Basic aspects of the scope of the term “Internet addiction” – a content analysis study

**JEL codes:** M31, O33, Z13

**Keywords:** internet dependency, problematic Internet use, mental maps

**Summary.** The purpose of this article is to define the term “Internet addiction” by defining associated terms with it and their dimensions that can be correctly applied in social research and to outline the scope of “Internet addiction”. The research is focused on scientific articles published in English language journals that address the problems of addiction to Internet, Internet dependency, problematic Internet use and other terms connected with Internet addiction. This study is focused on the approaches and starting positions defined by authors who have developed the scope of the basic concepts associated with Internet addiction. This study is a part of a comprehensive research project Regulation № 9 of the Ministry of Education and Science in the Republic of Bulgaria. This regulation supports scientific research at universities (NP – 155/2015). This study is based on content analysis. Mental maps are used to describe the meaning of “Internet addiction”. It has not only medical aspects but social ones. It is proved that the problematic internet use has certain negative effects in human behavior and social life.

**Introduction**

Internet takes over all aspects of life – work, education, free time, entertainment, family environment, relationships. The Internet era of the global widespread network started in 1993 (Tuzharov, 2007). According to official statistics (World Internet Users
Statistics, 2015) the number of Internet users in year 2000 are 360 985 492. According to actual data, this number is 3 270 490 584 in May 2015. The growth rate for the period is 806%. The ratio between the Internet users and the population differs in each continent and in each country. The highest values of this ratio are in North America (87.9%). The lowest values are in Africa (27%). The group of active Internet users in Bulgaria constantly increases in the period 2004–2014. The share of Internet users has grown five times in Bulgaria for the same period. The share of Internet users in Bulgaria is 53.7% in 2014. According to information published on the web site of the National Statistical Institute of Bulgaria (NSI, 2015) 70% of people aged below 44 years use Internet. The presented data demonstrate once again the extent Internet is regarded as an integral part of the daily life of individuals and societies. Together with the unarguable benefits of the access to the global network, some problem areas are beginning to emerge:

- Can Internet be harmful to physical health?
- Can Internet be harmful to psychological health?
- Can virtual communications substitute live contacts?
- Can Internet influence negatively the work force in a negative aspect?
- Can low values of GPA at school be a result of excessive Internet use?

World health organizations discuss these questions to find out solutions for effective preventive measures and finding a reasonable balance in human life.

The possibility of finding adequate solutions to counter the negative effects of Internet use are associated with the development of proven (tested and validated) instruments, that record and reveal the state of the problem. The process of developing instruments is associated with a clear and precise conceptual modeling of the studied phenomena. There is an intense discussion on the scope of the problem area in specialized scientific journals in various fields (general medicine, psychiatry, psychology, economics, sociology, etc.). Is also an intense discussion on terms with similar meaning to “Internet addiction”.

This study is a part of a comprehensive research project Regulation No. 9 of the Ministry of Education and Science in the Republic of Bulgaria. This regulation supports scientific research at universities (NP – 155/2015). It is its first phase.

The purpose of this article is to define the term “Internet addiction” by defining associated terms with it and their dimensions that can be correctly applied in social research and to outline the scope of “Internet addiction”.

The research is focused on scientific articles published in English language journals that address the problems of addiction to Internet, Internet dependency, problematic Internet use and other terms connected with Internet addiction. This study is focused on the approaches and starting positions defined by authors who have developed the scope of the basic concepts associated with Internet addiction.

This study is based on content analysis. This method uses the aggregating approach (Hsieh, Shannon, 2005).
1. Research methodology

This study is conducted in several stages. The first stage is connected with a search for scientific publications in English discussing the problems of Internet addiction. The search is performed in several online databases: EBSCO, DOAJ, Emerald Insight and the electronic search engine for scientific publications Google Scholar. The following keywords are searched: Internet addiction and Internet dependence. As a result, 146 publications are found that match the search criteria. These terms are searched within the title of the publication and the keywords given by the authors of the publication. Almost all of them (see Figure 1) are articles in scientific journals. The period of the published articles is from 1996 to 2014. It is noteworthy that until 2004 the usual amount of research in the monitored databases and portals on the problems of Internet addiction is about 2–3 publications per year. Later on, until about 2011, the number of publications on the topic grows to 5–7 per year. Over the past few years the number of research publications reaches 18–20 per year. This is a further evidence of the growing importance of the problem and the need to clear the scope and content of its various viewpoints and scientific fields.

| Type of Source                          | Number |
|----------------------------------------|--------|
| Articles in scientific journals        | 134    |
| PhD theses                             | 3      |
| Reports from different organizations   | 5      |
| Web pages                              | 4      |

Figure 1. Structure of the identified scientific publications by type of source and number
Source: own calculations.

