video, and chat room counseling conditions to reduce a possibility of biased results.

Purpose

The purpose of this research was to determine if academic advising via Internet technologies could satisfy students' academic needs at a selected community college. If so, in what ways is it effective? The preliminary question was developed into the four research questions addressed in this study:

1. What is the level of students' satisfaction with academic counseling?
2. How adequately will virtual academic counseling via Internet technologies, such as videoconferencing and chat room, satisfy students' academic requests?
3. Would students prefer virtual to traditional face-to-face academic counseling session in order to avoid a long line in the counseling center?
4. What components of integrated technologies are the most preferred by students when they are given a choice of distance academic counseling?

Based on these questions, the study was conducted to assess student satisfaction with and impressions of advising services. The responses of students involved in traditional (face-to-face) academic counseling were compared to the responses of those who were engaged in virtual (video and chat room) academic counseling conducted by trained professional counselors.

Need

Due to a rapidly increasing student population, Fresno City College's counseling center has been challenged by long lines of students requesting academic advising. Some students cannot afford to wait in line for two or three hours. Freshmen are an especially vulnerable group of students because many of them do not know that prerequisite courses may be required to successfully pass some courses, such as trigonometry or reading and composition college-level English courses. Those students who depart without adequate academic advice often register for classes they are not adequately prepared for and may fail these courses. Consequently, in 1999 the dropout rate at this particular college reached 28.5% (Ross, 1999). To satisfy academic advising needs, quite often students obtained information from their classmates. Telephone calls to counselors increased significantly. Students requested counseling online or asked for information to be sent by postal mail. There was a need to develop and explore a virtual academic advising program which would allow students to choose an alternative service. Thus, an online service seemed to be an optional tool in addition to traditional face-to-face counseling services.

Software Development

In order to conduct this study, special software was developed to support academic advising via the Internet. This software included academic program Web pages accessible to students, and links to related information. The digital video equipment LogiTech was installed at several computer stations in the Counseling Center. To support videoconferencing and chat room academic counseling sessions, NetMeeting communication software was activated. NetMeeting is a free software program designed to share files using FTP functions, use dynamic markup documents (whiteboards), see the changes made to the document at the same time, send handouts such as schedules, import a document or a graphic, and participate in videoconferences. Using this software, virtual academic advising via the Internet was simulated. Simple directions on how to use the equipment were given to every participant.

Limitations

Technological limitations included such critical factors as the quality of digital audio equipment, the size of viewing pictures on the screen, and the limited speed of digital data transmission during a videoconferencing session. Logistical limitations include the

counseling preferences of students. Issues of confidentiality, security connection, and licensing of private counseling professionals may also pose logistical limitations.

Results

Data were gathered during the first two weeks in the beginning of the Spring 2003 semester. A total of 1,028 students requested academic advising services. Of those, 841 (81.8%) students saw counselors and 187 (18.2%) did not report for an appointment. Finally, of the 841 students who saw counselors, 97 (11.53%) participated in the study by completing a survey. Ninety-seven surveys were distributed to respondents participating in academic counseling services at the college counseling center. Of 97 questionnaires, 88 (90.7%) were collected by counselors.

Demographic Data

Almost twice as many females (Traditional (T), 64%; Videoconference (V), 67%; Chat room (C), 68%) used counseling services (and returned a survey) compared to males (T, 36%; V, 33%; C, 32%). This was a much higher proportion of females than in the general campus population (52% females, 48% males).

The largest ethnic group was Mexican American, Mexican origin (T, 48%; V, 33%; C, 40%), followed by the Asian American group (T, 27%; V, 20%; C, 16%). However, some participants didn't declare their ethnic background. In addition, 27% of the video group subjects who participated in the survey marked ethnicity as "other."

Evaluation Survey Service (ESS) Results

Survey results show that the majority of respondents (T, 63%; V, 63%; C, 56%) indicated that their needs were met "more than adequately" or "exceptionally well." Additionally, almost a third of the students (T, 36%; V, 33%; C, 36%) indicated that their needs were met "adequately."

Academic Advising Needs

The purpose of the Academic Advising Needs section of the survey was to measure how well the needs of students participating in the academic advising process had been met. The level of satisfaction with the adviser's assistance was measured by a 5-point Likert scale with a range of choices from "very satisfied" (1) to "very dissatisfied" (5). Results reported in Table 1 show that there was a noticeable difference between student satisfaction with traditional and virtual academic with academic advising services. In comparing traditional and video mean scores on the 18 items listed in Table 1, there were only a few items that appeared to have a comparable mean scores.

