The Use of Online Methodologies in Data Collection for Gambling and Gaming Addictions

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Abstract The paper outlines the advantages, disadvantages, and other implications of using the Internet to collect data from gaming addicts. Drawing from experience of numerous addiction studies carried out online by the author, and by reviewing the methodological literature examining online data collection among both gambling addicts and video game addicts, the main issues concerning data collected using the Internet are discussed and reviewed. This paper extends upon previous methodological papers in the area by outlining some of the methodological and ethical issues associated with specific (rather then generic) online methodologies that have been used to carry out gaming addiction research. The specific online data collection methods examined include the collection of gambling and video game addiction research data via (i) online questionnaires, (ii) online forums, (iii) online participant observation, (iv) online secondary data, (v) online interviews, (vi) online exemplar websites, and (vii) mixed methods online evaluation. It is concluded that the many advantages of online research methods can be a useful and practical way of examining many different aspects of gambling and video game addictions.

Over the last two decades, there has been increasing research into excessive gambling and video game addiction. Furthermore, there are an increasing number of papers highlighting the common psychological factors between the two activities and the fact that there appears to be increasing psychological similarities and convergence between the two potentially addictive behaviors (e.g., Griffiths 1991, 2005a, 2008; Fisher and Griffiths 1995; Griffiths and Wood 2000; Wood et al. 2004a). There has also been convergence in the types of

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methodology used to collect data among those addicted to gambling and gaming—particularly since both types of player can now participate in their chosen activity via the Internet (i.e., online gambling and online video gaming). The fact that both activities can be played online has led to an increase in online data collection among those addicted to gambling and video games.

There are many advantages of conducting research and collecting data on addictive populations via the Internet. As Wood and Griffiths (2007a, b, c) point out, researchers do not have to be in the same geographical location as either the participants or fellow research colleagues. This makes both multi-cultural research and cross-institutional research collaborations on various behavioral addictions more practical. Furthermore, the researcher may not need to have an understanding of web design due to the development of easy to use web design software (e.g., web software that allows researchers to put online surveys onto the Internet). Advantages for addiction research outlined by Griffiths and colleagues (Griffiths 2002; Wood et al. 2004c; Wood and Griffiths 2007b; King et al. 2009) include the fact that the Internet:

- Can be a very useful medium for eliciting rich and detailed data in sensitive areas such as gaming addictions.
- Has a disinhibiting effect on users and reduces social desirability. For populations discussing sensitive issues like addiction, this may lead to increased levels of honesty and therefore higher validity in the case of self-report. Research has tended to show that online communication can lead to more emotional discourse and higher levels of personal disclosure than in face-to-face settings. Online self-report methodologies may result in more honest responses from addicts.
- Provides access to individuals (e.g., those with addictions to gambling and video games) who may not have taken part in the research if it was offline.
- Has a potentially global pool of participants, therefore researchers are able to study extreme and uncommon behaviors (such as addicted individuals) as well as make cost-effective cross-cultural comparisons.
- Provides access to "socially unskilled" individuals (e.g., video game addicts) who may not have taken part in face-to-face situations.
- Can aid participant recruitment through advertising on lots of different bulletin boards and web sites (e.g., gambling chat rooms, gaming forums).
- Can contain archived material allowing time-based qualitative research can be carried out.
- Produces data that in most cases can be automatically transcribed which suits some particular psychological methodologies (e.g. interpretative phenomenological analysis, discourse analysis, etc.).

Psychological research into gambling and video game addictions that can be done on the Internet includes correlational, cross-sectional, survey-type and/or descriptive research. Furthermore, online gamblers and online gamers are more likely than offline gamblers and gamers at being proficient in using the Internet. Online data collection can also facilitate 'snowball' sampling techniques (Wood and Griffiths 2007b). Furthermore, such techniques may help in obtaining much larger and/or possibly more diverse and extreme samples (e.g., addicts) than would otherwise be possible to attain in an offline situation. However, there can also be disadvantages including issues such as reliability, validity, and generalisability although it could be argued that these are just as likely in offline environments. It may also be difficult to verify that the participants are who they say they are (e.g., over 18 years old, is male or female, is really an addict, etc.). This also poses

ethical questions which have been discussed at length elsewhere (see Wood and Griffiths 2007b).

