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Telehealth Experiential Learning: A Pilot Study of The Client's Experience

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Abstract

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Keywords

Experiential learning, telehealth, client satisfaction

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ABSTRACT

This research examined the client experience of a student-led occupational therapy pro bono clinic that involved telehealth-delivered treatment sessions. Six clients responded to a survey that included both Likert scale close-ended and open-ended items. The researchers employed descriptive statistics for close-ended items and summarized open-ended responses. All close-ended items had a median score of 4 out of 5, indicating it was easy to communicate, easy to find and use features of the software, and that there were minimal problems with the software in the telehealth delivered sessions. Open ended-responses reflected an overall positive experience.

INTRODUCTION

This research examined the client experiences of a student-led occupational therapy pro bono clinic that included telehealth-delivered treatment sessions. The clinic was the experiential component of a course housed in a transitional master of occupational therapy program for occupational therapy assistants at a Midwestern university. Students in this program have contact with clients limited to two on-site weekend meetings for clinic experiences. The authors identified telehealth as an opportunity to increase student contact time with clients.

Experiential learning is an important aspect of clinical education in the health professions. Students' knowledge carryover from classroom to clinical practice is optimal when students apply what they learn across varied contexts that relate to clinical practice (Merriam & Bierema, 2013). Learning is embedded in the context in which it occurs and may not translate to differing contexts unless practiced (Giamellaro, 2017; Schell & Cervero, 1993). Pro bono clinic student learning experiences provide an opportunity to engage students in experiential learning while benefitting the surrounding

community. Students can assess, engage in intervention planning, and deliver treatment in a supervised setting. Students engage in experiential learning in the clinic experience and clients who are otherwise ineligible for insurance paid services have the opportunity to receive care.

Telehealth is a service delivery method, which enables health care professionals to utilize telecommunication and information technology to provide evaluation, consultation, and interventions at a distance from the physical location of the client (American Occupational Therapy Association, 2013). Telehealth is becoming an increasingly important aspect of curriculum in the health professions. A 2015 survey of nursing programs found 71% of surveyed schools included telehealth content in their programs and 42% included an experiential component to their telehealth unit (Ali, Carlton, & Omar, 2015). The literature on telehealth components of occupational therapy programs is limited. However, the Accreditation Council of Occupational Therapy Education (ACOTE) 2011 Standards include a requirement encompassing an understanding of telehealth technology in standard B.1.8 (ACOTE, 2017). To the authors' knowledge, the telehealth clinic experience designed for this transitional master of occupational therapy program is unique.

LITERATURE REVIEW

Clients have reported both benefits and barriers to receiving telehealth delivered services. A systematic review of telehealth studies between 2010 and 2017 found clients most frequently reported improved outcomes, ease of use, reduced cost, and improved communication as benefits of telehealth (Kruse et al., 2017). Clients can receive services in their natural environments. Clients have also reported increased health knowledge, improved self-management of health conditions, a greater sense of security, less waiting time for appointments, decreased cost, decreased travel, better access to services, a strong relationship with the provider, personalized interventions, easy to use equipment, a feeling of ongoing support, convenience, and greater access to services (Chou, Chang, Lee, Chou, & Mills, 2013; Eikelboom & Atlas, 2005; Kairy, Tousignant, Leclerc, Côté, & Lévasseur, 2013; Levy, Silverman, Jia, Geiss, & Omura, 2015; Polinski et al., 2015; Young, Foster, Silander, & Wakefield, 2011). Client reported barriers to telehealth delivered services have included a preference for in-person services, a concern about confidentiality, and frustration with functionality of equipment (Eikelboom & Atlas, 2005; Young et al., 2011). However, perceived benefits may outweigh barriers for most clients (Steel, Cox, & Gary, 2011).

Past survey research indicated clients are satisfied with telehealth experiences (Chou et al., 2013; Eikelboom & Atlas, 2005; Levy et al., 2015; Polinski et al., 2015; Waibel, Cain, Hall, & Keen, 2017; Young et al., 2011). However, client preference for telehealth or in-person service delivery varies. Some clients have found telehealth and in-person services similar but some have not; and some preferred in-person services, while others preferred telehealth delivered services (Sorenson, 2008). A younger age, being male, experience with technology, and higher levels of education are factors associated with increased telehealth use and satisfaction (Eikelboom & Atlas, 2005; Polinski et al.,

2015; Rasid & Jagger, 1992; Rohland, Saleh, Soherer, & Romitti, 2000; Sorensen, 2008).