TABLE 1

Satisfaction with Adviser's Assistance

Topic or issue	Traditional n	Traditional Mean	Video n	Video Mean	Chat Room n	Chat Room Mean
1. Schedule/registration	33	2.82	29	2.79	24	3.13
2. Dropping/adding courses	33	2.70	30	2.83	23	3.00
3. Course credit	33	2.58	29	2.76	24	3.08
4. Selecting/changing courses	33	2.45	29	2.62	22	3.00
5. Help selecting major	33	2.88	28	2.71	23	3.04
6. Grad/requirements	32	2.81	28	3.00	23	3.22
7. Study skills	33	2.48	30	2.73	23	3.00
8. Remediation/tutor	33	2.33	30	2.80	24	3.08
9. Assist/clarifying	33	2.30	30	2.73	21	3.05
10. Identify life/career goals	33	2.67	29	2.86	23	2.96
11. Coping with academics	32	2.63	29	2.69	21	3.10
12. Difficulty-financial aid	32	2.28	30	2.67	22	3.00
13. Obtaining financial aid	33	2.30	29	2.59	21	3.05
14. Employment counseling	31	2.10	29	2.55	21	3.05
15. Finding a job after graduation	32	2.13	28	2.61	21	3.10
16. Withdrawal/transferring	33	2.64	29	1.00	23	3.09
17. Dealing with transferring	32	2.56	29	3.03	23	3.26
18. Dealing with personal problems	31	2.23	28	2.86	21	3.00

Mean student satisfaction scores of the video group were almost the same as or higher than the means of the traditional group students. In contrast, the chat room student satisfaction with academic advising (m= 3.00 and higher) was higher than both the traditional and video groups. Moreover, in reviewing the overall frequencies and percentages in Table 2, on the 5-point scale (1=very satisfied, 5=very dissatisfied), the majority of both virtual groups of students were "satisfied" or "very satisfied" with academic advisers' assistance.

TABLE 2

Satisfaction with Adviser's Assistance

Satisfaction	Traditional *f*	Traditional Percent	Video *f*	Video Percent	Chat Room *f*	Chat Room Percent
Very Satisfied	90	15	160	31	160	40
Satisfied	126	22	114	22	123	31
Neutral	358	61	218	42	111	28
Dissatisfied	6	1	28	5	5	1
Very Dissatisfied	5	1	3	1	4	1

For students who reported being "very satisfied," the percentage for traditional service was the lowest (15%), and the chat room was the highest (40%). For students who marked "neutral" on the 5-point scale, the highest percentage was for traditional students (T, 61%; V, 42%; C, 28%). Comments indicated that the greatest concern of students was the long waiting line at the counseling center. Of the 18 comments by traditional session participants, 10 were related to the long waiting time. Of the 19 comments reported by video session participants, only 2 were related to long waiting time. Similarly, of the 14 comments by chat room session participants, only 1 was related to the long waiting time. The percentage of very dissatisfied students was the same for all three groups (T, 1%; V, 1%; C, 1%). The percentage of dissatisfied students was almost the same except that for the video group, which was slightly higher (T, 1%; V, 5%; C, 1%). When commenting on what students did not like about the academic counseling session, of the 17 comments by video session participants, 7 were related to the poor quality of the audio system used during the session. Two comments from students on the subject of chat room service suggested that it is good only for quick questions.

Adviser Impressions

The purpose of the Adviser Impressions section of the survey was to measure the students' impressions of academic advisers. In reviewing the results in Table 3, the majority of all three groups of students (T, 74%; V, 73%; C, 69%) "agreed" and "strongly agreed" with Adviser Impressions items. The percentage of those students who were "neutral" was similar for all three groups (T, 21%; V, 22%; C, 26%). The percentage of students who "did not agree" (T, 3%; V, 3%; C, 3%) or "strongly disagreed" (T, 1%; V, 0.4%; C, 1%) was very low.

TABLE 3

Impressions of Adviser

Impressions	Traditional		Video		Chat Room	
	f	Percent	*f*	Percent	*f*	Percent
Strongly Agree	367	38	376	37	369	45
Agree	346	36	364	36	193	24
Neutral	206	21	224	22	212	26
Disagree	26	3	35	3	21	3
Strongly Disagree	14	1	4	0.4	17	2

The frequencies and percentages in Table 3 show that there was not a substantial difference between the traditional and virtual group (video and chat room) students and their impression of Fresno City College academic counselors.

Additional Questions

The Additional Questions section was designed to determine the students' overall technology attitude and measure computer anxiety, confidence, and cognitive attitudes towards alternative virtual academic counseling based on computer-mediated communication. The following data summarize the most reflective of student attitudes toward computer technologies.

Of those students who regularly use a computer at home, chat room (48%) and video (43%) participants indicated the highest positive attitude compared to the traditional group (33%). Chat room and video participants indicated the highest percentage showing influence of technologies on their lifestyle (T, 39%; V, 46%; C, 52%). Traditional service students (T, 3%; V, 0%; C, 0%) reported the most negative attitude toward technology.

When asked to rate their level of satisfaction with counseling services used in the past and currently, the majority of students were "satisfied" and "very satisfied" with both past (T, 94%; V, 90%; C, 76%) and present (T, 91%; V, 100%; C, 88%) academic advising experiences. Video and chat room participants indicated a higher level of satisfaction with academic advising services they had during the present session than previously.

The majority of respondents (T, 79%; V, 97%; C, 76%) indicated that they would definitely use virtual counseling in special circumstances (e.g., when they do not feel well or are out of town).