In this paper, the advantages and disadvantages to this form of data collection among gambling and gaming addicts will be outlined. This paper extends upon previous methodological papers in the area (e.g., Griffiths 2002; Parke and Griffiths 2002; Wood et al. 2004c; Wood and Griffiths 2007b; King et al. 2009) by outlining some of the methodological and ethical issues associated with specific (rather than generic) online methodologies used in the addiction field. This is done by using real examples from the author's research into gambling and gaming addiction over the last decade and includes the Internet as a medium for collecting addiction data via (i) online questionnaires, (ii) online forums, (iii) online participant observation, (iv) online secondary data, (v) online interviews, and (vi) online exemplar websites, and (vii) mixed methods online evaluation.

Data Collection via Online Questionnaires

Probably the most used online data collection method is the online questionnaire. This author has used this particular online methodology in many studies to examine various aspects of both gambling and video gaming addictions. This includes studies examining online problem poker gambling (Wood et al. 2007a; Griffiths et al. 2009), excessive online gambling among students (Griffiths and Barnes 2008), socio-demographics in excessive and non-excessive online video gaming (e.g., Griffiths et al. 2004a), adolescent excessive and non-excessive online video gaming (Griffiths et al. 2004b), time loss and dissociation in video gaming (Wood et al. 2007b), online video gaming addiction and/or aggression (Grüsser et al. 2007; Hussain and Griffiths 2009), gender swapping in online video gaming (Hussain and Griffiths 2008), excessive socialising in online video gaming (Cole and Griffiths 2007), and excessive Internet use more generally (e.g., Niemz et al. 2005; Widyanto et al. 2008).

Typically in these types of study, online questionnaires are publicized and placed at online gambling forums or online fan sites of the most popular online computer games. For instance, studies by Griffiths et al. (2004a, b) surveyed *Everquest* players by targeting *Everquest* player sites (www.everlore.com, www.eq.thesafehouse.org and www.eqvault.ign. com). The *Everlore* site was used as the prime target because of its larger audience and previous feedback from pilot work by the authors. Each fan site tends to have similar structured features (e.g. help guide, maps, forums etc.). These forums are a convenient way to communicate information between players (like a pin up notice board for everyone to see). It is here that Griffiths et al established online contact with the players. Once players visited the hyperlink address to the questionnaire, they simply clicked their selections and pressed the submit button at the end of the page. The data were then captured to allow it to be analyzed in SPSS format for convenience. Typically, each hour, hundreds of messages are passed on amongst the players within the forum. This means that older messages are 'pushed to the back', and are not in the forefront. Therefore, to keep the postings up to date, researchers have to go back every few days to each site to refresh advertisement for participant recruitment. This can be done by adding a new message to whichever discussion is taking place at the time.

Some of the many advantages of online questionnaires targeted at such specific groups as gambling and gaming addicts include (i) ease of participant recruitment and confirmed presence of the target group under study, (ii) collapsed geographical boundaries that may increase numbers of participants in the target group, (iii) improved time and cost

efficiencies (i.e., allows relatively large scale samples to be surveyed quickly and efficiently at a fraction of the cost of 'pen and paper' equivalents with no travel needed by either the researchers or the participants), and (iv) facilitated data collection and manipulation (e.g., automated data inputting) (Griffiths 2002; Wood et al. 2004c; Wood and Griffiths 2007b; King et al. 2009). Furthermore, Wood and Griffiths (2007b) also argue that online surveys can be particularly useful in gauging opinions from a target group at any particular point in time. For example, gamblers or gamers can be contacted following the introduction of a new game for their initial impressions and attitudes and/or contacted again at a later date when they have had more experience of the game under examination.

Online questionnaires are particularly useful for the discussion of sensitive issues that participants may find embarrassing in a face-to-face situation (such as problem gambling or 'video game addiction'). The nature of this medium means that a relatively high degree of anonymity can be maintained, and gamblers and video gamers may feel more comfortable answering sensitive questions on their computer rather than in a face-to-face situation. The main disadvantages of online questionnaire use among addicted populations (e.g., potentially biased samples, validity issues) are in many ways no different than those encountered in more traditional offline research approaches. Survey data are necessarily self-report although—as mentioned in the introduction—the collection of the data online may have lowered social desirability and increased levels of honesty among addicts. Another disadvantage is that many gamblers and video gamers (both addicts and non-addicts) may be suspicious of unsolicited requests to take part in online questionnaire studies. To overcome this, the researcher may have to spend some time actually taking part in activities of that particular online community (e.g., participating in online discussions) before potential participants trust the researcher enough to participate (Wood and Griffiths 2007b).