It is questionable how results of past studies translate to the context of the current study. Past studies were not specific to occupational therapy. These studies did not take place in an educational setting involving students. The added aspect of faculty supervision to the client provider relationship complicates the telehealth experience. Communication is no longer direct between client and therapist, but includes three-way communication between client and student, student and supervisor, and at times between supervisor and client. Students involved in telehealth experiential learning reported a more complicated client relationship due to issues with communication and not being able to provide hands on cues or assistance when needed (Randall et al., 2016). Thus, the client experience of telehealth-delivered occupational therapy services in the clinic experiential learning activity is unknown.

The purpose of this study was to examine the client experience of the telehealth-delivered services. Our research question was, what is the client experience of occupational therapy services delivered by occupational therapy students via telehealth?

METHODOLOGY

Design

This pilot study employed a survey design to examine the client experience of telehealth-delivered occupational therapy services provided by occupational therapy students in a course clinic setting. The researchers created a survey tool with open and closed ended questions. The survey design offered anonymity to this group of clients. The survey tool was an effective use of client time and did not require additional travel time or cost to participants. The tool allowed consistency in data collection for two groups of clients in sections of the clinic occurring at two different time points. The University Institutional Review Board reviewed and approved the survey and corresponding research study.

Participants

Inclusion criteria were participation in the faculty-supervised, student-led clinic and ability to complete a survey either independently or with minimal assistance. Inclusion criteria to participate in the clinic narrowed the sample to community dwelling older adults with a neurological or orthopedic diagnosis. Convenience sampling was used to identify ten community dwelling adults who volunteered to participate in the clinic. Participants learned about the clinic through local area hospitals, stroke support groups, community clinics that delivered occupational therapy services, and by word of mouth through previous clients.

Clinic Experience

The clinic was embedded in a course that took place during the final academic year before Level II fieldwork and incorporated concepts learned throughout the curriculum. The pro bono clinic course included didactic coursework and experiential learning.

Students prepared for the telehealth experience in the first three weeks of the course. They reviewed a lecture on telehealth as a service delivery format, learned about the Health Insurance Portability and Accountability Act compliant software used in the clinic called VSee (VSee, 2018), read articles related to telehealth service delivery, and engaged in discussion of ethical and legal issues related to telehealth service delivery. Students downloaded the free version of VSee software on their personal computers and practiced using VSee software with a classmate prior to working with clients.

At the end of week three, students met with a client in-person to conduct an evaluation. Students worked in groups of two or three under the supervision of the course instructor or teaching assistant (both licensed occupational therapists). Students and clients brought their personal computers to the first in-person session and the course instructor assisted as needed with software installation. Students and clients received a customized VSee software manual to match their personal computer operating system. Students conducted a test call with their client to assure proper installation of software and performance.

After the initial evaluation, students created intervention plans and delivered services via telehealth for five sessions over the remaining five weeks of the course. All sessions occurred synchronously using VSee software to videoconference and share written materials. Students met in-person with clients for re-evaluation and discharge planning at the end of week seven. Clients received discharge recommendations and home programs as indicated. Clients received a follow up telehealth session during the next week (week eight) to review and address questions or concerns. Students received supervision and feedback on all sessions from an occupational therapist licensed in the home state of the clients.

Occupational therapy services were client centered with assessment and intervention based on client need. Students selected a guiding occupation-based theory and frame of reference to guide treatment based on the client, diagnosis, and client goals. Approaches were rehabilitative or compensatory based on the client, prognosis, and goals. Individualized services focused on increasing independence with activities of daily living, instrumental activities of daily living, work, leisure, and/or sleep.

