

CONTINUING EDUCATION IN PSYCHOLOGY: COMPARISON OF LEARNING
OUTCOMES FROM THREE DIFFERENT HOME STUDY METHODS

By

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LIST OF ABBREVIATIONS

ANOVA	analysis of variance
CE	continuing education
DF	degrees of freedom
M	mean
SD	standard deviation
SE	standard error

Abstract of Thesis Presented to the Graduate School of the University of Florida in
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How effective is continuing education (CE) at maintaining professional competencies, how frequently is home study CE utilized by practitioners, and how are learning outcomes impacted by different delivery methods of CE? These issues were addressed in a study based within a home study CE program in which 98 professional clinical psychologists participated. One of three home study CE formats (audio, written, or audio-visual) was randomly assigned to each participant. Each program was followed by a common post-test and accompanied by a few surveys that reflected perceptions upon gained knowledge from the current study's program and home study CE participation in the last licensing cycle. Overall, clinical psychologists were able to demonstrate differential levels of learning as a result of CE presentations in either written, audio-visual, or audio formats. Significant differences were found between levels of learning in those who were participated in the three different formats, with written and audio-visual formats resulting in greater measured levels of learning than audio format. Findings are discussed in relation to the field's move toward demonstrated competencies and further need for empirical testing of the field's CE.

CHAPTER 1 LITERATURE REVIEW

Introduction to Continuing Education

Training in professional psychology consists of two phases; an institutionalized training program that grants a formal degree, and post-license self-managed continuing education. A formal degree is granted after the acquisition of foundational knowledge and the integration and application of this knowledge within practice contexts have been demonstrated (Young et al., 2000). This degree is granted within a graduate training program of 5-7 years duration, followed by a year or two of preparation for licensure. Although all states require postdoctoral training prior to licensure, the nature and extent of that experience varies widely (Stewart & Stewart, 1998).

The second part of psychological training, post-license professional development, relies upon psychologists' self-assessment of needs and interests, and is largely self-managed. Post-license education for practicing psychologists is referred to as Continuing Education (hereafter referred to as "CE",) and ongoing CE builds upon the foundational knowledge of the licensed practitioner (Neimeyer, Taylor and Wear, 2009). This form of education is revisited throughout the remainder of the professional's life as a licensed psychologist (Neimeyer, Taylor and Wear, 2009) and is central to the maintenance of the psychologist's competence (Wise, 2004). Professional education within CE is designed to refine existing clinical skills, create mastery over changes in basic knowledge and clinical techniques, and develop new skills in practitioners (Daniels & Walker, 2002). Psychologists are expected to assess their needs and weaknesses in regards to their overall competence and ability to meet the needs of their

clients, and to seek out continuing education opportunities to strengthen their practice as a result of this self-led evaluation (Crespi & Rigazio-Digilio, 1992).

The American Psychological Association emphasizes the importance of CE within the field, defining continuing education as:

an ongoing process consisting of formal learning activities that are relevant to psychological practice, that enables psychologists to keep pace with emerging issues and technologies, and allows psychologists to maintain, develop, and increase competencies in order to improve services to the public and enhance contributions to the profession” (APA Council of Representatives, 2009; p. 2).

However, it is important to note that formal CE does not operate in isolation to develop professional competencies; incidental and informal learning also occur (Neimeyer, Taylor, & Wear, 2009). Goodyear and Lichtenberg (2008) discriminate among formal continuing education (e.g., workshops, courses), informal learning (e.g. supervision, professional books or journals), and incidental learning, where learning on the part of the therapist is secondary to the primary objectives of the experience (e.g., reviewing manuscripts, client interactions). Yet, as previously mentioned, formal CE is the sole licensing act demanded of licensed psychologists.

CE has many important purposes within the field which include increasing professional competence, preventing professional knowledge atrophy, integrating “up-to-date” information, and facilitating newer, increasingly effective clinical interventions (Cohen & Dubin, 1972; Sechrest & Hoffman, 1982; VandeCreek, Knapp, & Brace, 1990). What’s more, CE and other means of professional development are crucial to provide clients with competent care and, in a more general sense, to meet the ethical parameters of psychological practice (Wise, 2004). The APA Ethical Principles of Psychologists and Code of Conduct require that psychologists undertake ongoing

efforts to maintain and develop their competence and base their practice upon established scientific and professional knowledge (APA, 2003; Principle 2.03- 2.04).

The current study reviews CE's ability to meet the field's demands, examines the outcomes associated with this stage of professional development, and explores the impact of different methods of CE delivery on learning outcomes within the field of psychology. An understanding of the importance of research in this area requires an understanding of the broader context of continuing education within the profession and the way in which it currently operates. The following sections provide this context by examining CE requirements and outcomes as a prelude to outlining the nature of the current study and its predictions.

CE Requirements and Participation

Current literature underscores the necessity of CE and associated mandates. Several researchers explored the estimated duration of a practicing psychologist's post-graduate school competence and concluded there is a "half-life" of professional competence. This "half -life" of professional competence is defined as "the time after completion of professional training when, because of new developments, practicing professionals have become roughly half as competent as they were upon graduation to meet the demands of their profession (Dubin, 1972, p.487)." Dubin concluded that for psychologists, this half-life was approximately 10-12 years post-licensure. However, due to the rapid expansion of psychological knowledge since Dubin's 1972 estimate, the current half-life of psychological competence is likely to be considerably shorter (VandeCreek et al., 1990). Given that the half-life of professional knowledge is less than 10 years, and that most psychologists' professional lives are two or three times that

length, the value of CE is clear. This values is reflected in the legal statutes that mandate CE for license renewal in most states.

In fact, all but seven states currently require CE for license renewal (Neimeyer et al., 2009). This requirement demonstrates the widely perceived importance of CE for individual psychologists and for the broader field of psychology. However, state mandates differ in regards to the types of CE that are acceptable for formal CE certification (Daniels & Walter, 2002). Despite the fact that “mandatory requirements are the sole licensing action addressing continued competencies,” (Rubin et al., 2007, p. 456), the actual impact of CE on continuing competencies remains largely unknown (Neimeyer, Tayler, & Wear, 2009). In reference to this lack, VandeCreek et al. (1990) skeptically inquired whether the “profession can count on the integrity of individual practitioners to maintain competence?”(p. 136).

Empirical evidence supports VandeCreek et al.’s (1990) skepticism, at least in relation to CE participation. In 1987, Phillips found that 25% to 30% of practitioners do little more CE than what is required by their state mandates. A more recent study by Neimeyer et al. (2009) did not find a more “dutiful” population of practitioners today. Twenty-five percent of practitioners without CE mandates reported completing fewer than five CE credits per year. Because most state mandates require an average of 20 CE credits per year, Neimeyer et al.’s data imply that one of four practitioners without CE mandates completes only one quarter of the CE that is commonly mandated. It seems likely that, absent CE mandates, the field of professional psychology might be heavily populated by what Phillip (1987) referred to as CE “laggards.” In addition to

concerns regarding CE participation, however, further concerns follow from the fact that the reputed outcomes associated with CE remain largely untested.

CE Outcomes

The overall impact of CE on critical professional outcomes remains largely unknown (Neimeyer, Taylor, & Wear, 2009), and still less is known about the impact of different forms of CE delivery. Part of the problem owes to the fact that psychologists are expected to self-regulate the CE programs in which they participate and that different types of CE, for example home-study, on-site workshops, and teleconferences, have different expectations for post-CE demonstrated learning. Home-study CE requires participants to pass a post-test in order to receive CE credit, however, the closest semblance of measured learning after seminar style CE is that of follow-up satisfaction surveys. Furthermore, there are no studies that compare the effectiveness of differing forms of CE, though CE is delivered through various formats. When it comes to the evaluation of their learning, psychologists remain ambivalent about assessing it. Sharkin and Plageman (2003) asked psychologists how they felt about mandated learning outcome assessments. Sixty percent of psychologists did not support assessments aimed at documenting their knowledge gains from their CE participation. Only 20% supported knowledge assessments, and the remainder were neutral. Despite the lack of assessments or even support for such an addition in effort to document knowledge gains, it is commonly known that CE is expected to generate professional learning, to transfer that learning in practice, and to register its effects on more positive practice outcomes.

In the absence of knowledge assessments it is difficult to determine the extent to which new learning occurs or translates into subsequent practice. What little evidence is

available in this regard, however, provides mixed support for these notions. Only 54% of practitioners surveyed claimed they often or frequently are able to translate information from CE programs into their practice. In addition, only 35% of those surveyed claimed they were occasionally able to translate information from CE programs into their practice (Sharkin & Plageman, 2003). This suggests that many practitioners report that CE learning does not translate into their clinical work. This lack of CE translation to clinical practice invites questions regarding how well the field of psychology adheres to its professional and ethical guidelines, and more specifically how differing forms of CE translate into positive practice outcomes.

The Current Study

The current study addressed the lack of evidence for learning as a result of CE. In particular, it addressed the learning outcomes associated with different delivery methods of CE. “Traditional” CE delivery is offered within live, group-based seminars led by specialists in a specific field. These seminars are hosted by accredited colleges, universities, or other CE sponsors that are approved by the APA, or other organizations. At the end of the CE seminar, participants complete a satisfaction survey regarding the seminar. This survey often asks about participants’ subjective overall experiences and perceived knowledge gains.

An alternative to this traditional CE format is home study CE. Home study CE consists of audio formats, such as CD’s, text-based programs, such as books or downloadable PDF files, and audio-visual presentations commonly offered over the web. These formats require that participants either read an extended text file, listen to an audio file, or watch an audio-visual program; each program addresses a specific topic within the field. Following each home study program there is a post-test that seeks

to assess each participant's level of learning. If the participant is able to achieve at or above 75% accuracy on the post-test, then he or she "passes" and receives CE credit for his or her time and participation. Home study CE has some benefits over traditional on-site workshop programs that include cost-effectiveness, convenience, accessibility, reduced workplace time loss, and the allowance for learning at each clinician's individual's pace (Mamary & Charles, 2000). Even more, the continual expansion of the Internet has fueled the opportunity for home study CE to continually develop technologically and better meet the needs of practitioners (Daniels and Walter, 2002).

Innovative technological methods for delivery of CE programs such as web-based programs are becoming more frequently utilized (Issenberg et al., 1999). Although their use is growing, web-based distance learning remains in an early stage of development. These programs face significant growth edges and have not yet attracted empirical attention to assess their effectiveness. There is also research to indicate that a significant barrier to home study web-based CE programs is a lack of adequate computer skills within the population of practicing psychologists. Mamary & Charles (2000) found that 75% of respondents in their survey study would be interested in receiving instruction on the use of the Internet for CE/CME. As technology shifts the field's CE into more web-based programs, psychologists may benefit from efforts to increase their skill set to accommodate such evolution within the field; such efforts may become necessary in order for psychologists to stay in tune with evolving technologies.

As expected for a fledgling educational resource that faces a wide generation gap, web-based and distance-learning programs have not replaced live, didactic continuing education as the norm (Daniels & Walter, 2002). However, it is important to note that

traditional CE delivery may be yielding to technology-mediated forms of CE delivery (Neimeyer et al., 2009). Sharkin & Plageman (2003,) for example, have reported that 43 % of their participants utilized some form of at home study CE occasionally and 19% utilized home study CE frequently.

Despite the potential ease of web-based CE to provide opportunities for measured learning outcomes, there remains an absence of direct measures of learning associated with all forms of CE within the field. This absence of knowledge is inconsistent within the current movement toward demonstrated competencies (Rubin et al., 2007), despite decades of calls for such empirical review (Webster, 1971; Ross, 1971; VandeCreek et al., 1990; Neimeyer et al., 2009). As the field of psychology continues to interface with the field of institutionalized medicine, it is likely that demands will emerge for empirical evidence that CE fulfills the purposes it is assigned. Within the medical field research has empirically demonstrated the ability of continued medical education (CME) to positively impact family physicians and benefit their practice (Jannet et al., 1988; Bloom, 2005; Davis et al., 1999). The field of professional psychology has yet to document similar outcomes associated with CE in its literature.

Summary

The purpose of the current study is to explore differential learning outcomes associated with three common forms of home study CE delivery: audio, written, and audio-visual. We have chosen home study delivery methods because of 1) their rapid expansion within the field of professional psychology (Daniels & Walter, 2002), 2) their accessibility across time and location (and hence the capacity to recruit a national sample) and 3) the ability to control for a range of factors that might otherwise vary with the delivery of multiple on-site programs (i.e. differences in presenters, participants,

physical settings, etc.). In short, by providing the identical program content over the Internet in three different formats, we hoped to be able to assess the differential effectiveness of these media in relation to the learning outcomes following from them.

We chose a particular content area to present on, Internet Addiction, in these three conditions (see Methods, below) because we believed this area of research that was relatively new and thus relatively unfamiliar to the range of licensed professionals participating in the study. By randomly assigning each participant to one, and only one of the three conditions, we hoped to be able to examine the impact of delivery method on the learning generated by each of these methods.

Previous studies provide empirical evidence to support the notion that “synchronized audio and video media are more effective than the provision of separate media items containing the same information” (Griffin et al., 2009, p. 536). Griffin et al. also found that there was a significant difference in overall post-test scores depending on delivery method; formats containing synchronized audio and visual information resulted in higher post-test scores. Furthermore, the synchronized approach was favored over the other delivery methods, and participants appreciated the benefits of e-learning, particularly when reviewing materials. This expectation that audio-visual programs will not only maximize information retention but also outperform other methods in relation to clinician satisfaction, is in line with the notion that technology is expected to play an increasingly pivotal role within CE in psychology (Daniels & Walter, 2002).