Most of the publications on the problems of Internet addiction are found in scientific journals: Cyber psychology, Behavior, and Social Networking – 15 posts for the period; Cyber Psychology & Behavior – 9 posts for the period; The Scientific World JOURNAL – 4 posts for the period; Computers in Human Behavior and The Turkish online journal of educational technology – 3 posts for the period; Addiction and International Journal of Mental Health and Addiction, BioMed Research International, Cypriot Journal of Educational Sciences, International Journal of human sciences, Internet Research, Journal of Education Culture and Society. It is noteworthy that these journals are oriented to behavioral problems using digital technologies. Some journals are medical ones. 84 journals have published just one article (concerning Internet addiction) during
the surveyed period. The thematic focus of these journals is more diverse – psychology (16 publications), medicine (12 publications), education (13 publications), business and economics (11 publications), society (7 publications), general science (15 posts), informatics and computer science (7 publications), nature (1 post), engineering (2 posts).

During the second stage of this study definitions of base terms are selected. 93 definitions are subject to content analysis.

2. Basic dimensions in the scope and content of the term „Internet addiction” and related terms to it

It is obvious that researchers use different terms when they describe Internet addiction. Three basic terms may be defined – **Internet addiction** (Egger et al., 1996; Beard, Wolf, 2001; Kim Sunwoo, 2002; Terry et al., 2004; Widyanto, McMurran, 2004; Young, 2004; Chou et al., 2005; Morahan-Martin, 2005; Cao, Su, 2006; Pui et al., 2006; Ferraro et al., 2007; Liu, Kuo, 2007; Yang, Tung, 2007; Demetrovics et al., 2008; Zhang et al., 2008; Frangos et al., 2010; Tao et al., 2010; Weinstein, Lejoyeux, 2010; Hinić, 2011; Koç, 2011; Sahin, 2011; Üneri, Tanidir, 2011; Fioravanti et al., 2012; Karapetsas, Fotis, Panayides, Walker, 2012; Zigouris, 2012; Balkan, Adalier, 2012; Kuss, Griffiths, 2012; Lee et al., 2012; Razieh, 2012; Tsitsika et al., 2012; Valsamidis et al., 2012; Shek, Yu, 2012; Ahmadi, Saghafi, 2013; Aydinay et al., 2013; Hsiao et al., 2013; Kapahi et al., 2013; Keser et al., 2013; Lopez-Fernandez et al., 2013; Maree et al., 2013; Jahanian, Seifury, 2013; Rodgers et al., 2013; Sargin, 2013; Shorter et al., 2013; Stavropoulos et al., 2013; Zhang, Xin, 2013; Azadi et al., 2014; Azher et al., 2014; Canan et al., 2014; Musai, Darkesh, 2014; Li et al., 2014; Koukia et al., 2014; Seifi et al., 2014; Simsek, Sali, 2014; Şahin, 2014; Shahnaz, Karim, 2014; Weinstein et al., 2014); **problematic Internet use** (Bulut, 2011; Beard, Wolf, 2001; Singh, Prajina, 2013; Çičekoğlu et al., 2014) and **excessive Internet use** (Smahel et al., 2012; Çičekoğlu et al., 2014). The observed articles contain other connected terms: netaholism, Internet overuse, cyberspace addiction, Internet addiction disorder, online addiction, pathological Internet use, Internet abuse (Frangos et al., 2010; Stavropoulos et al., 2013; Simsek, Sali, 2014; Üneri, Tanidir, 2011; Sahin, 2011; Lopez-Fernandez et al., 2013; Demetrovics et al., 2008; Tsitsika et al., 2012; Razieh, 2012), compulsive Internet use, Internet misuse, elevated Internet use and Internet affinity. We call these terms “additional” because they are met rarely.