Survey Instrument

The course instructor created a descriptive survey to explore the clients' experience of the telehealth delivered occupational therapy services. The survey initially consisted of five open-ended questions based on the existing telehealth literature related to the client experience and questions the course instructor had related to the clients' experiences of the telehealth delivery method. A content expert on telehealth reviewed the survey and shared feedback. The course instructor incorporated feedback into a revised survey. Survey revisions included the addition of demographic questions, re-wording for enhanced clarity of instructions, and the addition of three close-ended questions. The recommendation for close-ended responses was based on performance of previous instruments related to the client experience of telehealth delivered services and technology (Parmanto, Lewis, Graham, & Bertolet, 2016; Spence, DeYoung, & Feng,

2009). These questions asked about the client's experience with the software used to receive the telehealth services. Telehealth software is integral to the client's experience of telehealth service delivery (Parmanto et al., 2016). The final version of the survey had nine open-ended response options and three five-point Likert style close-ended response items (see Appendix A).

Procedures

Ten clients participated in the faculty supervised, student led clinic experience that occurred in two sections. One client participated in both sections. The first section was from June 11 through July 16, 2016. The second section was June 10 through July 15, 2017. Participants commuted to the university for an in-person initial evaluation, then received five telehealth delivered sessions in their own home and returned to the clinic for in-person re-evaluation with discharge planning.

The researchers mailed the survey on July 22, 2016 to all six clients who participated in the first section (June 11 – July 16, 2016) of the clinic with telehealth delivered interventions. The five clients in the second section (June 10 – July 15, 2017) received the survey on July 8, 2017 during their last in-person session with instructions to mail the survey back if they chose to participate in the study. The duplicate participant from section one to section two received instructions not to fill out the survey if she had done so after the first section. The mailing included a cover letter, a paper copy of the survey, and a stamped return envelope. The research team sent a follow up reminder approximately one month following the first section and approximately one week following the second section. Return of the survey constituted consent to participate in the research study.

Data Analysis

The authors compiled close-ended survey responses in a Microsoft Excel® spreadsheet. The authors summarized this ordinal level data from the Likert style questions using descriptive statistics. They examined range, median, and frequency of responses for each item. Median is the best reflection of central tendency for this small sample with a skewed distribution of scores (Portney & Watkins, 2009).

The first author reviewed open-ended responses, organized the responses into categories of related responses, and determined frequency of responses for each category. The second author reviewed the summary of open-ended responses for accuracy. The two authors met to discuss and finalize final categories and frequencies. They decided to consolidate two categories to one and updated five frequency counts in the final dual review.

RESULTS

Six of the ten clients completed the survey for a response rate of 60%. Three clients returned the survey prior to the follow up reminder, and three returned the survey after the follow up reminder.

All participants were middle class, white, Midwestern adults, living in the area surrounding the university; this is the predominant demographic for the geographical area. Participants ranged in age from 19 to 74 years with a median age of 55 years. Four participants were female (one male). One participant did not report age, gender, or diagnosis. Participants reported no previous experience with telehealth. Table 1 displays participants' self-reported primary diagnoses and demographics.

Table 1

Participant Demographics

Characteristics	Participant 1	Participant 2	Participant 3	Participant 4	Participant 5	Participant 6
Gender	F	M	F	F	F	Not Reported
Age	55	36	19	59	74	Not Reported
Diagnosis	Ischemic Stroke	Stroke	MoyaMoya and Stroke	Weakness Right Arm and Hand	Rheumatoid Arthritis	Not Reported

Open-Ended Responses

All participants provided a response for each open-ended item on the survey (Items 1-5). Table 2 displays the categories of related participant responses and frequency of participant report.

Table 2

Participant Responses to Open-ended Items 1-5

Item	Participant Response Categories (Frequency of Response)
(1) Given your recent experience with telehealth, please explain or list what you felt was beneficial about receiving occupational therapy services in the telehealth format?	Did not have to leave the house (2) Saved roundtrip travel time and expense (5) Did not have to worry about finding a ride (1) Easy to set up and use the VSee software (1) Good interactions with therapists (5) Therapists responded to questions right away (3) Kept me responsible and hardworking (1) Telehealth was convenient (1) Therapists collaborated for better quality treatment (1) Therapists made sure I was doing all exercises correctly (1) Therapists never walked away to assist other patients (1)