Hypothesis

This study utilizes two dependent variables: 1) the overall “pass rate” of practitioners within each CE delivery method (minimum of 75% correct for a “pass”),

and 2) the percentage of correct responses on the post-test associated with each delivery method. The first variable gives indication whether a participant would receive CE credit towards licensure, while the second variable gives indication of the percentage of knowledge retained from the presentation by each participant. These two dependent variables were distinguished in effort to assess any differential learning that may occur in relation to each of the three methods of CE delivery.

The overall pass rate, as well as the percentage of correct scores, is expected to be greater in the audio-visual condition than in either the written or audio-only delivery methods. We expect audio-visual presentations to outperform other home study methods such as in CDs, or written texts, as in PDF's or textbooks. Although this study specifically predicts the learning outcomes of audio-visual presentations to be significantly greater than those of the written and audio CE presentations, these types of findings have not been documented within professional development the literature in psychology thus far. However, as indicated by Griffin et al. (2009) there is tentative evidence in related fields that supports the notion that not all delivery methods generate equal learning outcomes.

CHAPTER 2 METHODS

Participants

Participants were psychologists contacted through their membership in Division 45, 52, and the American Psychological Association Practice Organization online practitioner directory. Due to spam filters, changed e-mail addresses, and the ability to forward the study to colleagues, the total number of psychologists that were reached in this effort is difficult to estimate. Each email contained a brief description of the study and a direct link to facilitate participation. The emails included three differing links leading to the three differing CE delivery formats (audio, written, and audio-visual); the links were assigned randomly to participants, with each participant being assigned to one, and only one, of the three conditions. Each link took participants to 1) the informed consent page, 2) the CE program, 3) a post test, 4) a demographic survey, 5) an assessment of knowledge regarding the topic of Internet Addiction, 6) a mini survey assessing for Internet Addiction within the participants, and 7) a CE questionnaire, in stepwise fashion. The CE questionnaires asked participants which factors they consider in CE selection (such as cost, location, etc.), their patterns of CE participation during the most recent licensing cycle, and their perceptions of the outcomes associated with their CE experiences.

Overall, 98 licensed psychologists participated in the study; 23 in the audio-only condition, 28 in the audio-visual condition, and 47 in the written condition. Of the psychologists who reported their gender in the current study, 58.3% were female and 41.6% were male. 94.49% of participants identified as Caucasian, 4.26% Hispanic, 1.06% African American, 1.06% Asian American, and 2.12 % as other. The

percentages of ethnic minorities in the sample approximate the percentages of psychologists represented in the membership of APA, where 2.1% are Hispanic, 1.8% African American, 2% Asian, and .6% report “other” (Center for Psychology Workforce Analysis and Research, 2007). In the current sample, ages ranged from 31 to 74, with a mean age of 53.68 (SD = 10.20), which closely approximates the mean age of APA members (54.3 years). Most psychologists in the sample were experienced practitioners who received their degrees, on average, 20.5 years earlier (SD = 11.07 years). The sample was divided into the delivery methods to distinguish if there were any noticeable variance between groups of racial-ethnic identity, gender, or age. There were no significant differences found between these groups in these three criteria. These data are indicative of a representative sample and support the generalizability of this study’s findings to the broader population of practicing psychologists.

Measures

Independent Variables

Three CE programs were developed on the topic of Internet Addiction. This topic was chosen because relatively few professional psychologists receive such training either within their graduate training programs or subsequent to their graduation, in the course of their ongoing professional development programs. Therefore the baseline of prior knowledge was expected to be relatively low. The CE program discussed: 1) the current definitions surrounding the topic of Internet Addiction, its historical context, and its background; 2) the “digital divide” between those born into the Internet era and those “immigrated” into it; 3), currently accepted types of Internet addictions such as cybersex addiction, online gaming, gambling, and auction houses (e.g., Ebay); 4), case studies that demonstrate the impact this addiction can have upon a client’s personal life; 5), risk

factors and comorbidity associated with Internet Addiction; 6), potential treatment methodologies; and 7) issues concerning the prospective inclusion of Internet Addiction into the next DSM revision. The CE programs were designed as a 2-hour programs that provided 2 CE credits.

The CE programs used in the study were consistent with CE presentations common in the field. They addressed a topic that could commonly arise in a counseling session, they were offered in formats that were consistent with current mechanisms for delivering home study CE (text-based, audio and audio-visual), and they provided actual CE credits through the co-sponsorship of an APA-approved CE Sponsor. These features were all designed to support the external validity of the study and the generalizability of its findings.

The consistency of information across the three conditions was carefully controlled. The audio-only version was a one hour and 47 minutes mp3 file that played only the audio from the audio-visual presentation. The written version was a 28-page single spaced written transcript of the audio that was presented both in the audio version and the audio visual presentation. The audio-visual presentation was one hour and 47 minutes, and consisted of an audio file with synchronized Power Point slides. These slides contained graphs, cartoons, and key words that were drawn from the information presented in the audio; the visuals were designed to emphasize key points within the audio. The same information was provided in all three delivery platforms. However, the audio-visual method was expected to generate the best learning outcomes owing to the multiple media it incorporated.

Following each CE presentation there was a post-test examination that contained multiple choice questions covering the topics within the presentation. An exploratory study using 257 undergraduates at the University of Florida was conducted to refine the post-test question set in an effort to enhance the measure's reliability and validity. After dropping 4 of the original 30 test items, we utilized a 26-item multiple choice post-test.

Dependent Variables

This study utilized two dependent variables in effort to determine how CE delivery impacts participants' learning outcomes. The first dependent variable was the percentage of practitioners who achieved greater than 75% accuracy on post-test (i.e., the "pass rate"), in each of the three delivery methods. This variable enabled us to review each CE delivery method's suitability to lead to learning outcomes that would be given credit according to the guidelines developed by the American Psychological Association's Continuing Education Committee. The second dependent variable consisted of the percentage of correct responses on the post-tests under each of the three conditions. This variable enabled us to review the percentage of information retained from the presentation within each CE delivery method, as demonstrated by the percentage of correct responses on the post-test.

CHAPTER 3 RESULTS

This study first looks at preliminary data regarding participants' current home study utilization and examines familiarity with topic (i.e., Internet Addiction) before and after the presentation as a manipulation check to determine that participants perceived themselves as learning new information from the program. It then turns to its primary analyses and findings to determine how the method of CE delivery was related to the two measures of learning outcomes.

Descriptive Analysis

In reference to participation in home study methodologies, our 98 participants reported their individual participation within home study CE within the past licensing cycle (see Table 1). These findings indicate substantial variability, with participants reporting between zero and 40 hours of CE home study in the various formats over the course of the previous year with a mean of 5 hrs ($SD= 8.30$) as depicted in Table 1. The most used method of home study CE was the written format, however, there was a wide range of home study CE use, with psychologists reporting either not using home study CE to complete licensing requirements, using home study CE for partial completion of licensing requirements, or full completion of licensing requirements with home study CE.

Within this specific home study CE program, psychologists were also asked about their knowledge of Internet Addiction prior to, and following the presentation. Overall, they were likely to indicate that the CE presentation increased their competence on the topic (table 2). This self-reported increase in overall knowledge about the topic serves as a manipulation check that suggests the impact of each of the three conditions in

relation to enhanced learning concerning the topic of the presentations. A paired samples t-test was used to compare the means of these two measures of self-reported knowledge. On average, participants reported greater levels of knowledge following the presentation ($M=3.46$ $SE=1.07$) than before the presentation ($M=2.27$, $SE=.92$). This difference was statistically significant, $t(98)=13.63$, $p<.01$. These findings indicate that participants as a whole reported their post-presentation level of knowledge as significantly greater than that of their pre-presentation level of knowledge.

Primary Analyses

In order to compare levels of learning as a function of the three different delivery formats, two one-way, between-subjects ANOVAs were conducted to determine how CE delivery methods were related to learning outcomes. A one-way, between-subjects ANOVA was conducted to compare the percentage of participants who passed the post-test in each delivery method (see table 3-3 & 3-4). The analysis of variance indicated that the effect of delivery method was significant, $F(2, 95) = 8.22$, $p \leq .01$, $r = .38$. Post-hoc Bonferroni Correction indicated that the average number of participants who passed the post-test was significantly greater in the written condition ($M = .66$, $SD = .48$) and the audio-visual condition ($M=.68$, $SD=.48$) than in the audio condition ($M = .22$, $SD = .42$). The pair wise comparison of the written condition with the audio-visual condition was non-significant. The findings of the three-factor ANOVA and post-hoc Bonferroni Correction indicated that the overall percentages of participants who passed the post-test in the written delivery method and the audio-visual delivery method were significantly greater than the percentage of participants in the audio delivery method (see table 3-5).

A one-way ANOVA was used to examine differences between the three delivery methods in relation to the overall percentage of correct response by participants in each condition (see table 3-6). This ANOVA indicated that the effect of delivery method was significant, $F(2, 95) = 5.721$, $p \leq .01$, $r = .33$ (see table 3-7). The average post-test accuracy was significantly greater in the written condition ($M = .79$, $SD = .14$) and in the audio-visual condition ($M = .80$, $SD = .14$) than in the audio-only condition ($M = .68$, $SD = .11$). The pairwise comparison of the written condition with the audio-visual condition was non-significant. The findings of this three-factor ANOVA and post-hoc Bonferroni Correction indicated that the percentages of post-test question answered correctly in the written delivery method and the audio-visual delivery method were significantly greater than the percentage of correctly answered questions in the audio delivery method (see table 3-8).

Table 3-1. Self-reported home study CE hours of participation

Means:	All conditions	Audio	Written	Audio-Visual
Audio CE	2.67 (5.75)	3.17	10.04	3.26
Written	9.36 (10.67)	5.00	4.56	4.50
Audio-Visual	3.21 (5.77)	1.61	10.70	2.74
Combined	5.08 (8.30)			

Note: This table describes the means of CE hours reported per subgroup per licensing cycle as reported within all conditions, the audio, written, and audio-visual conditions

Table 3-2. Self Reported Internet Addiction Knowledge Pre and Post CE Presentation

	Pre-Test		Post-Test	
	M	SD	M	SD
Audio	2.33	.92	3.37	1.04
Audio- Visual	2.12	.95	3.34	1.27
Written	2.33	.90	3.56	.95

Scale 0-5, with 5 indicating higher levels of learning

Table 3-3. Descriptive Statistics for Pass Rate as Dependent Upon CE Delivery (N = 98)

	Mean Pass Rate	SD
Audio	.22	.42
Audio-Visual	.68	.48
Written	.66	.48

Table 3-4. Summary of ANOVA for Pass Rate

	Sum of Squares	df	Mean Square	F
Between Groups	3.56	2	1.78	8.22
Within Groups	20.57	95	.22	
Total	24.13	97		

Table 3-5. Bonferroni Comparison for Pass Rate by CE Delivery

Delivery Format	Delivery Format	Mean Diff (I-J)	Std. Error	95% Confidence Interval Lower Bound	Upper Bound
Audio	Audio-Visual	-.46*	.13	-.78	-.14
	Written	-.44*	.12	-.73	-.15
Audio-Visual	Audio	.46*	.13	.14	.78
	Written	.01	.11	-.25	.29
Written	Audio	.44*	.12	.15	.73
	Audio-Visual	-.02	.11	-.29	.25

*p<.05

Table 3-6. Descriptive Statistics for Post Test Accuracy as Dependent Upon CE Delivery (N = 98)

	Minimum	Maximum	Mean	SD
Audio	.42	.92	.59	.11
Audio-Visual	.50	.96	.80	.14
Written	.46	.96	.79	.14

Table 3.7. Summary of ANOVA for Post- Test Accuracy

	Sum of Squares	df	Mean Square	F
Between Groups	.21	2	.10	5.72
Within Groups	1.73	95	.02	
Total	1.94	97		

**p,0.01

Table 3-8. Bonferroni Comparison for Post Test Accuracy by CE Delivery

Delivery Format	Delivery Format	Mean Diff (I-J)	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Audio	Audio-Visual	-.12**	.04	-.21	-.02
	Written	-.10*	.03	-.19	-.02
Audio-Visual	Audio	.12*	.04	.02	.21
	Written	.01	.03	-.07	.09
Written	Audio	.10*	.03	.02	.19
	Audio-Visual	-.01	.03	-.01	.07

*p<0.05

CHAPTER 4 DISCUSSION AND CONCLUSION

Learning Outcomes

The current study is an assessment of learning outcomes, in direct answer to Neimeyer et al.'s (2009) call for "future research to determine the extent to which these perceptions match independent measures of learning, behavior, or service-related outcomes" (Neimeyer et al., 2009, p.16). The results of this study provide implications concerning the learning outcomes associated with CE programs in psychology. The strongest of these being that there is potential for delivery mechanisms to impact learning outcomes. Statistical analysis within our study indicates there is a significant difference in learning outcomes dependent upon CE presentation style, with written and audio-visual home study CE leading to more favorable learning outcomes compared to audio-only delivery method. As depicted in tables three and six, post-test pass rates and post-test accuracy both varied between CE delivery methods. Several differences were found to be significant, as depicted in table four and seven, and thus tentative conclusion follow. More so, as indicated by our findings within the post-test accuracy of the three presentation types, it is possible that within our study psychologists retained greater amounts of information from the audio-visual and written presentations types than in the audio presentation and were subsequently more likely to pass the post test in these two delivery methods. However, as this is an exploratory study based within one topic of psychology, further studies that include other CE presentation topics are necessary in effort to solidify these findings.