One other issue that should also be noted is when participants are given a choice as to what mode they fill out questionnaires (online versus offline). In the most recent British Gambling Prevalence Survey that assessed problem gambling prevalence (Wardle et al. 2007) all participants ($n=9,003$) were given the option to fill out the questionnaire online or offline. Relatively few individuals (7%; $n=599$) actually chose the online option to respond. In addition, response rates among those who initially stated that they would complete the online questionnaire were significantly lower than among those who agreed to complete the questionnaire offline. Only one in two of respondents (52%) who said they would complete the online questionnaire actually did so, compared to almost nine in ten respondents (87%) who said that they would complete the offline questionnaire. Furthermore, recent work examining who chooses web surveys when presented with mode choices concluded that offering this choice did little to help address non-response biases, as those who chose the web survey option were more likely to be from those groups with the greatest propensity to respond to surveys, such as managerial and professional groups (Wardle and Robinson 2007). Therefore, offering an option that potentially lowers response and could also contribute to greater non-response bias. The reasons for this were:

- Some respondents simply used the option to fill out the online questionnaire as a 'soft' refusal, promising the interviewer that they will fill the questionnaire in online, without the intention to do so.
- Some respondents attempted the online survey but gave up before completion.
- Offering a choice of completion mode caused respondents to put the task aside that disrupted the response process.
- Notices about Internet reporting may have caused respondents with privacy concerns to question the confidentiality of the survey.

This research suggests that those offering multi-mode response options to gamblers should be cautious about whether it will actually increase response rates.

Data Collection via Online Forums

The Internet can be a rich and complex resource of textual material. As such, it can be invaluable to those researchers interested in specific experiences of particular individuals such as those addicted to gambling or video games. Included in an addict's lived experiences are perceptions, beliefs and feelings, all of which are made sense of by the individual through the process of meaning making. Some of the most interactive and textually rich parts of the Internet are numerous gambling and gaming forums. Gaming forums typically comprise interactive sites where gambling- or video game-specific messages can be left or particular gaming topics discussed in real time. These sorts of data are naturalistic and can be collected without identifying oneself as a researcher or even acknowledging a researcher's presence (Wood and Griffiths 2007b). Such forums can be dedicated to specific types of gambling (e.g., online poker, slot machine gambling, etc.) and online video games (e.g., *Everquest, World of Warcraft*). The focus of these forums can range from hints, tips and strategies through to concerns about addiction (e.g., the time spent gambling or playing video games either by the players themselves or by their spouses and partners).

One such study utilising this methodology was by Chappell et al. (2006) who reported a study that utilized and analyzed data from online gaming forums. The data for the study were taken from a range of forums concerning excessive online gaming. These forums were all in the public domain, and no usernames or passwords were needed to access the sites. As researchers, none of the team participated in any online communications nor did they gather information in the form of online interviews, surveys, etc. This form of Internet-based research approach has been described as both passive (Eysenbach and Till 2001) and unobtrusive (Paccagnella 2006).

Using Interpretative Phenomenological Analysis (IPA; Smith and Osborn 2003), Chappell et al analyzed forum accounts from twelve excessive online gamers who played the game *Everquest.* Using IPA, they were able to carry out a detailed examination of how individuals perceive, experience and make sense of their personal-social online gaming world. Forum accounts were examined from players who played online games excessively at various stages of their *EverQuest* playing careers. Data came from those who had given up at some point only to resume playing, those who were still playing after a long period of time, and those who had given up some months previously and wanted to share their experiences. Issues of validity were attended to in two ways. Firstly, Yardley's (2000) principles for assessing the quality of qualitative research were attended to. Secondly, an independent audit (Yin 1989) was carried out on the early analytic stages. Using forum data and this methodology, Chappell et al found that the accounts presented by players and ex-players appeared to be 'addicted' to *EverQuest* in the same way that other people become addicted to alcohol or gambling. Most of the individuals in the study appeared to display (or allude to) core components of addiction such as salience, mood modification, tolerance, conflict, withdrawal symptoms, cravings, and relapse (Griffiths 2005b).