(2) Given your recent experience with telehealth, please explain or list what you felt was difficult about receiving occupational therapy services in the telehealth format?	Need to re-position computer at times for a good camera view (2) Need for assist from a second person at home (3) Not having the therapists physically present (2) Adapt exercises to work at home (1) Technical issues (1) Connectivity issues could make communication slow and/or frustrating (2) Starting the computer and opening the program (1) Time zone differences (1)
(3) Given your experience with telehealth, would you participate in telehealth occupational therapy services again?	Yes, but I would prefer in-person therapy if it was possible (2) Yes (4)
(4) Did the use of telehealth make it easier, more difficult, or have no impact on your ability to participate in occupational therapy services?	Yes, it was easier not having to travel (4) Yes, it was easier not having to schedule around work (1) Yes, it was easier (1) No, I needed more hands on from therapists (1)
(5) Have you received traditional occupational therapy services provided in a face-to-face format before? If so, how did receiving occupational therapy services in a telehealth format compare?	Therapists cannot provide hands on treatment during telehealth (2) Harder to read body language during telehealth (1) More personal attention with telehealth (1) Telehealth was just as good as in-person therapy (1) Telehealth made carryover with home programs easier (1) No prior in-person therapy experience for comparison (1)

Close-Ended Responses

All six participants provided responses to close-ended items (Items 6-8). Participants did not completely disagree with any of the items. Items 6, 7, and 8 all had a median rating of 4. Items 6 and 7 had a range in ratings from 3 to 5, and item 8 had a larger range of 2 to 5. Table 3 displays the frequency of ratings for each item. Table 4 shows the verbatim participant comments for each item.

Table 3

Frequency of Participant Responses for Close-ended Survey Items

Item	1 (Disagree)	2	3	4	5 (Agree)
(6): It was easy to communicate with others using the VSee software.	0	0	2	2	2
(7): It was easy for me to find and use all of the features of the software that I needed to.	0	0	2	2	2
(8): I had minimal problems using the software.	0	2	0	2	2
Frequency Totals	0	2	4	6	6

Table 4

Participant Comments on Close-ended Items 6-8

Item	Comments
(6) It was easy to communicate with others using the VSee software.	<ul style="list-style-type: none"> • “Easy to set up and use software but technical problems interrupted sessions. Small screen with multiple windows made images small.” Participant 1 • “Occasional problems seeing and hearing everyone at the same time. I needed my caregiver to figure it out.” Participant 2 • “Communication -was easy when the software worked, when the camera was out of order it was quite challenging.” Participant 3 • “Sometimes there were sound and delay issues.” Participant 4 • “As long as computers worked we could connect.” Participant 6

<p>(7) It was easy for me to find and use all the features of the software that I needed to.</p>	<ul style="list-style-type: none"> • “Most of it was very straight forward, but hard to tell what caused problems and how to fix when they cropped up, i.e., whose connection went bad?” Participant 1 • “Not very user friendly for me. I couldn’t see everyone and didn’t understand some functions.” Participant 2 • “When in working order, the features were great! Chat was the one feature I used the most to communicate outside of the sessions.” Participant 3 • “Didn’t use any other features other than the connect feature (connect call).” Participant 4 • “Had some trouble signing everyone in at the beginning of each session.” Participant 5 • “If I can figure it out it has to be easy.” Participant 6
<p>(8) I had minimal problems using the software. If problems occurred, please provide examples of some of those problems.</p>	<ul style="list-style-type: none"> • “Volume cut out. Bandwidth signals got weak, and screens or images would freeze and interrupt conversations. Some feedback sounds on microphones.” Participant 1 • “My only problem was seeing all users at once or not being able to see myself.” Participant 2 • “Time and time again I had issues with camera and being able to interact with the therapists. My screen for some odd reason was black on multiple occasions giving us the capability to talk, but they could not see me and how I was performing the exercise or designated task. I had to delete and re-install the program to my computer on multiple occasions (on average once a week). After I did so the camera worked. A few times though I would trial my camera the morning of my session and it would work, but the next time I would go on 20 minutes before my session and retry the camera it would be black and require me to re- install the software.” Participant 3 • “Had issues downloading the VSee program, once they were corrected, no problems. Therapists were great in communicating via phone or texting when sound issues arose.” Participant 4 • “See above.” Participant 5 • “No issues.” Participant 6