The validation of our hypothesis that participation in audio-visual home study CE would lead to greater outcome measures than participation in audio home study CE,

provides a starting point for empirical evidence that audio-visual presentations have potential to result in greater learning for practicing psychologists than some other formats (such as audio formats) (Mamary & Charles, 2005). We also found that participation in our written home study CE lead to greater learning than participation in our audio home study CE. These findings may indicate that audio-visual formats and written formats may produce similar learning outcomes. The field would be wise to continue empirically testing home study CE programs to strengthen or qualify the results of our study. If the findings from further studies solidify our notions about disproportionate learning outcomes from home study CE, it may be beneficial for the field to encourage greater production of audio-visual and written home study CE programs in favor over audio-only home study programs. Further studies should seek to empirically validate and compare delivery methods in terms of learning outcomes.

Ultimately, this study's findings may be useful in that they provide empirical support regarding demonstrated learning resulting from home study CE. More specifically, this study found support for relative efficacy of audio-visual and written home study CE to result in significant positive learning outcomes. As further research upon CE is conducted and if certain delivery methods become widely empirically validated, such home study CE programs may continue to alleviate hardships that traditional seminar CE places upon practicing psychologists, meet satisfaction needs of counselors, and provide empirically validated learning outcomes (Mamary & Charles, 2005). Furthermore, if certain delivery methods are found to be less than satisfactory in regards to post-test pass rate or post-test accuracy, the use of such less than efficient methods of CE delivery may be tapered or ultimately eliminated. Such a pruning could

lead to better educated practitioners, less time spent within certain CE formats that produce lesser learning outcomes, and in turn lead to better service provided.

The finding that written CE has the potential to result in greater learning than audio formats and is comparable to that of audio-visual formats, provides further awareness of a potential efficacy “hierarchy” amongst these three home study CE methods. It was somewhat unexpected to find that a 28-page single-spaced text could promote learning equivalent to that of audio-visual presentation. However, there is the possibility that participants printed the text and used it while completing the post-test. There is also the possibility that the delivery of text-based information within the written format facilitated the identification of the correct answers on the text-based CE post-test.

This study seeks to support the field’s movement towards the empirical validation of CE. Home study CE programs offer a convenient and cost-effective source of post-license education for professionals. Due to largely positive participant perceived outcomes, ease of participation, and participant appreciation of the benefits of e-learning (Griffin et al., 2009), home study CE methods may be increasingly chosen sources for practicing psychologists to meet state CE mandates. However, there is need for additional research on levels of learning as related to all CE delivery methods; doing so will indicate whether any current methodologies meet the expectation of VandeCreek et al.’s (1990) that “CE activities can enhance knowledge and skills of practitioners” within the field of psychology (p. 139). For example, there is a lack of research comparing clinician’s self reported knowledge gains and actual measured levels of learning. Within this study, however, we were able to compare self-reported knowledge of topic after the presentation to post test accuracy, in effort to predict

clinician's realistic depiction of acquired learning. The correlation between self reported knowledge to measured post test accuracy was 0.57, indicating that clinicians were moderately able to "ball park" their knowledge gains. Although this finding is somewhat reassuring in that it suggests psychologists within our study were not greatly overestimating their knowledge gain, it furthers the notion that self-report data does not suffice as the singular measure of learning.

Limitations

It is necessary to interpret the results of this study in light of its limitations and context. First, CE topics are broad and wide-ranging; results from differing topics in psychology may not produce the same findings as what was found in the present study. Thus, it is difficult to generalize the levels of learning within the present study to the wide range of CE programs completed by psychologists throughout the country. Second, despite the substantial number of potential participants targeted through the study's e-mail invitation, the total number of practitioners reached remains unknown. The survey was accessible through e-mail and thus subject to potential delivery to colleagues; this may have created a snowball effect of sorts. Another confounding variable regards the design of the written home study CE program. The CE programs did not prevent participants from using the CE programs while completing the post-tests. For example, a participant may have printed the text or had the text available during the post-test in the written condition. The ability to review printed text while completing a post-test is more viable than the option to replay an audio or an audio-visual file. Thus, the written format may have an unfair advantage allowing participants to more readily use the presentation information during the administration of the post-test. Psychologists within the written format were able to, in essence, complete this

post-test in an “open-book” format. This may influence why the findings for the written condition are significantly different than that of audio condition, or even why the results of the written condition were not significantly different than those from the audio-visual condition.

Another venue for improvement upon this study is the use of CE programs that are less time consuming, perhaps only 1 CE credit, with the demand for only one hour of participation. This might improve the response rate and generate a larger number of participants. Even more, the simple nature of our CE presentation being in a home study format limits some psychologists’ ability to receive CE credit, due the fact that in some states there are restrictions on the total number of credits that may be completed in home study format these. Furthermore, as this study did not assess long-term learning, future studies could include a subsequent administration of the post-test 6 months or 12 months following the initial completion of the post-test. This would clarify the duration of CE learning outcomes and better equip any decisions that may be made to improve CE. Finally, the inclusion of interactive components is an essential addition within the research upon CE learning outcomes, as some researchers suggest that interactive elements may significantly increase the translation of learning to practice (Khan & Coomarasamy, 2006).

Future Direction

Further studies are needed to expand upon the tentative findings in the present study. As this is one of the first studies to assess the levels of learning generated by CE presentations, there is significant room in the literature for the development of this research. The current study’s finding that there is a significant difference in post-test learning outcomes dependent upon CE program type, touches on VandeCreek et al.’s

(1990) demand that “all CE activities should include a method for objectively demonstrating that learning has occurred” (p.139). To date the majority of studies have provided self-report data regarding learning rather than objectively measured levels of learning. The relationship between these, however, remains unclear. For example, within our findings the correlation between perceived knowledge post presentation and post test accuracy strengthens the notion that self-reported knowledge gains may not suffice as the singular form of CE validation. This suggests that assessments may be significantly beneficial if added to CE programs in order to assure that counselors are able to quantitatively measure retained knowledge rather than qualitatively estimate attained knowledge.

Furthermore, it would be beneficial for these studies to expand upon the inclusion of the three home study CE programs included in this study. The inclusion of seminar or lecture styled CE presentations would further the potential comparison within the spectrum of CE opportunities for licensed psychologists. Next, further studies should eliminate the opportunity for psychologists to refer to the CE program materials (whether text, audio, or audio-visual formats) while completing the post-test. This effort would eliminate an important and potentially confounding variable within this study and lead to a more accurate depiction of learning outcomes for each CE presentation format.

The need for empirical evidence to demonstrate CE learning is growing in a time-sensitive atmosphere. As psychologists' domains continue to merge with the medical field, and as continuing medical education continues to value assessment and empirical evaluation (Daniels & Walter, 2002; Davis, et al., 1999; Jannett et al., 1988), the field of

professional psychology needs to embrace more stringent knowledge and skills-based outcome criteria, rather than “satisfaction rating” criteria that currently characterizes the field (Neimeyer, Taylor, & Wear, 2009).

As professional psychologists anticipate increased interaction with the medical field, there is an expectation for our field to meet certain standards of empirically validated CE. The field of continued medical education (CME) is supported by controlled experimental research, systematic literature reviews, theoretically-driven research programs, longitudinal research efforts, and meta-analyses of CME outcomes in relation to physician behavior, medical intervention, and ultimate healthcare outcomes (Bloom, 2005; Davis et al., 1999). Surprisingly, CE in psychology lacks controlled experimental research, systematic programs of research, theoretically-driven research programs, or longitudinal research efforts (Neimeyer, Taylor, & Wear, 2009). Psychology is significantly lagging behind the medical field’s demonstrations of learning outcomes associated with its CE programs.

In further efforts to respond to the medical field’s gains in CME, professional psychology would be well-served by incorporating interactive elements within its CE. Within medical literature Bloom (2005) concluded that interactive techniques are most effective at changing both physician care and patient outcomes. As the field of psychology seeks to evolve its CE programs, interactive elements may be readily incorporated into audio-visual home study CE. Elements such as short quizzes and short answer questions, can be integrated into these web-based CE programs. Such inclusion clearly follows the medical movement.

Studies like this one should continue in a comparative and expansive nature to measure CE outcomes. This will provide professionals the best CE programs, maximize outcomes for the time investment, and maintain cost-effectiveness while upholding ethical imperatives of professional competence. CE faces not only outside pressure to demonstrate its effectiveness, but also the APA ethics code demands that practicing psychologists are held accountable for their professional competencies. Thus, the field is internally driven to empirically validate learning outcomes, increased competencies, improved clinical services, and overall growth of the profession, as resulting from CE. As a profession it will become increasingly important to measure knowledge gained from CE and the ability of practitioners to apply educational information from CE programs to clinical practice. Otherwise, we may inadvertently condone sub-par education and competence of our professionals, miss the direction of CE as modeled by the medical field, and subsequently depreciate our value as a field.

Summary

According to Neimeyer et al. (2009), the growth of continuing education in professional psychology has been marked by substantial developmental delay. Differing definitions of CE that may include or exclude informal or incidental learning, serve as significant impediments to this development (Goodyear & Lichtenberg, 2008; Skovholt & Starkey, 2008). Although the lack of careful conceptualization (Neimeyer, Taylor, & Wear, 2009) may be partially responsible for the lack of consistency amongst CE mandates, the field is also in need of empirically supported CE programs upon which to place mandates. Systematic study of the processes that take place as a result of current CE methods are the next step in CE research. Neimeyer et al. (2009) define Evidence-based continuing education (EBCE) as “professional education that has an ongoing

commitment to evaluating educational practices and assessing educational outcomes in support of understanding, promoting, and demonstrating the effectiveness of continuing education in psychology.” Such empirical validation has been demonstrated and utilized within the medical field. If CE is to join the competency based movement and match those of the medical field, it will be necessary for professional education to undergo extensive evaluation, assessment, and provide demonstrations of its effectiveness.

APPENDIX A WRITTEN TRANSCRIPT OF CE PRESENTATION INFORMATION

Have you checked your email today? Have you had a chance to do any gaming or gambling? Have you surfed the web? Have you made any online purchases? Have you checked your MySpace or Facebook? Have you gone on eBay to check your bids yet? If so, you're part of the more than one-and-a-half billion people who access the Internet every day. I'm Dr. Greg Neimeyer, professor of psychology in the Department of Psychology at the University of Florida in Gainesville, Florida, and I'd like to talk with you a bit today about Internet addiction.

When we talk about Internet addiction, we're going to be covering a variety of topics that are related to the use, overuse, and problematic use of various forms of Internet activity. First, we'll talk about some Internet use generally, in particular calling attention to the digital divide, the divide between people who are born into a digital age versus those of us who were immigrated into the digital age. Secondly, we'll talk about problems and prevalence concerning Internet use and abuse. Third, we'll turn and look at some of the examples of problematic Internet use. And fourth, we'll look at the competing conceptualizations that are currently warring for dominance or preeminence in the world of diagnosis, as it concerns problematic Internet use. Fifth, we'll turn to look at specific forms of Internet abuse such as gaming, gambling, cyber sex, social networking, and so forth. Then we'll look at some of the correlates and comorbidities that accompany problematic Internet use. And finally, we'll address issues of diagnosis and treatment in problematic Internet use.

Well, let's go ahead and get started. First of all let's talk some about Internet use and abuse. It's important here to underscore the fact that Internet access is expanding geometrically or exponentially in the world at this time, and that the prevalence of Internet access naturally is going to carry with it an increased prevalence of problematic use of that Internet. So, if you'll consider that the first public web browser was made available in the market in 1994, here you can see the level of Internet increase, the increasing access of the Internet across just a short period of time.

Between 1994 and 2000 Internet access went from functionally zero to over 361 million people. The number of users increased, however, to over 1.6 billion people by the year 2008, again showing this dramatic increase in Internet utilization worldwide. Keep in mind that these are provisional data; these are early data. We only have a couple of decades of Internet use, and, the truth is, there is no clear indication that there is any plateau in sight. The line continues meteorically upward.

Another way to look at it is to consider the number of years that it took various forms of technology to reach a critical mass of say 50 million users. If we use that benchmark, 50 million users, and we apply it to how long it took radio to catch on and reach 50 million people, we find that it took a little over 36 years to achieve that many listeners. Television, by comparison, increased much more dramatically and reached the point of 50 million viewers in about 13 years. By comparison, the Internet only required about

four years to amass an audience of users that exceeded 50 million. In other words, this underscores what we all recognize, and that is there is a rapidly increasing absorption or assimilation of technology into our lives. Importantly, the absorption or assimilation of that technology is not uniform across various co-work groups. And this brings us to the issue of the digital divide, the important role that cohort factors play in Internet use and abuse.

The digital divide is between digital immigrants and digital natives. Digital natives are those people who were born into a digital world and those of us who are immigrants and were born into a pre- digital world and had to migrate, if you will, into the digital world that dominates today. As digital immigrants, we recognize that they still, like immigrants from one country to the next, oftentimes bear a kind of accent, an accent that is imported from their native pre-digital culture. This pre-digital accent is detectable to a greater or lesser extent in a wide variety of things.

A pre-digital immigrant, for example, sometimes has to print out something in order to read it, rather than simply reading it online. They may have to print a manuscript in order to edit it, or change it, or revise it, rather than doing that again, on screen. The accent of a pre-digital immigrant is also clear in the case of somebody who calls you to ask whether or not you have received their email or in somebody who simply has to read a manual regarding the software application instead of assuming that the program is sort of going to teach you as you go along. These are all thicker or thinner versions of a pre-digital immigrant's accent.

By comparison, there is the individual who really never knew a world without the Internet. They were born into a world in which there were always cell phones. For them to see an old '70s or early '80s show with one of the early bulky looking, club-looking sort of mobile phones brings an automatic guffaw to them. It just seems so hopelessly archaic. Digital natives are accustomed to immediacy, to interactivity, to random access, and to nonlinear learning.

By the time the digital native gets to college, he or she will have spent less than five thousand hours of reading textbooks or books but more than twice that amount of time online emailing, texting, and interacting with other people. It's important to recognize the gap between those in the digital age and digital immigrants because they each have frustrations in relation to the other.