Despite the clear advantages of using online forum data to study game-addicted populations (ease of data collection, cost-efficiency), the collection of addiction data by 'lurking' (i.e., observing without making presence known) raises some interesting ethical

issues. In online addiction research, the lines have become blurred between 'public' and 'private' spaces. On some level, cyberspace is always a public domain unless specifically designated as private. However, respecting an addict's right to privacy is viewed as a basic ethical requirement of any social science study. Some may argue that it is the perceptions of the participant that defines the domain as public or private, rather than the physicality of the situation (Wood and Griffiths 2007b). The issue of privacy may become more complicated if the researcher is involved in online participant observation. It has been this author's practice to make other forum users (i.e., gamblers and gamers) aware of the situation unless there is good reason to assume that this would adversely affect the data of the people involved.

Data Collection via Online Participant Observation

Many researchers have employed the ethnographic method as a means of understanding and describing different cultures. This method has many advantages for studying online gambling and video game addiction (see Parke and Griffiths [2008] for an overview of using participant and non-participant observation in gambling research). By going online, the researcher becomes a part of the phenomenon that is being studied (Wood and Griffiths 2007b). Furthermore, personal experience of the domain of investigation can be a distinct advantage in many ways. For example, understanding what gambling or video gaming feels like, knowing gambling or video gaming etiquette among excessive and non-excessive players, and experiencing the actual dynamics of gambling and video gaming can all be very insightful and may sometimes be essential for the design, implementation and analysis of online studies in the gaming studies field.

Ethnography focuses on accounting for the actions and intentions of the studied social agents, and outlining how such behavior is rationalized and understood by the wider group (Ley 1988). According to Lofland (1976), the key aspect to performing an ethnographic analysis is to balance the role of being an active part of the selected community, while intermittently assessing emergent findings against existing and developing theory. In effect, ethnography reveals the relationship between behavioral intent, attitudes, and beliefs against actual behavioral patterns (Eyles 1988).

This author has found that having some experience of online gambling or gaming, or at least having colleagues who play, was an essential requirement for understanding the nuances of excessive and non-excessive online gaming behavior. For instance, Parke and Griffiths (2006) applied ethnography to the study of poker skill development within a web-community. The objective was to examine how the structure inherent in poker and information technology (IT) is interrelated with agency of both online and offline poker gamblers, and its relationship to problematic play. The study was a virtual ethnographical research design looking at how poker gamblers utilise computer-mediated communication (CMC) to develop their poker skill and profitability, and to examine the factors associated with problem gambling. The first stage comprised of a 6-month participant observational analysis of two independent online poker web-communities. After a 4-week latency period of exclusive observation to become familiar with specific community protocol, one of the research team [Parke] began participating in web-community interaction. He participated in poker gambling during the entire 6-month study period and used strategies proposed from members to develop poker ability. This approach provided an insider's perspective into how skill development through CMC affects poker gambling behavior. It also provided insights into the development of problematic play.

The researchers generated web-community discussions regarding specific behavioral concepts and cognitive processes based on accumulative analysis of emergent data and personal experience of using CMC to develop poker gambling skill. Gambling web-community interaction was observed, monitored and analyzed through traditional content analysis. It is clear that for web-community members, IT was perceived to have significant utility in acquiring poker gambling knowledge and skill, and in providing optimal structural and situational characteristics for poker gambling. Membership and participation in such web-communities provided poker players the opportunity to benefit from the consequences of reporting gambling experience and acquiring both poker gambling structural knowledge and skill. Fundamentally, the web-community encourages its members to be constantly evaluating the outcome and effects of their poker gambling behavior from a disengaged emotional disposition. If members strive to maintain this behavioral process, the probability of a gambling addiction developing from impulsive, irrational gambling behavior is significantly reduced.

The significance in ethnographic data lies in its contextual detail of process which more objective qualitative research often occludes. Essentially, through generating knowledge of the social process on a micro-logical level, understanding of the behavior on a macro-logical level will be enhanced. Other qualitative and quantitative methodologies may not provide the necessary contextual reference from which to understand poker skill development and gambling addiction within a web-community.