All terms (basic and additional ones) are used largely interchangeably. Some researchers use them as synonyms. However there are nuances. The initial impression from reading articles concerning Internet addiction is that many researchers focus on the dominant role of medical aspects – defining Internet addiction as an illness. The American Psychiatric Association (Müller et al., 2013) categorizes human behavior in relation to the use of Internet – dependence, addiction and abuse disorder. APA considers that
Internet Gaming Disorder is a type of disease. This specific disease is viewed in three stages: problematic Internet use, pathological Internet use and Internet addiction.

What is the content of the term “dependency”? 13 publications from 122 discuss only dependency (Young, 2004; Valsamidis et al., 2012; Tsitsika et al., 2012; Musai, Darkesh, 2014; Shahnaz, Karim, 2014). „The analysis of the content of the studied articles shows that when referring to dependency, it comes to illness, uncontrolled impulse caused by the achievement of pleasant feelings that cannot be obtained otherwise except through the object of dependency.” The syndrome of dependency is included in the classification of diseases and problems related to health (Organization, 1992). Most definitions refer to the fact that the term has established itself in specialized publications as referring only to drug addiction, but by the end of the 90s (Young, 2004) some arguments appear that Internet addiction can refer to a variety of objects – gambling and related activities, video games, watching TV, overeating, physical exercises and love relationships. And just this logic underlies the argument that when it comes to the uncontrolled use of Internet, causing harm to mental, physical, psychological and social health of the person, it comes to dependency as a disease (Figure 2).

![Mental map of the derived meaning of the term “dependency”](image)

Source: own calculations.

The specialized literature examines the concept of propensity to “Internet dependency”. There are two types of people: 1) “Internet dependent” and 2) people who may easily become Internet dependent. The dependence on Internet is associated with another aspect of human behavior. The propensity to Internet dependency is calculated using different methodologies and gives a certain probability an individual is willing to be
dependent on Internet. People, who are assigned to the group of dependent people to Internet, in most cases show tension or irritable behavior, if the stay a long time without Internet access. People, who tend to be dependent, are not really addicted, but in the future they may become dependent. In a number of journals the medical orientation of previous research are people with a high propensity to Internet addiction. In this regard it should be noted that several attempts are made to classify people into these two groups – people with low penchant and people with high propensity to Internet addiction. We only mark this fact. There is no consensus among researchers on the methodology for determination this specific propensity. A fact which shows that “Internet addiction” has many aspects that should be explored.

A small part of researchers (identified only by four definitions) speak of “Internet abuse” (Egger et al., 1996; Young, 2004; Morahan-Martin, 2005). Unanimously “Internet abuse” is defined as a milder form of Internet dependence where there is some degree of control by the individual. This is reflected in a greater ability of humans to impose restriction on the use of Internet, and a greater ability to regulate its usage (Figure 3).

![Mental map of the derived meaning of the term “Internet abuse”](image)

Figure 3. Mental map of the derived meaning of the term “Internet abuse”
Source: own calculations.

It is not a question of a diagnostic term used in medicine. The abuse is a prerequisite for the development of the disease the state “dependence”. Unlike the “dependence”, the definition of “abuse” lacks restrictions on the objects of abuse. The main criterion that separates the dependency behavior from the abusive behavior is the degree of control and the ability to place restrictions on Internet use. We mark once again that “Internet abuse” is a rarely used term.
The “problematic Internet use” is another term that is associated with Internet addiction. Within the identified definitions, it is also used rarely (authors that use this word combination are given above). Here there is a richer content. Aggregating information on problematic Internet use the following three directions stand out clearly:

- **The first direction is clearly connected with the medical point of view** – pathological behaviour or a psychiatric condition that is accompanied by intrusive thoughts (in this case the use of Internet) that leads to mental and behavioural addiction and as a result this leads to serious negative consequences on human life. However, this concept is absent from the International Statistical Classification of Diseases and problems related to health, the direction of this dimension is just to name a disease state.