Here's a cartoon. A number of digital immigrants are sitting around having tea. You can see the computer in the background, and the one woman is saying, "I read on the Internet to watch out for cookies and spam. I tell you, I can't keep up with these new fad diets." Well, this isn't just an indication of how rapidly the Internet changes, how rapidly technology changes, and how difficult it is. Oftentimes, particularly with digital immigrants to stay apace, to stay abreast, to stay on top and contemporary in their skills. And so they oftentimes find aspects of technology extraordinarily frustrating. Of course, for digital natives, they find digital immigrants frustrating.

Another cartoon depicted Red Riding Hood and the Big Bad Wolf, and Red Riding Hood was looking up with an exasperated look on her face to the Big Bad Wolf and saying, "I'm going to grandma's house to show her how to check her email again for the ten-millionth time. If you don't bite her, I will!" And again, this just illustrates the frustration that a digital native can have in relation to what he or she may regard as quite simple applications in relation to digital immigrants, who struggle with technology.

I'm underscoring this because when we talk about Internet use and abuse, it's important to keep in mind that what a digital immigrant might regard as Internet abuse or problematic Internet use may, from the perspective of a digital native, seem completely unproblematic. And so it's important to keep in mind that we're in an incipient stage between a fully digital world and a predigital world, and, in that way, we don't often, all of us speak precisely the same language because, in truth, we're coming from different worlds.

Let me say something about problems and prevalence when it comes to Internet use and abuse. Because the truth of the matter is, it's extraordinarily difficult to be able to fix on clear, specific, straight--forward prevalence figures when it comes to identifying how common problematic Internet use actually is. Here are a variety of different estimates of Internet addiction rates from a number of different authors and researchers. Let me just say a word about each of these. Kimberly Young estimated that as many as 80 percent of Internet users are Internet addicts. This work, done nearly well over a decade ago, is oftentimes cited as a benchmark statistic, not because of its accuracy but because of its fallacies.

Basically, Young's work of estimated prevalence really suffers from a significant methodological problem. Her survey was administered online, so her prevalence rate, 80 percent of people addicted, naturally pulled from people who were online, and people who were online most commonly. So, if you're going to do an online survey, your prevalence rates are probably going to be higher for Internet addiction because it's going to get the people who are online all the time, as opposed to the people who are on there occasionally or are not Internet users at all.

Other studies have, in a way, corrected for some of the methodological problems of Internet surveys and provide much more conservative estimates of Internet addiction rates. Colleagues estimated a problematic Internet use rate in somewhere between 20 and 30 percent of active Internet users. That's broadly consistent with what was found when Bai et al. reported problematic Internet use among about 15 percent of Internet users in their study. More conservative estimates by far follow from more stringent criteria. It makes sense that the more specific and stringent your criteria are for including somebody into the category of a problematic Internet user or Internet addict, the more conservative and smaller your prevalence rates will be. Mitchel et al. really typify that when they estimated that three percent of the overall population probably suffers from problematic Internet use that might be described or regarded as addictive behavior.

We don't know really what the Internet addiction rate might be, but we might use, just as a provisional figure, something like 10 percent of the overall population of Internet users who show signs of problematic Internet use, however, we wind up conceptualizing that. Now, it might be five percent greater than that, it might be five percent lower than that. It's certainly going to vary according to the specific criteria that are used in order to categorize problematic Internet use. Again, more liberal criteria are going to inflate that prevalence rate. More conservative criteria are going to reduce that rate. But one thing that everyone can agree with is that problematic Internet use is probably on the increase.

That figure, about 10 percent or 15 percent of the overall population, is consistent with the recent declaration from the Korean government that among its adolescent population, roughly 10 to 15 percent are regarded as Internet addicts. Likely, those figures are pretty reasonable kind of prevalence rates across the world. Korea is by far the most wired country but it also is the case that because so much of their Internet behavior occurs in relation to what they call Internet bombs, which are essentially Internet cafes largely for adolescents, where they get together socially and game and surf and, you know, utilize the Internet and hang out together. Internet behavior tends to be much more public in the Korean culture. Because it's more public, it is more readily studied. So, some of the most reliable, some of the most valid data coming out about Internet use and abuse currently is from Korea. And again, there, the government is acknowledging that probably 10 to 15 percent of the population of their adolescents qualify for Internet addiction.

Regardless of what the prevalence rate may be, virtually everyone agrees that it's probably going up. It's probably going up for at least two reasons. Number one, the digital immigrant group, people born pre- 1980s, basically are fading out and there's an ascendancy of people, younger individuals who are digital natives who have cut their eye teeth from the Internet, who are moving up to assume a greater and greater percentage of the overall population. They bring with them that Internet access, that Internet savvy, and that Internet utilization. And secondly, frankly, the Internet is just a lot more friendly and does a lot more.

It's much more powerful as a tool now than it was certainly 5 or 10, let alone 15 years ago. So, as it gains popularity, as it gains functionality, power and capability, it also becomes increasingly attractive. If you think about the kinds of things that you may do on the Internet now that you didn't do 5 years ago or 10 years ago, you'll recognize the dramatic increase in the potency and the navigability and accessibility and functionality of the Internet across time. Probably that's going to indicate increases in utilization, and probably with that will be increases in problematic Internet use behavior.

Well, just to underscore, it's difficult to determine specific prevalence rates with problematic Internet use for a variety of reasons. Number one, there are the methodological issues that we alluded to. We really don't have good, hard, controlled study data. We don't have good longitudinal data. We really don't have good criteria that allow us to determine, even if we had strong methodological approaches, what those

prevalence rates might be. Because we lack specific uniform agreed-upon universal definitions and criteria for determining or diagnosing problematic Internet use, it means that we're going to have a continuation of wildly variable prevalence rates or estimates out there in the literature.

So, there are the methodological issues, there are criteriological, definitional issues, and also it is also the case that Internet use and abuse is a moving target. As I mentioned just a moment ago, more and more and more people are increasingly accessing the Internet, and so prevalence rates are naturally going to change as a function of Internet activity rates.

And finally there's the issue of the uniformity myth. "Internet addiction" would seem to connote a single disorder. But the truth of the matter is that people may be addicted to a wide variety of things on the Internet. They may have a cybersex or an online porn addiction, or they may have an auction-house addiction, or they may have an addiction to online gaming, or gambling, or social networking.

So, there's really little reason to believe that the prevalence rates of all those different types of Internet use would be exactly the same. More likely, the Internet represents the sort of loosely federated conglomeration of potential forms of abusive behavior or addiction, and of course those forms of potential abuse or addiction vary as a function of what's on the Internet, and what's available to be used or abused. So those are going to change.

Furthermore, it's difficult at this time to actually fix a reliable prevalence rate for Internet addiction or abuse because of the methodological issues, the criteriological and definitional issues, the fact that it's a moving target, and that fact that it's not a single, uniform entity.

So, let's turn to talk about a few examples of Internet abuse. What exactly are we referring to when we talk about somebody who is Internet- addicted or is engaging in problematic Internet use? As with any other disorder, it can run a very, very wide gamut, from a kind of pattern of use or abuse that is so problematic that it results in substantial impairment to social, occupational, emotional, and interpersonal functioning, to simply the kinds of behavior that might qualify as compromising the quality of life.

Let me give you some specific examples. The instance of a 21-year-old male who began using the Internet as a 19-year-old college freshman just two years earlier. He started not attending classes due to his Internet use, and he failed out of college. When his parents and roommates hadn't heard from him in almost a week, the campus police went searching for him and found him in the computer lab, where he'd spent several straight days and nights online. He was eventually evicted from his parents' house when he tried to steal the key to the parents' computer room.

Another, a net-surfing mom who was charged with ignoring her kids. The mother of three was arrested on child neglect charges for allegedly leaving her children to take

care of themselves while she surfed the Internet. Sandra Hacker, 24, was charged after her estranged husband told police that she was spending up to 12 hours a day at her computer, while keeping her children, aged five, three, and two locked in a playroom in her apartment. Police said that they found the room littered with debris, including broken glass, and that human feces were on the wall.

The Cincinnati Enquirer quoted David Greenfield, a psychologist from Hartford, Connecticut, as saying that the case had all the earmarks of Internet addiction disorder. Again, this is an egregious example, this is a florid example, of how the Internet use or overuse can result in very substantial kind of impairment.

Another example, a 41-year-old woman who began using the Internet six years earlier when she worked for a major corporation. She lost her job because she was spending an hour a day doing her duties and seven hours a day online.

A 24-year-old female dropped out of college due excessive e-mail Internet use. She also married an individual who she met online; the marriage lasted only a few months. Again, these are all anecdotal, case-based instances of particular individuals who have suffered a variety of consequences--occupational, interpersonal, social, and so forth--as a function of their over utilization of the Internet.

Well, let's turn to look at the competing conceptualizations regarding Internet use and abuse. And here we'll talk about the war of the words. The truth of the matter is that because there is no single agreed-upon definition of Internet addiction or problematic Internet use, there really is no single term.

So, in the literature you'll find a wide variety of different terms used to refer to essentially the same thing. These include things like technology addiction, Internet addiction, net addiction, Internet dependency, pathological Internet use, Internetomania, compulsive Internet use disorder, problematic Internet behavior, problematic Internet use, and a wide variety of other terms.

Now keep in mind that the core of these really borrow from an addictions model. When we hear the terms of "technology addiction, Internet addiction, net addiction, Internet dependency," these all betray an allegiance to a substance use or abuse model or conceptualization.

By comparison, some "Internet addiction" labels really borrow much more from a conceptualization of a compulsive disorder, an individual compulsive disorder. Pathological Internet use, Internetomania, and compulsive Internet use or compulsive Internet disorder, all have that kind of "impulse control disorder" quality to them, not so much addiction model as an impulse control disorder model.

And finally the last two, problematic Internet use and problematic Internet behavior are both more neutral forms of jargon. They are much more or less wedded to an addiction model on the one hand, or a compulsive disorder model on the other. But the two

primary conceptualizations can be understood as an addiction model on the one hand, or a compulsive disorder on the other.

It's important to keep in mind that description invites prescription. When we use terms like Internet addiction, we are naturally inviting all of the paraphernalia that accompanies substance use and abuse, addictive disorders. We tend to think, for example, in terms of a 12-step model. We tend to think about surrendering to a higher authority. We tend to think in an addictions model when we talk about Internet addiction.

On the other hand, when we think about and use the terms like "compulsive Internet disorder," we tend to think in terms of compulsive disorders, like gambling, instead of addictive disorders like substance use or abuse. And that naturally carries implications for the kinds of treatment that are suggested. We think more in terms of contingency management, we think more in terms of behavioral forms of therapy. So, I only want to call attention to the fact that description invites prescription, and the truth of the matter is that we are in a preconceptual period when it comes to Internet addiction or problematic Internet use at this time. We really don't know what model best defines that set of behaviors, and in fact the disorder does not literally yet exist in the DSM.

Surely it will be the subject of considerable discussion, deliberation, decision-making, and debate. But as it currently stands, Internet addiction is most likely to be included in one of the NOS categories, "not otherwise specified," that is, an addictive disorder not otherwise specified or an impulse control disorder not otherwise specified. And we'll talk more about that.

For that reason, because I think we're in a preconceptual mode at this time, I'm going to try to emphasize the use of the term "problematic Internet use" over those that are dedicated more exclusively to the impulse control model on the one hand, or to an addictive model on the other.

I keep in mind that each of those models highlights features that are worthy of consideration. So, it's not the case that either of them is wholly right or wholly wrong, but they do turn different facets of the problematic Internet behavior up into the light to be seen. In the addiction model for example, the primary model that it's drawn from really was early gambling. And of course that got translated into "online gambling."

But the model here is one where they liken Internet use to basically drug addiction. Researchers talk in this model for example about the presence of euphoria, about the capacity of the Internet behavior to generate positive mood states. They talk about the tolerance where you need more and more online behavior in order to be able to reach that same level of satisfaction or euphoria. They talk about withdrawal, forms of anxiety and nervousness and cognitive ordination that accompany removal from or lack of access to the Internet. And then they talk about relapse: trying to stay off the Internet but being unable to and finding themselves sucked back in.

So, the model fits pretty seamlessly with at least some forms of problematic Internet use. Critical to the addiction model are aspects of salience, mood modification, tolerance, loss of control, withdrawal symptoms, conflict, and relapse, just as we've alluded to. And in the literature you'll find all those terms used in relation to problematic Internet use.

Importantly, some research suggests that there are specific physiological needs and desires that can be met through a wide variety of features that are common part and parcel of Internet use. For example, in online gaming or gambling, the use of lights and color and sound effects are all extremely reinforcing. It also is the case that online gambling and gaming have payout intervals that are remarkably seductive and attractive.

When you are in a table in Las Vegas, where you're at a casino at a given blackjack table or craps table, part of your behavior is controlled by the social environment, by the person who is spinning the wheel or dealing the deck of cards. But when you're online, you can move pretty much as quickly as you want to. The payout intervals can be enhanced, and so, in a sense, the addictive quality is also increased. You control the event frequency, in a sense.

The bottom line here is that many aspects of some forms of online problematic use really do wind up providing sort of physiological and cognitive emotional, mental or psychological stimulation. There is some research that suggests, for example, that there is a kind of physiological addiction associated with the release of dopamine in the brain. And some studies to suggest that (at least in the context of online gambling) there is an enhanced expression of dopamine as a function of the immersion or submersion into the online gambling environment, at least for individuals who are addicted to online gambling. So, again, the addiction model can be understood in some ways as a sensible application to problematic Internet use.

But the compulsive disorder model is also a reasonable way to conceptualize the disorders. Most commonly here, the name that is bandied about is "pathological Internet use," and it may well be that that winds up being one of the designations that are considered for the DSM-V.