Ethnography can be criticized as a valid methodological tool of analysis within social science based on its perceived lack of objectivity, the generalisability constraints, and how data are represented. However, Herbert (2000) has addressed each of these methodological concerns, justifying ethnography as a valid and effective analytical framework. Although conceding that interpretation may be overly subjective based on the nuances and biases of the ethnographer, Herbert (2000) emphasizes that all scientific methodologies are subject to interpretation by the researcher no matter how objective they at first appear. Put simply, 'objective' scientific methods, including measures of reliability and validity, are effectively social processes themselves. The culture of the specific scientific paradigm undoubtedly influences how data are interpreted.

There are also other advantages. Detailed logs provide a record of events and can be re-visited after the event itself has finished. Screen captures can be taken and used as examples or related back to the logs (Wood and Griffiths 2007b). Several members of a research team can be used to gain different perspectives, to compare notes on (say) excessive play, and/or to gauge inter-observer reliability. Furthermore, results can be posted on bulletin boards and gamblers and video gamers (including those addicted) can be asked to comment on the accuracy of the descriptions, and for any other observations that they may have. This also helps to empower the participant and ensure that they are not so likely to be misrepresented.

Data Collection via Online Secondary Analysis

Another online method for collecting gaming addiction data is the use of secondary data collected by specific gambling and gaming websites. For instance, in a study by Griffiths et al. (2003), data were collected for secondary analysis at two fan sites for *Everquest* video game players. The two sites chosen for analysis were *Everlore* (www.everlore.com) and *Allakhazam* (everquest.allakhazam.com). At the time of the study, these two Internet resources were the leading sites that supported *Everquest* players. Each of these sites

conducted regular player polls approximately every 2–4 weeks. Only one question was asked per player poll and the question posed could be about anything that may be of potential interest to other *Everquest* players including excessive play and addiction potential. The polls had been running at *Everlore* since June 1999 and at *Allakhazam* since July 1999 (*Everquest* came online in February 1999).

Griffiths and colleagues examined every poll question and data set on both fan sites from a 3-year period since inception. The first aim was to collate all data relating to socio-demographic variables in an attempt to assemble player profiles (e.g., age, gender, nationality, educational attainment, financial income). Other data relating to various aspects of online game playing were also examined including the frequency of play, length of time as a player, favourite and least favourite aspects to the game, excessive play, and the prevalence of particular game playing behaviors (e.g., gender swapping, role playing). As the authors had not set any of the poll questions, the data were necessarily limited to the poll questions set by the fan site hosts. All of the individual data sets comprised self-selected samples. However, all of the sample sizes were large (e.g., typical samples sizes of between 8,000 and 18,000), and there was nothing to suggest that the samples were not representative of online game players. Results from the secondary data analysis provided a lot of socio-demographic data that had not appeared in the academic literature before. For instance, the study showed that the majority of players were male (approximately 85%), that over 60% of players were older than 19 years, and that a small proportion of gamers were gaming online up to 80 h a week. The data provided evidence that the game clientele was very much an adult profile and suggested a different picture to the stereotypical image of an adolescent online gamer.

This was the first ever survey data on this particular issue and this particular online methodology provided a large amount of baseline data for future studies in the area. This in itself was a major advantage of the methodology. Another advantage of the data is that participants who provided it initially were participating in the surveys for the benefit of other like-minded people rather than academic research. Unlike academic interpretations, the notions around gaming excess were not pathologized by the participants. There is every reason to presume that the data provided was honest and less likely to influenced by social desirability factors found in academic research. Conversely, the major weakness of the online methodology used was its reliance on secondary (rather than primary) data. In summary, it would appear this type of data collection is perhaps most valuable where there is a lack of data in a particular area (such as online gaming addiction).

Data Collection via Online Interviews

Another online methodology that can be utilized to collect data on gambling and video game addicts is online interviewing. For instance, an in-depth qualitative study by Wood and Griffiths (2007c) involved the interviewing of 50 problem gamblers. The interviews focused on the gamblers' stories of when and how they first began gambling, how their problem developed, and where they were now. The study utilized face-to-face interviews, telephone interviews, and online interviews. Although Wood and Griffiths reported that online interviews tended to be shorter in length than verbal interviews, there was no difference in the type of response content.