- **The second direction of the “problematic Internet use” is relative to the timeline point of view** – some authors (Young, 1998; Singh, Prajina, 2013) claim, that if a person uses Internet for a long period of time, independently from the activities, it may be stated that he/she demonstrates “problematic Internet use”. This is a very broad definition and in the spirit of the increasing penetration of digital technologies in different aspects of people’s lives, it becomes too critical. In this framework, behavior concerning official duties in Internet and behavior, which refers to the use of the Internet at leisure.

- **The third direction of defining the term “problematic Internet use” is relative to a wider interpretation of human behavior** (Çiçoğlu et al., 2014) – here we treat the importance, that can hardly be classified in terms of the previous outlook. It’s about defining the problematic Internet use as a state (in the sense of a situation where there is someone or something under the explanatory content of the word), causing impaired use of Internet, as well as impairing the ability to control its use. As a result, it faces several problems in human lifestyle, associated with the family, work or learning environment, problems with social life and others. In terms of the fact we do not focus on the medical aspects of this dimension in defining problematic Internet use, it is suitable for use in monitoring the phenomenon in different fields of social sciences. It seems to us, however, it is incomplete and here it can hardly be shaped only the range that can be converted subsequently into a system of indicators.

It has to be mentioned that the analysis of the contents of the definitions of “problematic Internet use” shows a non-medical perspective. It should be studied further and enriched in contents.

In almost 80% of the identified definitions that relate to Internet addiction, the authors use the term “Internet addiction”. It is necessary to make the following statement. As in the term “dependence” the use of the term “Internet addiction” originally referred only to cases where intoxicants are used. And precisely in this sense “addiction” is traditionally accepted in medical circles.
Since the late 90s, however Goldberg in 1995, Young in 1997 and Kendall in 1998 argue that addiction can refer to the use of Internet. These are the three authors who are mentioned (cited) most often in justification of Internet addiction. There is a variety of objects associated with Internet. Each of them may lead to possible addiction (Figure 4).

![Figure 4. Objects, connected with Internet addiction](source: own calculations.)

The addiction may appear to one object or to a combination of objects. Regardless of the controversy surrounding, one of the most widely used dimension in defining “Internet addiction” is precisely identifying it as a disease. More than 70% of the observed definitions express exactly the medical meaning of the term. Within this strand two directions may be outlined. One of them relates to displaying the contents of “Internet addiction” as an addictive behavior and a mental state (about a quarter of definitions, which identify the medical field in the definition of the term) and another – Internet addiction as a relationship (about three-quarters of the identified definitions).

The main words used in the definitions associated with addictive behavior and mental states are: psychiatric condition (mentioned 10 times), abnormal behavior (mentioned 10 times), addictive behavior (mentioned 3 times) and maladaptive thoughts (mentioned 3 times). These behaviors are related to the whole variety of object-oriented, connected to the Internet (Figure 4). Most authors indicate that the objects of addicted and pathological behavior are becoming an important focus in life, resulting in starting to experience a number of negative effects on a person’s life: the exclusion of other activities; reducing social contacts; worsening relations with the loved ones and others. According to (Iravani, Rajabi, Golnari Abbasi, Jannesari, 2013) Internet addiction leads
to hyperactivity, depression, social anxiety disorder. According to other authors (Karabeliova, Ivanova, 2014) Internet addiction leads to misinterpretation of sensations from different sources and this is considered a serious illness. It has been shown (Bolton, 2013) that people who participate in online groups (communities) are more likely to make risky financial decisions.

Much more diverse and numerous is the understanding within the medical field that "Internet addiction" is a dependent behavior (Figure 5).

![Figure 5. “Internet addiction” as a dependency – a mental map](source: own calculations).

More than a half of the studied authors define “Internet addiction” as a psychological dependence. The specialized term used in these cases is an impulse control disorder. This dependence is not related to the use of intoxicants and refers to any activity in Internet. Human behavior is characterized by an impaired mental and emotional state, as well as violations of relationships and interconnections in personal, professional, academic and social life. A similar meaning is found in the definition of “Internet addiction” as an inability to control Internet use. This specific meaning is used by one third of the researchers. It is defined as any compulsive behavior, which is associated with the use of Internet, which is characterized by a psychological and social imbalance.