Shapiro, for example, in 2003 indicated that problematic Internet use might best be classified as an impulse control disorder. He and his colleagues have conducted a series of studies and have developed some diagnostic criteria that we'll look at that really do sort of scaffold problematic Internet use around the criteria that will be utilized for impulse control disorders. And we'll see the comorbidity between impulse control disorders and problematic Internet use, and we'll see that that comorbidity strongly supports the conceptualization of Shapiro and his colleagues.

Importantly, as Griffiths pointed out in 2004, the frequency and types of Internet behavior really don't indicate an addiction per se. The critical thing to keep in mind is

that it's really the loss of control and the negative consequences from the compulsive Internet behavior that indicate addiction.

This is particularly critical because again, with the digital divide, those of us who are immigrants can look at the digital natives and see that they're spending three, or five, or seven hours online per day, may be regarded as problematic. But if they have not lost control, if the Internet is not controlling them, if they have not suffered significant impairment, socially, occupationally, recreationally and so forth, it may be that it's not chronic Internet abuse but that it simply is a cultural difference between what we're accustomed to and the world in which they were born into.

Let me emphasize though that a part of these two predominant conceptualizations, addiction on the one hand and compulsion on the other, there are alternative conceptualizations. And let me just share one with you right here. This is Grohol's Model of Pathological Internet Use. And essentially what Grohol argues is that Internet use can be understood as phasic; it's a phasic disorder. And what he means by that is that it is not a static thing, nor is it something that people necessarily grow into and remain in, in any kind of stable or static way. Instead it may well be that the vast majority of "pathological Internet users" move not only into but move through and out of.

Particularly, Grohol calls attention to a new online user. And what he argues, particularly for the new online user, who begins to engage in new online activity, whether that's a chat room or social networking site or gaming or gambling, or auction house or whatever, that activity is new, that activity is stimulating, that activity engages in a kind of enhancement that is it's highly attractive, it's highly novel, and it's highly reinforcing. And so in stage one, an individual can develop almost an obsessional quality with it. One way to think about it is to imagine you get a new CD of a favorite artist. And you go through that CD and you listen to it and you love it and you play it again and again and you find the four or five songs that you really like and you play them again and again and again and again and again. You play them repeatedly; you play them until you wear them out. You are in a sense enhanced by those; you are in a sense obsessed with those. But importantly, you move into stage two.

Stage two is when they kind of wear out their welcome. You've heard them forty-two times, the forty-third time isn't quite as reinforcing and eventually you experience a kind of disillusionment. That is they lose their magic, they've exhausted their novelty. And you gradually move to stage three where there's a kind of balance that's restored. Yes, you still play that album and you still play those songs, but you mix them in with other albums and other songs. In other words, they've relinquished their obsessional sort of hold on you. Now importantly what Grohol argues is that there are two critical features here. One is that because we don't have much longitudinal research on Internet addiction, it's very difficult to know currently, how many people get stuck in stage one and stay there versus how many are in the midst of stage one but in a few months or years will move through it and out of it into a more balanced stage.

Secondly, however, it also calls attention to the fact, and Grohol is clear about this, that unlike the new album that you buy from your favorite artist or the favorite hit that you are listening to all the time, the Internet is not a single thing, it's huge, and it is the worldwide web. For that reason, it is virtually inexhaustible in relation to what it has to offer. So, unlike your album, unlike your song, it's much more difficult for the Internet to wear out its welcome, it's much more difficult for the novelty to wear off because of how remarkably immense and ever changing and ever evolving it is.

So, Grohol has no doubt that there are some people who get stuck in that stage one obsession or enhancement simply because it's impossible to ever fully exhaust the web. There's a very famous, very familiar instance in gaming where there are any game on multiple different levels, and the goal is to get to the final level and beat the game. But of course the game programmers, developers, specifically designed it so that it is not easy to conquer so you get stuck into that continuously reinforcing, never quite attaining or achieving satisfaction kind of mode. In other words, there's a lot about the Internet that's designed to hold you in, to retain you within that stage one obsessional phase.

Regardless of the conceptualization, whether it's an addiction model, a compulsive model or an enhancement or phasic model, there are common factors across various conceptualizations that call attention to the features of the Internet that are pretty addictive. There are some basic addictive qualities and those include things like the false sense of security and control. The Internet is oftentimes described as a lean forward environment. By lean forward it means that unlike the TV which is a passive environment, you sit and you watch a TV program, the only activity if at all is to simply flip the channels, beyond that you are a passive recipient of what it offers. But the Internet really doesn't do anything unless you do something to it. You have to, most commonly, click and that click gives you the illusion of control. You must lean forward in order for it to do something back and so it gives you this sense of you controlling it rather than it controlling you.

There's also this feeling of global boundlessness, that is, you can go anywhere and do anything, so it invites our sense of almost omnipotence and of course many things in the Internet world specifically cultivate precisely that feeling, go anywhere, do anything, and be all you can be, everything in the world is right here at your fingertips. And of course it also is disinhibiting. Many of the features that would inhibit behavior whether it's sexual behavior or gaming or gambling behavior, or even conversational behavior in a real life face-to-face environment are absent within an online environment. So, there's this sort of double-edged sword around the anonymity of your existence and within the Internet environment.

A couple of particular models highlight those features. Cooper, for example, has an ACE model where he describes the attractive or salient features of the Internet, addictive qualities as being its anonymity on the one hand, its convenience on the other, and its capacity to allow the person to escape on the third. Young's model is pretty similar to that, also an ACE model, where she emphasizes accessibility, control, and

excitement. Let me pause because this is a popular model and say a few things about it.

Before the Internet, when it comes to accessibility, gambling trips, for example, were trips to Las Vegas or to some local convenience store in order to buy Lotto tickets or to church Bingo on Friday night. Some people, of course, did know how to go and do these things, but a lot of people didn't--shopping, going and fighting the crowds in the malls, or spending hours searching for specific items at specific stores, traveling from place to place. But of course now, all of that's available right online: virtual gaming sites, virtual shopping sites and so forth. All of that is accessible not only to you in the privacy of your room at this moment, but it's available to you 24/7. Those stores don't close. So, the accessibility of the Internet is a gigantic attractive feature that allows it to become strongly appealing and eventually, addictive.

The second component of Young's model is control. Control literally refers to the personal control that one can exercise in relation to the online activities. This is particularly true in respect to things that traditionally required us relinquishing our control. It used to be that if you wanted to trade stocks, you had to go to a stockbroker and he or she would advise you and maybe even literally buy the stocks or sell the stocks for you. But now of course, you just go online and you can e-trade daily, or weekly, or hourly, if you prefer. That is, you can exercise control. It wasn't that long ago that the vast majority of people had to call up a travel agent in order to book their flights. The travel agents' business has been transformed dramatically, with the booking of online bookings, and now most people, many people, wind up booking their own flights and exercising control in relation to doing that. And so it goes in relation to so many different media and so many different functions that now can be exercised, the control can be exercised by the purchaser, by the participant online rather than relinquishing that to a third party.

Excitement of course represents the emotional rush or high that's associated with many aspects of online behavior. Gambling, obviously, when you win the bet, that's an emotional thrill. When you are doing an online auction house like eBay and you "win", which means you purchased the product, oftentimes people experience a sense of satisfaction. And so it goes. Many features, that is, again, the sites, the sounds, the images are designed to be reinforcing and appealing in the online transactions and so there is a kind of excitement and reinforcement quality that attends typically the mouse clicks. So, Young's model like Cooper's model emphasizes certain features as being sort of inherently attractive, appealing, and potentially addictive.

Let's talk about some of those particular types of Internet, problematic Internet use, because the aspects of addiction vary across the particular form of Internet behavior. Here we'll talk just a little bit about online gaming, online gambling, cyber-sex, online relationships, online social networking, then online shopping and auction houses and a variety of other potentially problematic nonspecific forms of Internet use or abuse.

Turn first to look at online gaming. Many people regard online gaming as the purist form of problematic Internet use. In 2005, more than 230,000,000 computer games were sold. It's been estimated that about 40 percent of Americans play computer games either through their T.V. sets or online or on their computers. And a Harris interactive poll has recently indicated that an estimated eight-and-a-half percent of youth gamers are probably addicted or show signs of problematic gaming use. A good example of some of the work that's been done in relation to the addiction and problematic Internet use within the gaming community was a study that was conducted recently on the World of Warcraft. Let me pause and tell you a little bit about the World of Warcraft study, because it's quite interesting.

World of Warcraft is obviously a game, is extremely popular, sold many, many millions of copies, and it's played interactively online and is a strongly attractive and addictive game. In this particular study what the researchers did is they found and identified two sets of individuals; they identified 10 individuals who were "World of Warcraft addicts", they spent twenty hours or more per week playing World of Warcraft, and they'd been doing so for at least half a year. They identified the other 10 who were familiar with the game, but were not addicted to it. And in order to do this, they developed, just static screen shots of these, of various game configurations in World of Warcraft, and they showed them up on a screen for these people to look at while they were engaged in assessing them through fMRI, functional magnetic resonance imagery.

So, they're basically looking at the hypermetabolic activity of particular brain regions as a function of the addicts and nonaddicts being exposed to screen shots of World of Warcraft. And interestingly, what they found is pretty much what you might expect, and that is that for the individuals that are World of Warcraft addicts, their brains generally did considerably more hypermetabolic activity. Interestingly, they exhibited many of the same symptoms neurologically speaking as drug addicts do who are looking to score their next dose, many of the same regions of the brain lit up, for example, when they were shown pictures of the World of Warcraft screens. Sections for example such as the right orbital frontal cortex, the right lethalis cubans, the bilateral interior singular and the medial frontal cortex were all considerably more activated in the World of Warcraft addicts than in the case of the non-addicts who were exposed to the identical screen shots.

So, this is an example of some recent work that's beginning from an addiction model to look at the impact at a biological or biochemical level of problematic Internet use. In this case, looking into gaming, and it's showing some interesting and promising findings.

It's consistently been the case that online gaming is more prevalent among men than women. Men are about twice as likely as women to engage in online gaming and when you ask individuals who do surveys about their feelings of addiction, men report about three times the prevalence rates of gaming addiction that women do. They're twice as likely to game but they're three times more likely to report they're addicted. I put here the Stanford study because I wanted to just mention to you a recent study that was

conducted, looking at these differences between men and women and trying to account why it is that men are more attracted to gaming than women.

In the Stanford study, essentially what they did was they constructed their own game. They constructed a game in which there was a bold, black vertical line down the center of the computer screen, and there were a bunch of dots over on the left hand side. And the idea was that those dots would gradually move toward that bold center line. And every time they touched the bold center line, then the line would move further to the right and more space would be eroded, more space would be given to the avalanche or charge of dots.

The gamer's role was basically to destroy the dots before they touched that line. The goal was to shoot them, like a first person shooter game, and to knock them out before they touched the line. And every time that they killed a dot and prevented it from touching the line, the line would move over to the left and give them more clear space or free space.

So, in a sense it was a war between the gamer, who wanted to clear this screen completely, and the dots that wanted to occupy the entire territory. Well, interestingly what they found as they engaged in this study is predictable sex differences.

They found that men and women were equally capable of completing the game and winning the game or making similar kinds of gains in relation to it, but that the brain activity of men was much more hyper metabolic than in the case of women. And there was a direct relationship between the capacity of the men to succeed in the level of hyper metabolic activity in their brains.

Now, I'm mentioning this because it's really quite interesting. On the one hand it is, again, a study that is trying to look at the sort of biological substrate of Internet addictive behavior and in this case, explaining sex differences in that regard. There were dramatic sex differences in the hyper metabolic activity level in men and women's brains.

But there also was an interesting inferential leap, because now we're at the psychobiological level, and the researchers make a pretty dramatic interpretive departure here. Basically their argument is, in concluding their study, that because men are evolutionarily predisposed and preconditioned to be the sort of warriors, that is, to stake claim to territory, to invade new terrain, to conquer and to engage in conquest, territorial conquest, that in a sense there is an evolutionary preparedness or predisposition to find that appealing or attractive or addictive. And so their argument is that the sex differences are in some way, shape, or form due to evolutionary differences in the development of the species.

Well, again, that's a dramatic inferential leap that really doesn't owe very clear allegiance to the psychobiological data itself. Are the data consistent with that? Yes, they could be regarded as consistent with that. On the other hand, they might be

consistent with many, many, many other alternative explanations. So, I highlight that simply to highlight and underscore the fact that this is the level that we're at in the field. We're accumulating data, but we're really trying to figure out ways to make sense of those data at the same time.

When it comes to gambling, Internet gambling, of course is a lot like gaming except there are very clear, oftentimes financial rewards. Internet gambling has grown tenfold since 1975. It's increasing at least geometrically. The truth is that Internet gambling has doubled every single year since the year 1997. It's currently a \$2 billion plus per year industry. Importantly, the suicide rate for gamblers is 20 times that of non-gamblers. One in five gamblers attempt suicide. Internet gambling is a very significant, very serious problem. And like so many other areas of Internet use, it's increasing across time.

Technology, of course, amplifies the appeal of online gambling. Even as little as 10 or certainly 15 years ago the technology that was used for online gambling would seem almost hopelessly naive and quaint. But now things can be depicted not only very, very, very realistically--the dice, the cards, the roulette wheel--but actually even in some ways a more colorful, more appealing, and more attractive way than the real life versions.

So, in many regards, one can make the case that online gambling is even more addictive than traditional gambling, for a wide variety of reasons. Again, one of them has to do with the situational and structural characteristics. If you're hanging out at the roulette wheel or at the blackjack table for an hour or two hours or three hours or five hours, then people are going to take note. And as you lose more and more and more, people are going to raise their eyebrows. And those same kind of social cues are inhibiting in some ways your performance. But of course, you have none of that online. Nobody sees you, and you see nobody.