DISCUSSION

Clients in this study reported both benefits and barriers to telehealth, with overall benefits outweighing barriers. This replicates previous research findings of an overall positive client experience in which reported benefits outweighed barriers (Chou et al., 2013; Eikelboom & Atlas, 2005; Levy et al., 2015; Polinski et al., 2015; Waibel et al., 2017; Young et al., 2011). However, even when clients report an overall benefit from telehealth service delivery, their opinions and preference for telehealth may not be entirely positive (Sorenson, 2008). This study confirmed these findings with participant comments indicating a range of values, including valuing telehealth, the idea that telehealth is better than nothing, and a dislike for aspects of telehealth. It is possible for people to have an appreciation for some aspects of telehealth and a dislike for other aspects simultaneously. This may be influenced by the individual needs of the client. In this study, two participants expressed a need for more hands-on interventions from the therapist. It is possible, although not known, that these participants may have required more physical assistance during therapy than other participants. Support from a caregiver, friend or family member at home was also unknown, but support or lack of support may have factored into the client's feelings about using telehealth-delivered services.

Participant open-ended responses to item one (benefits of telehealth) included the relationship with therapists. Participants had positive comments related to their relationships with the therapists with five comments related to overall good interactions with therapists, and one specific comment related to therapists collaborating for better quality treatment. Given that the word therapists was plural in the client comments, it is assumed they referred to both the students and their supervisor. The overall positive spontaneous comments related to therapist relationships in item one indicates the addition of the supervising occupational therapist did not have a detrimental effect on the quality of relationships in the telehealth service delivery format. Furthermore, clients appreciated having two people collaborate in their care. Gibson et al. (2016) found similar findings in their study of 29 clients and caregivers participating in a telehealth delivered visit status post an acute stroke. The participants noted a benefit of telehealth delivered care was that providers effectively communicated for improved clinical decision-making (Gibson et al., 2015). It is interesting that this finding carried over to the student therapist, supervising therapist collaboration in the clinic experience.

People tend to be comfortable with technology most familiar to them and technology they used in the first 30 years of their life (Lim, 2010). A survey of vocational rehabilitation clients' preference for technology for support service delivery revealed phones, either cellphone or land line, were the most preferred devices, followed by e-mail, text, and finally videoconferencing (Ipsen, Rigles, Arnold, & Seekins, 2013). Furthermore, people who have had a previous knowledge of telehealth and experience with videoconferencing technology tend to hold a more positive view of telehealth (Eikelboom & Atlas, 2005; Gibson et al., 2016). In this study, participants did not have previous experience with telehealth delivered services, and videoconferencing was the format for service delivery. The study did not survey participants' previous experience with technology; however, comments indicated there was a range in technology

experience among clients. Despite previous telehealth experience and the possibility of unfamiliarity with videoconferencing, the majority of clients reported little to no difficulty with the technology. It is possible the initial training session and ongoing support from the student therapists overcame any inexperience or lack of confidence with technology. Furthermore, one participant commented that a caregiver provided support with computer set up. Participants may have utilized support from someone at home to prevent issues with technology.

Participants did report some occasional disruptions in communication related to the telehealth technology. A participant commented that when more than two people were teleconferencing the audio quality was diminished to some extent. It is interesting that in this study the close-ended responses did not reveal this issue; it only emerged in open-ended responses. Furthermore, the close-ended responses indicated that technical issues did not affect relationships. This finding is consistent with previous research (Serwe, Hersch, Pickens, & Pancheri, 2017; Steel et al., 2011).

Participants in this study reported the home environment was a benefit of the telehealth delivered services and indicated they thought this would assist with carryover of benefits and increased ease of completing home programs. A systematic review of telehealth interventions for people status post stroke, consistent with the predominant self-reported diagnoses in this study, indicated telehealth service delivery works well for this population, including targeted exercises to improve affected upper extremity function (Johansson & Wild, 2011).

A previous in-home telehealth delivered intervention had reported benefits similar to this study of improved access to services with less need for transportation, strong relationships with providers, appropriate home programs, easy to use equipment, and a feeling of support (Kairy et al., 2013). Participants in the Kairy et al. (2013) study additionally commented that telehealth was a complement to in-person visits. The participants in this study received two in-person visits, but did not comment on the implications of in-person evaluations combined with telehealth delivered services.