Internet addiction is interpreted by some authors (Zhou, Li, Zhu, 2013) as “pathological Internet use”. According to them, the pathological use of Internet is a disease state, similar to the alcohol dependence. It is a hardly recognizable disease from a clinical perspective.

About 40% of researchers within this dimension define „Internet addiction“ as a behavioral addiction. This is a dependence on technology that is characterized by mental and physical dependence. We highlight that this is the meaning, associated with disease states.

There is a second direction in the definition of „Internet addiction“. It has a non-medical nature. It is not related to the identification of a diagnosis. About a quarter of authors, who use the term „Internet addiction“, define it precisely in this area. Most researchers define it as a condition (mentioned 8 times) or an irrational behavior (mentioned
3 times). A feature discussed very often is the time spent in Internet, mentioned by almost everyone who defines „addiction“ in this way. Many of them use the word “tolerance” when they characterize this side of behavior. Another characteristic of this condition or improper behavior is mentioned. It is withdrawal from other activities related to various aspects of life (work commitments, study commitments, social commitments and family commitments). And the third sign of an addicted Internet behavior (that is commented in specialized literature) is the focus on Internet-based activities – work related to Internet; mediated social network contacts; games; gambling; sex; information search.

Along with the three attributes it should be noted that a number of researchers (Panayides, Walker, 2012) have concluded that problematic use of Internet is associated with „excessive or uncontrolled use of Internet, leading to injuries or suffering“.

The content analysis (made so far) gives clear aspects on the used term „Internet addiction“ and its scope when it comes to studying the phenomenon in social sciences. We believe that such an orientation is needed because research objectives do not include identifying a disease, but rather the impact on other aspects of life – ways of shopping, work motivation, performance, motivation to learn and many others. Two terms have a definite medical orientation, used as diagnoses – „Internet addiction“and „Internet dependency“. Having in mind the presented features, we are oriented to the use of the term „problematic Internet use“.

In terms of the scope of the content we think that “problematic Internet use” means a condition causing impaired use of the Internet (time spent in Internet, withdrawal from other activities, related to a person’s life, such as work, school, social, family commitments; focus on Internet-based activities), which in turn leads to consequences that have negative effect for the personality.

3. Possibilities for identifying the problematic Internet use – non-medical aspects

All identified studies point to the same signals through which a person can register problematic Internet use. When there is a discussion on identifying signals, we do not cover the medical examination conducted by a doctor. We are talking about situations where we may work with methods of social sciences.

One of the most important features, which are commented by different authors, is the time spent in Internet. Much of the opinions in this direction are conditional – excessively long, long time, too much time. There are, however, some orientations to sizing. For example, Kimberly Young (2004) shows that a stay between 40 and 80 hours per week can be considered as a transfer limit of normal (healthy reasoned) downtime. According to Leonard Holmes (Azadi et al., 2014) anyone who spends more than 19 hours a week in Internet is dependent. Liu and Kuo (Liu, Kuo, 2007) refer to a limit of 38 hours a week, which points to problematic behavior. This means that between 2.5 and 12 hours per day is the interval which may be considered for problem behavior if
build on the positions of these authors. It is important to note that the increased time in
Internet is necessary to be monitored for a relatively long period of time. Jahanian and
Seifuri (Jahanian, Seifury, 2013) comment on this period and they think it should be
within about two months. There is reason for this to be accepted as a criterion for dura-
bility; because episodic gusto in use may be associated with the current conditions that
are not repeated often. On the other hand as we commented earlier, the time perspective
is far from sufficient to identify problematic behavior. We believe that it should only be
considered in relation to the activities carried out in Internet. There are two types of
researchers. The first group deals with the manifestations of problematic Internet use
regardless of the type of activities that take place after being online, for example Ken-
dall 1998 (Valsamidis et al., 2012). The second group of authors, such as Azadi (Azadi
et al., 2014) and Yang and Tung (Yang, Tung, 2007), distinguish between activities that
are work-related, educational tasks, research tasks and all other activities which serve
entertainment, maintaining social contacts and satisfaction (as widely as this concept is).
According to them, problem behavior exists when there is excessive time spent in Inter-
net focusing on such tasks, unrelated to work or study purposes. According to (Frangos,
2012) excessive use of Internet leads to neglecting work and social life and lack of con-
trol over the organization of personal time. According to other authors (Artemis Tsitsika
et al., 2011) excessive Internet use among adolescents leads to a change in behavioral
patterns. Adolescents meet difficulties in developing critical thinking skills and feelings.