When choosing the most reasonable technology, those who participated in the

video session recorded the highest percentage for video devices as the most reasonable technology for virtual counseling (T, 33%; V, 70%; C, 16%). Those who participated in the chat room session recorded the highest percentage for chat room technology (T, 9%; V, 17%; C, 56%). E-mail communication was appreciated most by traditional session participants (T, 39%; V, 17%; C, 12%). The telephone was also appreciated most by traditional session participants (T, 27%; V, 0%; C, 16%).

The majority of students participating in the traditional and chat room sessions preferred the Internet as a supplemental tool only (T, 55%; V, 40%; C, 60%), whereas video session participants indicated that they prefer the Internet as a substitute for the traditional academic counseling session (T, 33%; V, 60%; C, 40%).

Discussion

This study examined the potential of applied digital technologies in academic counseling services in a community college counseling center. Four research questions were addressed.

What is the level of students' satisfaction with academic counseling? Based on the survey results, the level of students' satisfaction with the academic counseling program and meeting student academic advising needs was assessed as "adequately" and "exceptionally well" by the vast majority of students.

How adequately does virtual academic counseling via Internet technologies, such as videoconferencing, e-mail, and chat rooms, satisfy students' academic requests? The results obtained from these data indicated that it does not appear that video and chat room academic advising services are inferior to traditional services. In other words, there were no differences between virtual and traditional students' impressions of the academic advising services. Moreover, in some cases students recognized virtual academic advising sessions (such as chat room) as more efficient for quick questions.

Would students prefer virtual to traditional face-to-face counseling sessions? The majority of respondents indicated that they would definitely use virtual counseling in special circumstances. Actually, videoconferencing participants were stronger supporters of virtual academic advising (T, 79%; V, 97%; C, 76%) than other groups. Students who participated in the chat room session indicated that virtual academic counseling would be best for quick, simple questions. However, the results were inclusive. The traditional face-to-face counseling services were still the most popular. The majority of students from all three groups preferred traditional counseling as the most popular service (T, 67%; V, 73%; C, 76%). Interestingly, virtual counseling was requested only as a supplemental service to traditional services. The inconsistency of participants' rating responses leads to the conclusion that the applied digital technologies have a divisive effect on technology users. The results of this study, indicating students' preferences for traditional counseling on the one side and virtual academic counseling on the other, probably require more attention and should be studied further.

What components of integrated technologies are most preferred by students for

distance academic counseling? The results were varied. Students who participated in the video session indicated the highest percentage for video as the most reasonable technology for virtual counseling (T, 33%; V, 70%; C, 16%). Students who participated in the chat room session indicated the highest percentage for chat room technology (T, 9%; V, 17%; C, 56%). Those students who participated in the traditional face-to-face session indicated the highest percentage for e-mail communication (T, 39%; V, 17%; C, 12%). Telephone communication was appreciated most by the traditional session participants (T, 27%; V, 0%; C, 16%).

Although traditional face-to-face academic advising remains most popular among students, the advantages of Internet technologies has created interest among students in cyber-counseling experiences. Computer-literate college students who engaged in virtual counseling conducted by trained professional counselors via Internet had higher levels of satisfaction in regard to meeting academic goals. Most students appreciated the chance to access an academic counselor via digital technologies.

Even though virtual counseling does not necessarily guarantee improvement in academic performance, it may serve as an effective alternative to satisfying students' needs when appointment waiting time in the counseling department is a serious issue. Virtual counseling may be a viable solution to the problem.

In summary, Internet technologies were instrumental in helping students obtain necessary information to satisfy their academic needs. The majority of students in this study who experienced academic counseling via Internet technologies speak favorably of it. Students found video conferencing and chat room interactivity to be an easy, enjoyable, and efficient mechanism for academic advising. Videoconferencing and private chat room (simultaneous electronic communication between an academic counselor and student) are two technologies which potentially should be used to provide counseling services. Overall, the findings of this study suggest that the majority of students participating in the study preferred to use Internet technologies for academic advising purposes which they believed could satisfy their academic needs.

Implications for Future Research

The data collected in this research may be useful for other researchers who believe in digital technology tools as a real avenue for academic counseling service development, especially for distance education learners. Further investigation is necessary to confirm or modify the findings of this paper.

It would be interesting to examine several questions. To what degree was the choice of chat room or videoconferencing indicative of the students' disposition toward technology? To what extent has waiting time or long lines in the counseling department been a decisive factor for students in choosing the distance education technology option versus traditional advising? It also would be interesting to conduct further studies on the subjects participating in virtual counseling to investigate how satisfied students would be with counseling services, confidence, and understanding of educational and career goals over a period of time. Would subjects who regularly participate in virtual counseling over a period of time be less affected by punitive institutional policies such as an

academic or progress probation? Would the academic performance of college students participating in virtual counseling show significant improvement over a period of time, for example, two semesters? What cost factors should be considered when planning or implementing distance counseling projects and how are those costs offset by benefits to the students?

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