Participants who have difficulty accessing care either due to time or transportation issues are more likely to be receptive to telehealth (Polinski et al., 2015). Saved time and reduced need for transportation are commonly reported benefits of telehealth (Eikelboom & Atlas, 2005; Kairy et al., 2013; Kruse et al., 2017; Levy et al., 2015; Polinski et al., 2015) that were confirmed in this study. It may be a benefit to match clients to telehealth and in-person delivered services based on needs such as time and transportation barriers, and need for hands on or manual components of treatment, including consideration of support of a caregiver, friend, or family member at home.

Limitations

This research was limited by the small sample size and lack of diversity among participants. There was only one male participant in the study. All participants were from the same geographical region. There was a range in age, however most participants had a similar diagnosis of a cerebrovascular accident and some degree of

upper extremity hemiparesis. These factors limit generalizability of results. Culture (Rashid & Jagger, 1992), age (Rohland et al., 2000; Sorensen, 2008), and gender (Eikelboom & Atlas, 2005) are associated with perceptions of telehealth delivered services. Education and technology experience may also influence perceptions of telehealth delivered services (Sorensen, 2008). This study did not assess education or ask about cultural background or experience with technology.

The use of a self-developed survey with no prior validity testing was a further limitation of the study. Participants may also have had a recall bias, and participants in the two sections received the study at different time points following the end of the clinic experience. Finally, the five-point Likert scale ratings may not have been clear to the participants.

Future Research

Future research should involve larger samples including a range of diverse participants from both genders, from various geographical areas, with a range of ages, with varying diagnoses, and from diverse ethnic and cultural backgrounds. Future research should also measure education level and previous experience with technology. Future research should explore the relationship between the need for hands-on or manual therapy and physical assistance as a factor to consider when determining use of telehealth delivered services. Future research should explore the student experience of telehealth service delivery and the students' learning outcomes.

Implications for Service

The results of this study support an overall positive client experience of telehealth as a delivery format in an occupational therapy student clinic. Clients reported benefits including convenience, not needing transportation, less expense, easy to set up and use software, good interactions and communication with therapists, individualized attention, and a feeling of accountability.

IMPLICATIONS FOR OCCUPATIONAL THERAPY EDUCATION

The use of telehealth for service delivery is becoming more common. ACOTE standards (ACOTE, 2017) encompass a need to understand telehealth technology. The clinic experiential learning aspect of this course may better prepare students to deliver services via telehealth. Furthermore, the clinic with telehealth service delivery allows students more time to work with clients than was previously possible. The service delivery method allows students to implement knowledge and skills gained in didactic learning into clinical practice through experiential learning directly supervised by instructors who are licensed occupational therapists. Students receive feedback in real time and have time to reflect and process after the experience, including review of themselves delivering services. This clinic including telehealth delivered interventions may provide valuable learning opportunities previously not possible to this student population. However, if the client experience of services delivered in this manner is not positive, it is not ethical to utilize this service delivery format for this purpose. This research establishes that a telehealth service delivery method for student-delivered occupational therapy services is acceptable to clients. Future research should examine

the student experience and learning outcomes of telehealth delivered services in the clinic course. This method could have implications for designing experiential learning components in other courses and programs.

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APPENDIX A

Survey Questions

- (1) Given your recent experience with telehealth, please explain or list what you felt was beneficial about receiving occupational therapy services in the telehealth format?
- (2) Given your recent experience with telehealth, please explain or list what you felt was difficult about receiving occupational therapy services in the telehealth format?
- (3) Given your experience with telehealth, would you participate in telehealth occupational therapy services again? Why or why not?
- (4) Did the use of telehealth make it easier, more difficult, or have no impact on your ability to participate in occupational therapy services? Please briefly explain.
- (5) Have you received traditional occupational therapy services provided in a face-to-face format before? If so, how did receiving occupational therapy services in a telehealth format compare?

Please think about your experience using the computer and VSee® software (that you used to participate in clinic) when answering the following questions. Please rate using the scale and briefly explain your answer in the comments section.

	N/A	Disagree	1	2	3	4	5	Agree	Comments
(6) It was easy to communicate with others using the VSee software.									
(7) It was easy for me to find and use all the features of the software that I needed to.									
(8) I had minimal problems using the software. If problems occurred, please provide examples of some of those problems.									