From the perspective of the activities in the global network and the time perspective
we have several options. We accept the view that we look at every activity in Internet,
whether related to work or training purposes or for entertainment. In this case we say that
daily use of internet 2–2.5 hours is not a serious problem. This is because we should not
reject the positive effects provided by the global network over a considerable part of hu-
man activities. They can be related to work or training purposes. In this sense, the time
horizon should be sought over 4–5 hours a day, again with conventions, taking into ac-
count the structure of the activities and then monitoring it over a prolonged period of time.

It has been shown (Ozdamli, Beyatli, 2013) that the disposition to addiction
among students and young people is higher than other age groups. The larger is the stay
in Internet the greater is the inclination to addiction. It should be noted that not only the
time spent in Internet is the only factor which can lead to addiction. The tendency to-
wards addiction to Internet depends also on family relationships and the adaptation in
school environment (Chen, Lee, 2013).

In the other case, when just talking about activities related to non-working and
non-educational purposes it is possible to assume a threshold of 2–2.5 hours a day as a
boundary that separates normal from problematic Internet use. Here it is possible to
have a gradation of behavior – up to 1 hour; between 1 and 2 hours; more than 2 hours.
The accuracy of the limit values in the intervals can be commented only after an empiri-
cal verification.
From the analysis above it can be said that the establishment of the experiences of a person with Internet is extremely important to identify problematic use. This includes the structure of use in terms of the types of activities – work, training, forums, chat, social media, news media, gaming, gambling, financial investments or other activities.

The „passion“ in the global network can be identified by the presence of some negative effects in everyday life: neglecting sleep in favor of online activities; neglecting meals; neglecting meeting friends; neglecting communications with family members; neglecting responsibilities (working or educational ones). There should also be reported the frequency of occurrence of these effects in terms of an extended period of time to make the correct judgment of whether here is problematic Internet use or just an accidental accumulation of events.

In some cases negative effects can be found in increasing costs for activities related to the use of Internet. Such activities may be related to problem behavior in terms of online shopping, online gambling, online games (using paid platforms or multiuser games), buying new hardware and other activities related to entertainment.

Certain emotional states can also be signs of problematic Internet use, of course, when combined with previously discussed aspects. Richard Davis (Bulut Serin, 2011) commented that in cases of serious problematic Internet use it can be monitored the acceptance of Internet as a “friend”. Another aspect of the serious problem behavior may be cases where the inability to establish a connection to Internet (technical problems with the speed, interruption of electricity, necessary to carry out other activities) may show emotions such as irritability, excessive anxiety, nervousness, even angry state. The identification of the existence of such situations (whether this is done through self-assessment or evaluation of relatives for the status of the person) may be interpreted as the presence of a certain degree of emotional attachment to the global network.

It should be emphasized again that the commented signs of problematic Internet use should be considered in a combination.

Conclusion

As a conclusion of our research we may summarize:

– when studying phenomena related to the negative effects of Internet within social studies, it is better to use the term “problematic Internet use”,
– the “problematic Internet use” may be studied from different perspectives,
– the scope of the term cannot be limited to a condition causing impaired use of Internet (time spent online, withdrawal from other activities related to a person’s life, such as work, school, social, family commitments, focusing on Internet based activities), which in turn leads to consequences that have negative impact on personality,
– the identification of such a behavior can be accomplished through: observing the experience of people in Internet, including time of use (more than 2.5 per
day when it comes to activities related to working and learning goals and 4–5 hours per day when we do not take into account the type of activities) and carried out activities; ignoring commitments; neglecting sleep; neglecting meals; neglecting friends and family; increasing costs for activities related to Internet; acceptance of Internet as a “friend”; feelings of restlessness, angry, irritability when there is inability to connect to Internet.

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**Cytowanie**

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