Wood and Griffiths (2007c) argued that the online interviewing of gambling addicts was advantageous. As with collecting addicts' data via online questionnaires, online interviewing of gaming addicts involves a considerable saving in time for both researchers and

participants as there is no travelling involved for either party. Online interviews can also be carried out synchronously (via an instant messenger system) or asynchronously (via email). Asynchronous online interviews may be attractive and convenient for gamblers and gamers allowing them to respond at their own pace and in their own time. Furthermore, addicts have the opportunity (if they so wish) to take more time and reflect on the researchers' questions. In some cases, this may produce more considered responses and/or richer data. Such detailed accounts can also be used to publish case studies that may have not been highlighted in the literature before. For instance, Griffiths (2000) published five empirical case studies of 'Internet addicts' including one who was an excessive online video gamer.

The main advantage of interviewing gaming addicts online is that for the person being interviewed it may overcome feelings of embarrassment, alienation and stigmatization particularly as addictions to gambling or video games can be difficult and sensitive subjects to talk about. However, online interviews only proceed at the speed of an addict's typing and this author has found that responses by participants on instant messaging systems or e-mail generally give shorter responses to interviewer questions than those interviewed face-to-face.

Data Collection via Online Website Exemplars

Another online methodology where issues surrounding addiction can be explored is the examination of online gambling and video gaming sites as whole (i.e., as an online site exemplar where the site itself is the data source). This can be used as part of a wider scoping study or as data for study in its own right. For instance, a study by Smeaton and Griffiths (2004) examined to what extent UK-owned Internet gambling sites featured particular social responsibility measures and the extent to which these features (or the lack of them) may impact on problem gamblers. To do this, their study examined 30 Internet gambling sites visited by the research team. The researchers examined a range of areas on each site including whether the sites: did age verification checks of the players, did credit checks on the players, had credit limits, made references to controlled gambling, made links to problem gambling helping organizations/self-help groups, had self-exclusion features for problem gamblers, easy access to account balances, etc. By using this particular method of online data collection, Smeaton and Griffiths (2004) concluded that very few Internet gambling sites were engaged in socially responsible practices and that much more could be done to protect vulnerable gamblers (e.g., problem gamblers). The findings from this study were then used to compile a list of recommendations for good practice among Internet gambling operators in an attempt to minimise problem gambling.

Another way in which this type of online methodology can be used to collate addiction data is by being part of a scoping study. A scoping study aims to *"map rapidly the key concepts underpinning a research area and the main sources and types of evidence available, and can be undertaken as stand-alone projects in their own right, especially where an area is complex or has not been reviewed comprehensively before"* (Mays et al. 2001; p.194). Meredith et al. (2009) used the scoping study method as a technique to map relevant information in the field of massively multiplayer online role playing games (MMORPGs) including excessive and/or addictive play. Unlike a systematic literature review, here the scoping study tends to address broader questions and topics and does not seek to address specific research questions. Nor does it seek to assess the quality of included studies (Arksey and O'Malley 2005).

Meredith et al's (2009) scoping study was conducted over a 4-month period at the end of 2007 and was structured around a number of key areas including: the scope of MMORPGs (the types of online games that exist and how they are located, accessed, and utilized by players); game descriptions; primary game features; number of participants; frequency of player participation; gender, nationality, education and occupation of players; socialization features; game motivations, gaming excess/addiction, etc. Data were collected from a variety of different sources including online poll data, electronic databases, academic papers, and various miscellaneous online sources including gaming websites, online gaming forums, gaming news websites, etc.

The study overviewed these data relating to 20 MMORPGs (those that had a market share of more than 1% of the market were included). The next stage of the study involved a 'data extraction' technique. The quantitative and qualitative data were synthesized and interpreted by sifting, charting and sorting material according to key topics, issues and themes. The data were then collated, summarized and reported. The primary aim was to present a summarized overview of all material reviewed. The secondary aim was to provide a thematic construction in order to present a narrative account of existing MMORPG literature including behavioural excess. Overall, using this approach, the scoping study found that whilst some games had received moderate, or even substantial attention, others have had no research conducted upon them at all. The authors argued that this presented a problem since the growth in both the player base and the industry suggests that a single psychological profile of 'the [video] gamer' cannot be relied upon, and as such further research is required. It was hoped that the study suggested ways forward and helped set research agendas for future research into MMORPGs (including MMORPG addiction).