Accessibility. Casinos are in certain places, and although some of them are open all the time, 24/7, some are not, but you have to get to them. All you have to do for online gambling is get to your computer. Again, the asocial nature of online means that a number of the social cues are absent in an online environment that would tell you it was basically time to give it up, time to go home, time to quit, enough is enough, as a friend or spouse might do after you had lost X number of dollars, some hundreds, some thousands, some tens of thousands. Somebody is likely to tap you on the shoulder and say, time to call it quits. It's probably not your day. But that doesn't happen in an online environment.

Again there's the illusion of feelings of control, anonymity, safety, and security. There is the old Native American expression about alcohol that says that first the man takes a drink, then the drink takes a drink, and finally, the drink takes the man. And the same thing can be said in relation to online gambling. The individual first starts gambling and then the gambling's gambling, and pretty soon the gambling is taking over the person.

The visual stimulation is obviously a strong element of appeal. Of course going with that is all the auditory bells and whistles, buzzers, and shuffling sounds, rolling sounds--all of these things that are extremely exciting and again under your control. You roll the dice when you want to. You deal the cards when you want to. You spin the wheel when you want to, and so forth. And because you control it, your payoff frequency, not necessarily the ratio, but the frequency increases correspondingly. So, all of this gives you tremendous sense of appeal and potential addiction.

Let's turn to say something about cybersex. Cybersex is a gigantic area on the Internet. It's a field of research in its own right. There are currently over 1.3 million porno sites, over 260 million pornographic pages on the Internet. Schwartz and Southern in 2000 did a study of online cybersex addicts, and what they found is that 68 percent of them had prior sexual abuse records. This was true both of the male but particularly in the female population. And importantly, they found that men very commonly had sexual addiction disorders.

This, of course, highlights one of the central concerns around problematic Internet use or online addiction generally. And that is, how much of it is an addiction to the Internet per se versus how much is the Internet a vehicle for the expression of a preexisting condition? What Schwartz and Southern found is that many cybersex addicts, male cybersex addicts, actually had much broader sexual addictions that were simply being expressed through the Internet, given its anonymity, its accessibility, its affordability, its convenience, and so forth.

Orzack and Ross in 2000 provided an interesting kind of analysis. They compared cybersex addiction to other kinds of addictions and they concluded that it's probably best to consider cybersex and problematic Internet use more broadly, as more consistent with something like eating disorders than substance abuse.

The notion is that the exposure to the Internet (more broadly) and to sexuality (more particularly) is really an essential part of life. That unlike chemical use or abuse, it's not something you can avoid. It's much more like an eating disorder where you can't not eat. You can choose to not take meth. You can choose to not freebase or snort coke or take heroin. That is, chemicals can be excised or expunged from your life. But things like eating or things like sexuality probably can't be avoided. And so they tend to think of problematic Internet use and cybersex addiction as more of an impulse control disorder than as a substance use or abuse disorder per se.

Cooper and his colleges in 2000 described what they call cybersex compulsives. They identified a group of cybersex compulsive individuals who spent at least 11 hours or more per week recreationally on the Internet. And interestingly, they found that the vast majority of them, 79 percent, really reported no adverse consequences of their online activity.

This, however, in contrast to the 2003 American Academy of Matrimonial Lawyers in which two-thirds of the attorneys present at that conference indicated that over half of

their divorce cases involved some aspect of cybersex or Internet abuse. Interestingly, they indicated that as little as 10 years ago, that was completely unheard of. There were no instances of divorces being caused or precipitated by online use or abuse. But now, two-thirds of them are indicating that a substantial percentage of their cases involved instances of online pornography or cybersex addiction.

Let's turn to talk a little bit about cybersex relationships more broadly. Here's a cartoon where a guy is saying, "Brian, this is Mrs. Smithers. From now on she'll be chaperoning you when you surf the net." And you can see how unhappy he is about that.

Well, the truth of the matter is that we all are aware of online relationships as being potentially problematic. There have been a number of instances of predation. And of course law enforcement is seeking online predators who are basically cultivating relationships, particularly with children, to be able to develop pedophilic relationships with them. So, online relationships can certainly be serious and problematic.

On the other hand, they don't necessarily need to be either serious or problematic. They run the full range or full gamut. There are some features about online relationships that make them particularly susceptible to predation. But by no means do they own any kind of exclusive rights to that sort.

Young et al. in the year 2000, in talking about online relationships, indicated that people with low self-esteem, distorted body image, untreated sexual dysfunction, or prior sexual addiction were particularly prone to fall into cyber relationships. Well, this just makes some sense. And more recent work seems to suggest some of the same thing. That is, there aren't the same kinds of pressures. There aren't the same kinds of demands in an online relationship that there are in face-to-face relationships.

People who become involved in online relationships oftentimes talk about satisfying curiosity. There is literature that suggests that they can be at risk for predation. And, of course, there are some numbers of people who are sexually compulsive, and they satisfy sexual compulsivity through Internet relationships. Again, this is oftentimes a double-edged sword.

In online relationships in which there is mutual sexuality, there is shared masturbation, it is the case that people engaging in these online sexual relationships will talk quite openly about the fact that I don't have to worry about who I'm waking up in the morning with. I don't have to talk to this person if I don't want to. I enjoy the safety of my anonymity. I enjoy being able to not be myself, to pretend to be somebody else. I can be disinhibited. As a woman, I don't have to fear all of the social approbation that accompanies my expressions of sexuality. I can do things that I wouldn't do in real life. And, of course, I don't have to fear sexually transmitted diseases and a wide variety of other things.

The types of relationships online of course vary dramatically. Some are strictly online, and they're very short lived. They could be sort of online flings, if you will, casual affairs.

Some develop into longer-term personal relationships. And then some mature into ongoing relationships in which people actually do manage, sometimes, to actually meet. It is the case, perhaps surprisingly that there are statistical indications that two out of every ten people who get married nowadays first met online. So, it is now the case that online relationships have entered a significant and substantial percentage of the relationships that ultimately eventually in marriage. We don't have good longitudinal data to indicate the success of those marriages. We don't have any strong reason to believe that they are even more or less likely to succeed. There's some evidence in favor of each and relationships that are formed face to face. So, we have some prevailing conceptualizations and prejudices in that regard, but the data really are still indeterminate.

There are significant differences in terms of males and females in relation to their online relationships. Here is a cartoon, and one dog is looking at the computer screen, he's looking down at his friend, another dog. And he's saying, "On the Internet, nobody knows you're a dog." And of course, that's the way it is. One of the strong appeals of Internet relationships is that it doesn't matter what you look like. You don't have to worry about being judged, you don't have to worry about being assessed, and you don't have to be worried about being evaluated. You don't even have to dress up. You don't have to wear makeup. You don't have to wear good clothes. You don't have to worry about any of that stuff.

For women, it is the case that this is a strong appeal, so they find that physical appearance is no longer important, in the same way. And of course, as I mentioned before, it releases them from the social stigmas associated with sexuality. It permits them to have uninhibited exploration. So, they can have two or three affairs a night, if they choose to, and they can engage in behaviors that they would never feel comfortable doing in person.

For men, it oftentimes is the case that they prefer an online relationship in that it removes any performance anxiety, keeps them out of that sort of spectator event where they're evaluating their performance, wondering whether they're judged favorably or unfavorably, wondering whether they're being satisfying or not satisfying. And of course, it also, for men, reduces the importance of physical appearance and takes that pressure off of them. And oftentimes, it goes hand in hand for men with the use of online pornography.

I should mention too with online relationships and online sexual relationships that the industry of online sexuality has evolved to such a point now that you actually can get various devices like vibrators and dildos that can attach to a USB port and allow you to control one another's pleasure. So, for example, in a distant part of the country or the world a female could have a vibrating dildo attached to her computer and the other online individual would be able to control that device, and would be able to pleasure the female across the miles. So, the industry is reaching new heights, if you will, in relation to its abilities and capabilities. Things are evolving rapidly in relation to all things technology-related.

Let me turn to say something about social networking online because this is a dramatically growing area. What is online social networking? Well, Boyd and Ellison define it as the public or semipublic profiling of an individual who articulates a list of other users, typically friends, that they're connected to, and then they have a chance to view all of their friends networking through their list of connections, and the lists of other people's connections. And two particularly big ones in this regard are MySpace and Facebook; these are very, very, very prominent social networking sites.

They're by no means the first; Facebook is the one that most people are probably familiar with. Actually, it had a predecessor as well. Friendster, in a sense, actually existed before its time. Enough people were not permanently online to sustain the networking of the earliest social networking sites. By the time they came to Friendster, Friendster basically could not absorb or could not assimilate the dramatically burgeoning traffic that it was freighted with, so it more or less imploded. But it very quickly was replaced by MySpace and Facebook.

Currently, it's the case that MySpace is probably the single most common among people in high school. Facebook unquestionably is the most common social networking site among individuals in college. Facebook was started by a Harvard student, and it was basically taken from the concept at Harvard University of the paper Facebook that were designed to introduce people to one another, freshmen as they were coming into Harvard. So, Facebook is the digital expression of that. And it is now, incredibly, the fourth most popular website on the Internet. Ninety-four percent of undergraduates in national samples indicate that they have Facebook accounts. It is extremely common.

Now let's look at a piece of work that Andrea Burlick and I did. We looked at online social networking, and we were looking specifically for instances of online social networking abuse. Again, prevalence rates were very difficult to come by. We did a sample of 367 undergraduates, and we adapted a general problematic so-called Internet use inventory to the purposes of assessing problematic social networking site use. And we found that about 10 percent of the overall sample scored, on average, above the mean of the instruments items.

The instruments items included things like, "Have you ever tried to cut down on your typical use of social networking sites?" One would be never, five would be frequently. So, these would be people who would be answering on average of four or more. And again, about 10 percent of the sample indicated that was the case, and we found a variety of relationships between negative feelings and life satisfaction and depression and anxiety, and when examining the use of social networking sites, pretty much like the other literature, we find lots of inverse relationships between satisfaction and online social networking use.

Shopping, of course, is another of the major uses of the Internet, and of the most popular sits are those of the auction houses. EBay is the single most common and best known of those. And, of course, the goal of online auction houses is to get you to

purchase a wide variety of stuff that you may never have even imagined existed, much less really needed or wanted. And, interestingly, the entire vernacular is built up around, not that you're purchasing something, but you're winning something. So, you put in a bid and then you watch your bid, and you raise your bid until you see, as the time ticks down, you get to the point where you have an opportunity to win. And when you do ultimately purchase the product, a screen comes up and says, "Congratulations, you won!" So, it really brings the purchase environment into almost a gaming environment or a gambling environment. You feel as if you've spun the wheel or rolled the dice and you've won and it literally tells you that. And you're thrilled.

There are instances, known instances, of people who will countdown the hours that their bid has left to go, and they will jump out of bed at two or three in the morning to check their bids. They are compulsively addicted to knowing where their bids are. And they wind up purchasing tons of things they don't actually want.

It's the same phenomenon that happened a dozen years ago or so with the home shopping networks, where, particularly shut-in elderly individuals were adopting these kind of addictions to home shopping, and they were just basically spending their accounts buying themselves into debt. All these boxes showing up, a lot of times unopened or unused, most of them were opened. And the same thing is true here; people are winding up having tremendous eBay buyer's remorse because things are showing up on their doorstep that, first of all, aren't nearly as interesting in person as they looked like they were online, and secondly, they never really needed them or necessarily even wanted them to begin with.

There are instances, again, anecdotal instances where spouses have exhausted one another's retirement accounts by virtue of just going on compulsively and bidding on tons of things online. One person joked that his 401K now could best be described as a 1K, simply because his spouse basically exhausted it on eBay purchases. So, this is a serious issue. Incidentally, it's very difficult to get data on these because these organizations and agencies and so forth are fiercely protective and proprietary in relation to their numbers and purchase patterns as so forth. So, it's not easy to get the kind of data that would allow you to determine what percentage of people are sort of 'auction-house compulsives.' But it's clear, at least anecdotally, that there are serious problems among some minority of individuals when it comes to auction house and eBay use.

Well, these are some of the forms that fit problematic Internet use, but of course, there are a lot of others. A key one is simply surfing, just spending time surfing pointlessly on the web. Another one, of course, can be the use of email--compulsive email utilization, text message utilization. So, there are many other forms of Internet use abuse, and of course, more forms of Internet use appearing all the time. So, that's going to change as time moves forward. In 2006, Webster's "Word of the Year" was "crackberry" to refer to people's compulsive use of their Blackberrys, particularly for emailing, text messaging, and so forth. So, it's a cultural phenomenon at this point. Twenty-three percent of people indicated that they check their email in bed. Two-thirds of people indicated that

they've checked their email during a vacation. And virtually everyone expects a same-day reply. So, we have this kind of attachment to or addiction to sort of compulsive messaging.

It is interesting when you realize that as little as 10 or 15 years ago, there was virtually no text messaging on the planet; and yet today, as we're sitting here talking, there are more text messages transmitted every single day than there are people on the planet. That's how common text messaging now is. What's interesting is number that comes just through basic web utilization or accessing; about a third of all employers now report that they've fired at least one employee as a function of excessive online use. The most common ones are excessive social networking accounts (MySpace, Facebook) but also online gaming, gambling, and just nondirective surfing, just surfing for fun, many instances of people who spend as little time as they can work and as much time as they can surf.