One of the strengths of scoping studies (including those that use online data collection) is that they can provide a rigorous and transparent method for mapping areas of research (Arksey and O'Malley 2005). Despite such strengths, the nature of scoping studies themselves means there is no attempt to give more weight to one particular source of information over another (mainly because of the lack of academic research). As a consequence, results from peer reviewed academic papers can been grouped with online polls providing descriptive data sets. Whilst this is not necessarily problematic, it does lead to the criticism that there is no assessment of the *quality* of the data. However, these types of limitations are in the nature of scoping studies (i.e., they are descriptive in nature). Arksey and O'Malley (2005) noted that *"the scoping study does not seek to assess quality of evidence and consequently cannot determine whether particular studies provide robust or generalisable findings"* (p.27).

Data Collection via Mixed Methods Online Evaluation

Another innovative way of collecting online data about gaming addiction can be their use in mixed method evaluative studies. For instance, Wood and Griffiths (2007c) evaluated an online help and guidance service for those with gambling addiction (*GamAid*) using the combination of three different types of online data collection (i.e., a mixed methods design utilising an online questionnaire, online secondary data, and online 'mystery shopper'). More specifically:

- The first type of online data accessed was the secondary data of the 413 unique clients (mostly problem gamblers) who accessed *GamAid* during the 2-month evaluation period and collected by the *GamAid* advisors.

- The second type of online data was collected via an online questionnaire from a self-selected sample comprising 80 problem gamblers who had accessed *GamAid* services. An online survey automatically appeared after the client logged off following communication (i.e., on online chat) with an advisor. The researchers utilized online data collection software that automatically coded all responses into a format ready for statistical analysis.
- The third type of online data was generated using online 'mystery shopper' data. This was done in order to obtain first hand experience of how the *GamAid* service worked in practice. During the evaluation period, Wood and Griffiths logged onto the service a total of ten times posing as a gambling addict needing help, or as a person seeking help/ guidance for someone else.[1] The purpose of this part of the evaluation was to get some kind of first-hand understanding of the user perspective of clients interfacing with the service. The evaluation of *GamAid* in this part of the evaluation was therefore necessarily interpretative.

Using this online mixed methods approach, Wood and Griffiths concluded that the service appeared to be one of the few genuinely international guidance and "counselling" services available to gambling addicts. Gambling online was the most preferred form of gambling and gambling location of *GamAid* clients. The service also appeared to be favoured by females more than any other comparable service. Overall, the vast majority of clients were very positive about their experience of using *GamAid*.

The key advantage of using a mixed methods approach online is the opportunity to triangulate the data. In this particular case, the data collected provided a more 'rounded' picture of a guidance service for those with a gambling addiction and those affected by it (e.g., the addict's relatives). A more singular approach would be unlikely to yield such detailed results if only one online method had been used. The major disadvantage is that the use of two different online methodologies simultaneously does not always yield coherent and/or consistent results and may under some circumstances be diametrically opposed. A more practical disadvantage is that a multiple methodology approach tends to be more expensive (in terms of both time and money). However, depending upon the type of question under investigation, the mixed methods approach can be highly beneficial in examining issues surrounding gaming addiction.

Conclusions

The overview provided here demonstrates that the utilization of a variety of online research methods can be a useful and practical way of examining many different aspects of gambling and gaming addictions. Online methods in all their varieties tend to provide a cost-efficient way of gathering addiction data that can have many benefits for both researchers and their study participants. Online gamblers' and gamers' familiarity with Internet technology— whether they are addicted or not—and the anonymity of the media may facilitate and enhance such studies being undertaken. The main disadvantages of online methodologies (such as self-selecting samples, issues concerning reliability and validity) are no different to those encountered in more conventional offline research methodologies. It is envisaged that the application of rigorous online research protocols can help to keep such concerns down

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[1] It should also be noted that all advisors had been aware before the start of the study that the evaluation team would be posing as gambling addicts and that all advisors accepted this as a legitimate part of the evaluation process.

to acceptable levels. In the main, the most salient problems that online researchers in the field of gambling and gaming addiction are likely to face concern ethical issues (such as whether data collected online is 'public' or 'private'). Despite such ethical dilemmas, these are not insurmountable and can be remedied if careful thought is given.

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