I recently worked with a young man in his mid-20s, who quite literally spent maybe 30 minutes to an hour working each day at work. The rest of the time, he was completely surfing. Part of it was illegal surfing--child porn--part of it was just random surfing. He was very, very, very seriously addicted, and fell further and further and further behind in his work. He was really a tragic instance of somebody who was very capable, very competent, but could not prevent himself from going online. For that reason, many employers now lock down browsers and have very strong security precautions to prevent people from surfing, precisely because so much time can simply be wasted and not utilized productively. People lean toward being minimalists at work, maximizing their use of the web instead.

Let me say something about correlates and comorbidity of problematic Internet use because I think it's helpful to see what some of the consequences of problematic Internet use are, and also the kinds of disorders that tend to co-occur with problematic internet use.

Literature is very clear on sort of a pervasive or sustained negativity that accompanies protracted online utilization. The notion is that there's a self-sustaining kind of cycle. An individual experiences relationship difficulties, or stress, or anxiety and depression, and then they go and use the Internet as a way of self-medicating. Of course, that self-medication itself generates additional relationship and stress difficulties. So, it's this vicious cycle: I feel bad, so I retreat into the Internet. I retreat into the Internet, and so it creates more problems. I have more problems, so I retreat. I retreat, so I have more problems. Each builds on each other. Internet addicts, people who are addicted to the Internet, tended to use the Internet four times more often than non-addicts when they were stressed or sad.

So, this is beginning to kind of address issues of cause and effect. It is as if there is a great propensity for people who over utilize the Internet to return to utilizing as a way of self-soothing or self-medicating. The overuse of the Internet occurs at higher rates and leads to higher rates of overall negativity; that correlation is pretty consistently recorded

one in the literature. The more time that individuals spend on the Internet, the higher their overall levels of negativity, which sometimes includes major anxiety, unhappiness, or depression. But there is this consistent, moderate correlation between Internet use and negative effect. Griffiths, for example, found that the amount of time spent online correlated to the severity of negative consequences in a person's life.

In the study that I alluded to just a little bit ago, with Andrea Berlick and myself, we found correlations between a variety of well-being variables, and problematic social networking use. So, for example, the amount of time spent online on social networking sites correlated inversely, but modestly, with life satisfaction, and correlated positively with things like loneliness, depression, and negatively with self-esteem and happiness. Again, what you see is a pattern in which higher levels of utilization resulted in lower levels of satisfaction.

Self-esteem and depression are probably the most commonly cited consequences of protracted or abusive Internet use. Lower self-esteem is related to unrealistic, pathological Internet use and various pathological uses of the Internet are related to higher levels of loneliness and depression. It's almost as if there is a cycle between the two, and there's a kind of reciprocal cause-and-effect relationship that occurs.

What do people need? What do people avoid? What are some of the consequences of socially problematic Internet use? Well, the top ten things that people wind up using the Internet to avoid are the following. They report that they use the Internet in order to avoid loneliness, in order to avoid marital discord, basically, avoiding problems as a way to escape from work-related stress, boredom, depression, financial problems, insecurity about physical appearance, anxiety, struggles with other addictions, or a limited social life.

These are the things that people report trying to get away from by virtue of retreating into the Internet. What suffers as a consequence? Well, all the predictable things: time spent with family, time spent with your spouse, the other chores, sleeping, reading, watching TV, time with friends, exercise, hobbies, sex, and social life. These are in a sense the things that fall victim, the things that fall prey to the overutilization of the Internet, virtually, everything else in life.

Probably one of the best studies conducted on aspects of problematic Internet use, that is, a small, intensive qualitative kind of study, was conducted by Shapira and his colleagues in the year 2000. Essentially, they wanted to take a look at the pattern of consequences as also comorbid disorders associated with people who are suffering from problematic Internet use. They identified men and women, 18 years old or older, who've had problematic Internet use for at least a six-month period of time. So, they're trying to get people who have sustained, consistent pattern use, as opposed to somebody who has simply found a novel form of Internet use and is sort of rushing and gushing in business about it. It is important in their study that individuals, who were qualified for inclusion, had problematic Internet use that was defined as uncontrollable, markedly distressing, time-consuming, and resulted in social, occupational, or financial

difficulties, and importantly was not solely present during a hypomanic or manic phase. In other words, they were ruling out polarity and mood disorders more broadly.

So, for identifying this set of problematic internet use, they had a variety of assessments. They did a center-structured interview to assess demographic information, the nature of the Internet that they were using, and they tried to sort out whether or not the Internet activity was essential--things that were required for school or for work, for example, versus Internet activity that was not essential, that was simply for personal use or pleasure. And they looked to see whether the person had received any previous treatment and what their response to that treatment was. They also conducted structural clinical interviews to assess the comorbidity of a wide variety of various disorders. These were augmented with the DSM-IV structured scheduled models for the impulse control disorders that I once specified: paraphilias, somatic disorders, and so forth. And they took a family history of psychiatric disorders and administered the Brown obsessive-compulsive scale, which was modified for Internet use.

So, basically what they were looking for was, what are the various and sundry comorbid psychiatric disorders that co-occur with problematic Internet use. They wound up identifying 20 individuals who met the criteria for inclusion: 11 of them were male, 9 were female. The average age was about 36 years of age with a range of +/- 12 years.

The essential use among this group was about 2.8 hours per week; while they described the non-essential use as being about basically 10 times that much, 27.9 hours. So, this is a fairly problematic Internet use group, 2 hours for work and 27, 28 hours for pleasure.

They did demonstrate social impairment in 19 out of the 20 cases. That was the most common problem associated with Internet use. And in truth, it's what most commonly brings people into treatment. A husband or wife, a boyfriend or girlfriend says, "I just don't see him anymore, we just don't do anything anymore." Every single person's problematic Internet use would have met the DSM-IV criteria for impulse control disorder, not otherwise specified, while three would have met criteria for an obsessive-compulsive disorder. All participants met the criteria for at least one other DSM-IV, Axis I diagnosis. So, the patterns of comorbidity were rampant.

Let's take a look at comorbidity in more detail. Well, 15 percent of them met the criteria for depression, 60 percent of them for bipolar disorder, 10 percent for schizo-affective disorder, 55 percent for substance use or abuse, 70 percent for at least one anxiety disorder, 35 percent for an eating disorder, 15 percent for paraphilia, 50 percent for at least one impulse control disorder, 30 percent had compulsive buying, 5 percent, intermittent explosive disorder, 10 percent kleptomania, 5 percent pathological gambling, and 10 percent had BDD, body dysmorphic disorder.

So, you can see not only a wide range of comorbid disorders, but also incredible prevalence of them. Interestingly, 85 percent of the participants had received previous psychiatric treatment, and 75 percent of them had received psychotropic medications.

Where you see psychotropic medications, 35 percent of those who had received antidepressants reported a moderately favorable reduction in symptoms, and 35 percent was non-striking when you considered the effects of an antidepressant on depressive disorders, which is what they were designed obviously to treat. The overall response rate to antidepressants is about 60-70 percent, and the placebo response is about 30-35 percent. So, this is showing possibly something slightly more than a placebo effect, but again, it's only about a third of the people with this pathological Internet use responding to antidepressants.

Over half, 58 percent, responded to a mood stabilizer; 14 of the 25 trials were favorable. But again, remember, 60 percent of the people in this sample were diagnosed with bipolar disorder. So, it made sense that a substantial percentage of people would respond to mood stabilizers. That's consistent with the diagnosis of bipolarity.

It's important to keep in mind that the study has a number of limitations and it's completely tentative and provisional however suggestive these findings may be. Obviously the sample size of the study is very, very small. Twenty people makes it difficult to generalize through a broader population. It is the case that these symptoms were self-reported. The interviews were, you know, conducted but there was no reliance on third-party observations but on self-report. And of course, you have selection bias, people that are responding to ads, "If you think you have an Internet problem, come into the research laboratory." You have subject bias, that is, the wide variety of things that people bring in with them about expectations. And you have observation bias, that is, what you actually see you're looking for. So, it's a small-scale study that has a wide range of limitations. But, again, the overall message is that the comorbidity of co-occurring disorders with problematic Internet use is extraordinarily high and the range is extraordinarily broad.

Let me turn finally to say something about diagnosis and treatment in problematic Internet use. And here, you can see a jar of pills that says "world wide dweeb," "Internut cures Internet addiction." And would that it were that easy or that simple that we would have a pill for every ill, including something like Internet addiction. It's just not that simple.

You know, Internet addiction or problematic Internet use is a little like pornography or art or anything else that's difficult to define, but you know it when you see it. You know it in clear instances, when it's in your face it's evident that what you're dealing with is an Internet addiction. But defining exactly where that line is drawn, how you draw the line for diagnosis, is actually a fairly challenging thing to do.

Diagnosis of Internet addictions or problematic Internet use is, again, not an official diagnosis in the DSM at this time. Currently, it would have to be included as a "not otherwise specified"; an addictive disorder not otherwise specified or an impulse control disorder, not otherwise specified. With the DSM-V rules that are taking shape, there's going to be considerable discussion, deliberation, and ultimately decision making regarding what to do with Internet addictions, and probably they're going to be included

either under addictive disorders or within perhaps more properly the impulse control disorder section. But we have to await final word on that.

In the meantime, we have to figure out what problematic Internet use is, to be able to address the diagnostic concerns and considerations in identifying problematic Internet use so that it doesn't go completely undetected. Probably one of the most useful proposed diagnostic schemes was developed Shapira and his colleagues. I want to emphasize here, as they do, that we really are in a prediagnostic era when it comes to problematic Internet use. So, using any predetermined criteria sets may at this time encourage conclusions and limit exploration of other treatable diagnoses. So, we want to be really cautious when we develop these criteria that we're not looking at them as carved in stone, we're not looking at them as dyed in wool, that they're not hard and fast. And importantly, they're not exclusive of other disorders. Because someone has an Internet addiction, they may still have other addictions. That is, they may have a sexual addiction, they may be pedophilic, they may have a gambling addiction, they may have a gaming addiction, and it may be expressed through the Internet, but the Internet may not be the addictive element itself.

Likewise, a person may feel really lonely because they're spending all the time on the Internet, but that could be as much cause as it could be effect, or vice versa. So, that's the disclaimer in relation to developing diagnosis criteria for problematic Internet use.

That being said, Shapiro and his colleagues argue that there are a number of things that could be taken into consideration when developing a criteria set. A) In order to be diagnosed as problematic on Internet behavior, a person would have to experience a maladaptive preoccupation with the Internet use, as indicated by at least one of the following. Number one, preoccupation with the use of the Internet that is experienced as irresistible. This is the compulsive component. Two, excessive use of the Internet for periods of time longer than planned; that's another important criteria, in fact. In some gaming analysis, which happens now, when somebody comes in to use the Internet, they will ask, "What time do you want to be logged out?". They will indicate a time, 2:00 p.m., for example. And within some reasonable period of time after that, say, at 2:30 or 3:00, they will get a tap on the shoulder. "You said you needed to be out of here at 2:00. By the way, it's 3:00." This addresses this particular criteria, excessive use of the Internet for periods of time longer than planned.

Criteria B), the use of the Internet or the preoccupation with its use causes clinically significant distress or impairment in social, occupational, or other important areas of function. In other words, it has real life consequences that register deleterious effects on aspects, spheres, or arenas within your life.

And then C) the excessive Internet use does not occur exclusively during periods of hypomania or mania and is not better accounted for by other Axis I disorders. This is the simple rule-out, particularly for bipolarity, but also for some other mood disorders as well. In other words, it can't be accounted for better by some other existing diagnosis within the DSM.

Well, how would you go about assessing these? Well, you assess them largely through a variety of inventories. The inventories range dramatically in relation to what they consist of, and often times they have specific questions either about generic Internet use or about specific forms of Internet use. So, for example, a typical question on some of these surveys or assessments might be things like, have you ever lied to friends or family members to conceal the extent of your online gaming, gambling, bidding, surfing, etc.? Likewise, have you ever jeopardized a job, education, career, or opportunity because of your gaming, gambling, or bidding, or surfing?

A few other questions might be things like, do you ever use gaming, gambling, surfing, etc. as a way of escaping from problems or to relieve feelings of helplessness, guilt, anxiety, or depression? So, there are a variety of these questions and questionnaires that are designed to target specific aspects of these criteria. They're self-assessments. And of course, you could also include the user's parents/spouse; you can wrap in their perspectives and you can triangulate them. What does the user say? What do his or her parents say? What do his or her spouse or partner say?

There are a variety of these assessments available, and at the end, I'll give you a couple of resources to come closer to getting some instruments that can be quite helpful in this regard.

Let me say a few words about treatment by way of conclusion. Here, you can see a cartoon. It just underscores the problematic aspect of Internet treatment. And here is a guy holding out his hat, asking for donation, and he says help me get back online. Well, we have to ask, what are we doing in relation to treating people?

Now, what is the goal? What is the objective? What is the purpose of our treatment? Here is one of my favorites; the Dilbert cartoon. Dilbert is talking to his physician, and he says, "I'm addicted to the Internet because it's more interesting than people. Is there a pill that you can give to everyone else to make them more interesting?"

And then he goes home, and he's confronting his dog, and he's says, "Doctors never want to treat the underlying problem." And, in this case, the truth is, we don't really know what the underlying problem is. What is the underlying problem of Internet addiction? It's not exactly clear nor are the mechanisms and treatment.

There is, at this point, no single, agreed-upon treatment choice for problematic Internet use. It is the case that there are a variety of alternative models available. So, why is this? It's fair to say that we don't have any definitive treatment model. We don't have any single treatment of choice. We don't have any empirically validated or supported treatments for Internet use or use at this time.

It's still a case that what models we do use or interventions we do utilize are like models that are used for other addictive disorders or impulse control disorders. Orzack & Ross for example, talked about how specific problematic Internet use treatment could follow

traditional addiction treatments. And they really outline and approach this kind of a twelve-step model, just as you would do with substance use or abuse for Internet use or abuse.

Similarly, people have argued, as I mentioned before, that treatment could be sort of tailored around other forms of addictive or impulsive behavior, maybe even like in the case of bulimia or compulsive eating disorders, where the person is naturally going to have to be exposed to the Internet, but the goal is to be to control that Internet utilization. Because Internet exposure is probably just about as prevalent as exposure to food anymore, it is very difficult to navigate through life without navigating through the Internet.

Other people, David & Yellowlees for example, have advocated on behalf of cognitive behavioral treatments. These primarily target a set of dysfunctional beliefs or misrepresentations, inaccuracies regarding Internet utilization and access. And largely they're designed to sort of break through denial about the potential horror that the Internet overutilization is registering in their lives, socially, occupationally, and recreationally and so forth.

Dr. Phil, of course, has something to say about breaking the Internet addiction. He talks in terms of seven stages, characteristically common sensible kinds of things to take into consideration when it comes to treatment. I will say a word about each of these in relation to acknowledging the purpose. To the user, you suggest he or she must ask why he or she does it. The user has to be able to answer that question. Is the user on the Internet in order to deal with stress or anxiety. For example if you are addicted to smoking or drinking, you have to recognize that this addiction serves some purpose.

The user must admit that he or she has that habit, that it does something for him or her. And yet it really is a precondition for the user to recognize a problem before it serves a better function and before it can be tackled. So, the goal here is to ask the user what purpose it serves. If you're an alcoholic, you're not drinking just because you're thirsty. You're self-medicating for some purpose, to get away from some pain in your life.

The goal then becomes to address that pain, to address that challenge, to address that obstacle, to address that problem, rather than to avoid or withdraw from it.

Number two, think rational thoughts instead of denial. And here the user has to be able to understand, in a conscious light, that the addiction is unhealthy and yet he is she continues doing it. And so this is a kind of dilemma: doing something that is working not for, but instead working against, him or her.

So, the goal here is that if there's something that really is a problem, and the user is dismissing it, denying it, withdrawing from it, or trivializing it, it may well be that he or she is going to have to rely on other people to help him or her see things both clearly and or rationally. When it's not a problem to/with others, it's not a problem for the user.

So, the user may have to turn to them as someone who would turn to a sponsor to sort out what is straight thinking and what is not.

Number three, use alternative coping skills. Basically, people don't break bad habits very easily. Years ago Mark Twain said that quitting smoking is the easiest thing in the world; I've done it a thousand times. And the truth is, breaking an addiction of any sort is not easy. Another thing he said is that a habit is not to be thrown out the window by anyone but coaxed down the stairs one step at a time. In other words, it's a process. It's not an event. And it requires real work.

In relation to Dr. Phil's perspective here, in terms of alternative coping skills, it's important to be able to replace what you are doing with problematic Internet use with something else, with some alternative techniques, or things you can do to occupy the time and space, and to fulfill some of the purposes that the Internet use has been fulfilling for you. So, for example, the use of relaxation exercises or techniques may be ways to help fill in that time and to fulfill some of the same function of escapism.

Maybe renting a movie would be a better thing to do because the movie stops, plays, starts, plays and stops. It's a guaranteed two-hour time dump, but it has a beginning, a middle, and an end, whereas your Internet use can go on, and on, and on.

Number four, he talks about identifying danger zones. A danger zone can be any particular time of day, for example, or it can be a reaction to a predictable circumstance. It may be that your Internet use is triggered by certain things, an argument with your spouse.

It may be that it is a default option, what you go to whenever you don't have something else to occupy your time. And maybe it's what you do because it's what's available to you in the evening, after dinner. It's open time. And so it may be the challenges with Internet use really are localized and connect with certain times, events, people and so forth. So, the user doesn't have to get through 24 hours. It may be that he or she has only an hour or two of lost thoughts during the day. So, if the user just recognizes danger zones, then he or she really only needs to tackle the danger zones in order to tackle the over-arching problem.

Number five, making lifestyle changes. It's not willpower, Dr. Phil says, it's programming. The user has to set life up for success so you will break your addiction to the Internet just like when trying stop smoking or drinking. The user must try a wide variety of things. Certainly, you don't want to carry around money for cigarette-vending machines.

And the user needs to get rid of things that may trigger a behavior in one's house or work setting. Setting up the environment can really help you with that regard. The user may have to make Internet use limited or may have to put a timer on it. Alternatively, the user may have to have sign-ins and sign-outs by spouses or may need to be monitored.

In other words, the social environment can help the user control and regulate the self until he or she learns to do so.

Number six, be accountable and have a support system. Being accountable to someone means that that person will not only support the user but will actually give the user a swift kick in the behind when needed in order to get through what is need to get through This is something, you know, between support and reinforcement. So, it may well be that whether that support is something sought online or in the household, other people need to be part of a solution.

And, finally, it's important to be able to recognize accomplishments, even baby steps. Overcoming an addiction of any sort can be very, very difficult but as many success stories attest to, it can in fact be done. When the user sees progress, even tiny little steps, the user has to find ways to motivate himself or herself to keep going. So, the user should be told to give yourself credit. Give yourself a pat on the back. Give yourself a reward. For every step you make, start admitting that you had a problem. And you're tackling it, and reward yourself for everything you make.

Similarly, Dr. Kimberly Young has an approach for dealing with Internet addiction that really begins trying to break through the cycle of denial, which she encourages people to do, to sit down and write out every activity and practice that you've neglected or curtails what your Internet habit emerged. After you do that, then you rank each one on a scale of one to three, from very important activities to very unimportant activities. In rating your lost activities, you try to genuinely to remember your life before the Net.

Consider then, for a moment, just what you're missing by giving up these activities. For each and every activity on the list, carefully consider which matters more, the Internet or the lost activity. And, again, this is just a way to prevent the person from simply escaping, withdrawing, denying, distracting, or avoiding. And instead confront or encounter the real losses associated with the problematic Internet use.

Well, I should say just a word about psychopharmacology in relation to treatment. There currently are no recognized or approved medications for problematic Internet use. That being said, medications may be used to address secondary symptoms. So, for example, you may have medications that would be used for dealing with anxiety, if anxiety is one of the things that drives the person to use the Internet. Or for depression, if depression is one of the consequences or one of the causes of Internet use.

A person who is uncomfortable and has a social anxiety disorder, or is depressed, or is uncomfortable going out into the world and meeting people or interacting with people may find that the use of anxiolytic or anxiety agent or antidepressant would be really quite helpful. The primary treatment is for the underlying mood or anxiety disorder, but the consequences can have a physically positive effect on the problematic Internet use. It also possible that the pharmacological approach can be used for comorbid disorders.

Take, for example, bipolar disorder. Maybe a person has heavily utilized the Internet during hypomanic periods of time, when they're on shopping sprees, or gambling sprees, or gaming sprees, or surfing sprees. So, it may well be that a mood stabilizer will be a useful pharmacotherapy approach, and may have positive effects on problematic Internet use. But there currently is no FDA-approved pharmacological treatment for problematic Internet use, because, of course, there is literally no designated diagnosis of problematic Internet use currently in the DSM.

In addition to these approaches, there are, perhaps ironically, a variety of resources available online. There are online support groups. There are a variety of different resources at where you could find face-to-face contents for therapy or for support groups for people who are experiencing some of the online addictions, oftentimes organized around gaming, gambling, social networking, and auction houses, instead of real support groups. And you can find those in face-to-face groups online.

There are also support groups available both online and face-to-face for families who are struggling with the addictions of their children and their spouses. Of course, there are a wide variety of individual supports available, as well.

But the truth of the matter is that therapy websites can be quite useful. There is some virtual literature that suggests the utility of therapy in at least some percentage of cases. And, of course, the very thing that draws people into problematic Internet use makes the Internet a vehicle to at least initially seek help. Some percentages of those people may well be helped through an exclusive online environment, but for some, it represents a pathway to be able to give that up to someone or some treatment program that could be quite helpful for them.

Let me conclude then with just a few resources that may be helpful. I think an interesting and still useful classic in the field is a very accessible sort of introduction or overview of problematic Internet use called "Caught in the Net" by Kimberly Young. It's a 1998 title, so it's dated. But, again, it provides a real accessible overview. It's a good bibliotherapy resource for clients, in particular. The Internet addiction guide (at <http://psychcentral.com/netaddiction/>) is quite helpful. It's an online resource that has a variety of different things attached to it, including some nice assessment instruments that enjoy, pretty reasonable psychometric properties, which is excellent.

The Center for Internet Addiction Recovery, another big excellent website to go to. It includes potential resources for help on site. It is their treatment centers that work with all the recovery for Internet addictions. The Journal of Sexual Addiction and Impulsivity publishes a fair amount of work that not only has to do with online sexual addictions but also compulsive online behavior, more broadly outside the domain of sexuality. So, it's a good ongoing periodical resource. And then, finally, if you're interested in issues and diagnoses, the Shapira and colleagues' work on problematic Internet use and their proposal for help to classify and diagnose problematic Internet use could be a helpful resource, as well. Well, I hope this program has been helpful to you in relation to providing an overview of the expanding world of potentially problematic Internet use.

APPENDIX B
POST-TEST QUESTIONS

Q1 – A reasonable estimate of internet addiction is

- 10%**
- 25%
- 35%
- 50%

Q2 – Cooper's ACE model of the Internet's addictive qualities include all the following except:

- convenience
- escape
- creativity**
- anonymity

Q3 – Internet use encourages the release of _____ in the brain.

- dopamine**
- acetylcholine
- norepinephrine
- serotonin

Q4 – Young compiled a list of the top 10 avoidances that encourage Internet use for escape. These avoidances include all of the following except:

- marital discontent
- illness**
- loneliness
- limited social life

Q5 – PIU may be classified as an impulse control disorder.

- true**
- false

Q6 – Many people look at _____ as the purest form of Internet addiction.

- cybersex
- chat rooms
- online gambling
- online gaming**

Q7 – World Wide Internet use reached over _____ people by 2008.

- 108 million
- 361 million
- 1.6 billion**
- 3 billion

Q8 – ____ percent of American households play computer and video games.

- 10
- 30
- 40**
- 65

Q9 – In Internet gambling, many physiological needs and desires for _____ are met through Internet factors.

- stimulation**
- love
- communication
- interaction

Q10 – The Internet took ____ years to reach a body of 50 million users.

- 2
- 4**
- 10
- 15

Q11 – Appealing qualities of cybersex include all of the following except:

- no STD's
- anonymity
- greater sexual arousal**
- inexpensive

Q12 – ____ percent of cybersex abusers have a sexual abuse history.

- 18
- 30
- 50
- 68**

Q13 – Because the Internet is essential to daily life, Orzack and Ross compare cybersex addiction to _____ in terms of treatment methods.

- eating disorders**
- drug addictions
- personality disorders
- alcoholism

Q14 – Signs that one may be a digital immigrant includes all of the following except:

- need to print something in order to read it
- calling someone to ask if they received their email
- need to print manuscript in order to edit, rather than edit on computer screen
- assuming that software is intuitive and one can learn "as you go along"**

Q15 – Women and men both like the fact that cybersex and online relationship

_____.
enable easy access to porn
avoid social stigmas
are not affected by physical appearance
avoid performance anxiety

Q16 – Digital natives will have spent _____ the hours online as compared to reading.

twice
equal
half
one third

Q17 – _____ is now considered the most popular social networking site.

MySpace
Facebook
Xanga
Snapfish

Q18 – In a 2007 study, _____ percent of undergraduates used the most popular social networking site.

22
45
62
94

Q19 – Higher levels of _____ are correlated with greater use of social networks in college students.

extraversion
social anxiety
introversion
none of the above

Q20 – The most prevalent risk factor and consequence of PIU is _____.

negativity
depression
mental disorders
low self-esteem

Q21 – Time spent online corresponds to severity of negative consequences.

true
false

Q22 – All of the following refer to Internet Addiction except:

- online psychopathy**
- pathological Internet use
- compulsive Internet use
- Internet dependency

Q23 – Internet use turns into PIU suddenly.

- true
- false**

Q24 – All of the following are activities that fall in the top 10 “activities that suffer because of excessive Internet use” except for:

- time with partner or family
- daily chores
- sleep
- work**

Q25 – Internet gambling is a _____ dollar per year industry.

- 10 million
- 50 million
- 2 billion**
- 10 billion

Q26 – Internet gambling is more addictive than traditional gambling for which of the following reasons:

- accessibility
- feelings of control
- visual stimulation
- all of the above**

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BIOGRAPHICAL SKETCH

Erica Webber Miller was born in 1986 in Jacksonville, Florida. The oldest of three children, she grew up in Jacksonville, Florida, and graduated from St. Johns Country Day School in 2004. She earned her Bachelor of Science. in psychology from the University of Florida in 2007.

Upon graduating in December 2007 with her B.S. in Psychology, Erica took a break from her education and returned to Jacksonville to live at the beach for a year and re-evaluate her future goals. After much contemplation, she decided to apply for University of Florida's Counseling Psychology Doctorate Program in effort to one day be a psychologist and work with families. Once accepted to the program, Erica moved back to Gainesville for graduate school; this time however she was joined by her younger brother. The first year of graduate school she and her brother lived together; this set up proved to be beneficial for them both!

The second year of graduate school was marked with Erica's excitement both from practicum work with clients and an engagement to Ryan Miller, a 28 yr old medical device rep. This engagement spurred Erica's move home to Jacksonville and the start of her commuting to graduate school. Although planning a wedding, living at home, and commuting to school was challenging on many fronts, it was certainly the most rewarding experience for her as she saw many of her dreams come to fruition. Erica completed her master's degree in August 2010 following her wedding, and she looks forward to continuing within her program and facing the new exciting frontier of teaching!