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# The Cyberpsychology Factors of Internet Addiction among School Teenagers

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**Abstract**—School period for teenagers can be considered as a challenging and critical stage for them. This is because, at this stage, many teenagers facing a challenge of identity crisis and intend to explore and addicted to the internet easily. Overuse the internet may lead to an individual psychology include mental and emotional. The field of cyberpsychology is the fastest growing technology and closely related to the study of cyber behavior. The goal of the study to examine the relevant cyberpsychology factors which is Impulsivity, Passions, Social Provision that leads into Internet Addiction behavior among school teenagers. Study and understanding the cyberpsychology factors associated with Internet Addiction is important to predict and diagnose the condition of an individual.

**Keywords**—Cyberpsychology, passion, social provision, impulsivity, school teenagers

## I. INTRODUCTION

Exposing on excessive internet use by school teenagers without control give a negative impact besides affect their behavior and might be considered pathological. The excessive misuse of the internet may affect the social development, psychological, biological in negative site [1]. Obsessing use the internet activities, makes them suffered from depression, difficult to complete homework, behavior changes, also academic failure [2]. Unconsciously the using of internet and without control may lead into anxiety and fear on individual by affecting personal development [3] [4]. Internet addiction is reported having slightly negative influence on school teenagers and it caused depression, academic failure, physical and health problem and stress among family, friends, and people surround [5]. The most online activity related to internet addiction among school

teenagers include online gaming, social networking sites (Facebook, Instagram, Youtube, Chat room), cybersex activity (visiting pornographic website) and online gambling (beating on the Internet) [6]. Internet addiction also can be described as disorder activity where an individual cannot control internet use and causes functional impairment [7]. On top of that, it creates psychology difficulties to an individual behavior as well as their emotion. The evolution of psychology perspective in cyberspace offers the study field of internet addiction behavior. Cyberpsychology is the study of human behavior thus the principles of cyberpsychology are in order to understand the psychological impact that cyberspace has on school teenagers [1], [4]. In summary, Figure 1 shows the relationship between human activity, computer activity and the existing of cyberpsychology element between these activities.

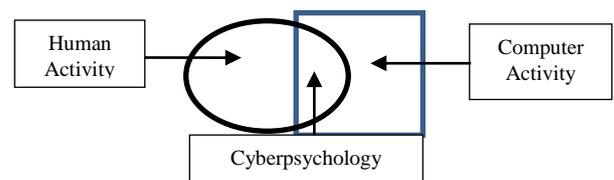


Fig. 1. The relationship between human activity, cyberpsychology and computer activity

Many of previous research study the field of cyberpsychology include behavior in cyberspace, internet addiction, online gender switching, online identity, personality in cyberspace and online relationship [8]. Basically cyberpsychology is a field within applied psychology, focusing on the impact of emerging technology

on human behavior. Due to inability to control the internet usage among school teenagers it caused functional impairment and creates psychological difficulties [7]. Thus, it is important to study and identify the factors related from cyberpsychology perspectives that may explain the behavioral of internet addiction among school teenagers. This research aim is intended to identify the behavioral of Internet addiction among school teenagers and to explore the cyberpsychology factors that are relevant to explain internet addiction behavior among school teenagers in cybersychology perspective. The hypothesis of this research as visualize in Figure 2, promotes by identifying which cyberpsychology factors are relevant to explain internet addiction among school teenagers may lead to the better understanding of psychology in cyberspace perspective involving internet addiction.

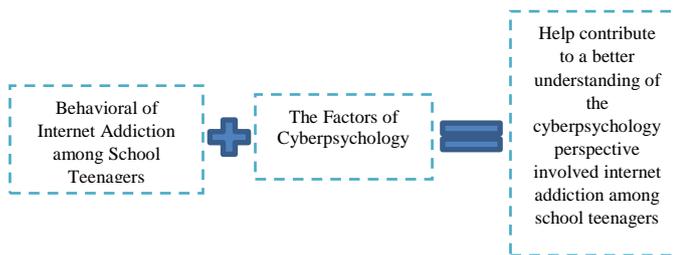


Fig. 2. Main Hypothesis

Study from psychology aspect with behavioral of internet addiction is important to describe and give more understanding of psychology in cyberspace perspective. This is the gap that need to be filled in order to make the information is easy to grab and understandable. Hence the problem of statement of this research is **“Which cyberpsychology factors are relevant to explain internet addiction behavior among school teenagers?”** Thus this research promotes three main objective which is i.To investigate cyberpsychology factors lead to Internet addiction behavior among school teenagers ii.To examine relevant critical cyberpsychology factors lead to Internet addiction behavior among school teenagers iii. To determine the relationship of cyberpsychology factors and Internet addiction behavior among school teenagers.

I. LITERATURE REVIEW

A. The Era of Cyberpsychology

Psychology field has been traditionally introduced based o face to-face interaction with involving verbal and non-verbal language (communication) [9]. However, emerging technologies (Internet, mobile device, virtual reality) modifying the traditional settings and incorporate with the new innovation [10]. The evolution of psychology in the last decades has had a huge impact on behavioral of an individual, groups and relationship. Psychology field gives a powerful view and framework in understanding and also

generating about human behavior. A study conducted by John Joseph Fenaughty, 2010 identified some field of psychology that currently related with the behavior of an individual in cyberspace and the detailed about the methodological approaches from psychology are explained in the Figure 3 below:

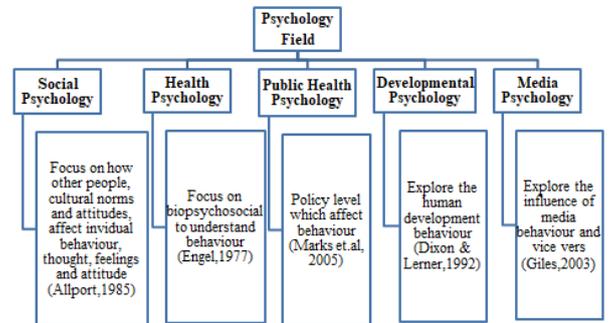


Fig. 3. The methodological approaches from Psychology (John Joseph Fenaughty, 2010)

However, the researcher has been discovered one of the fastest growing area of psychology in cyberspace which study and focus on internet behavior, also study the computer communication. Cyberpsychology is a recent branch of psychology and this field of psychology tries to understand on how the technology can be affected human mind and behavior. Moreover the area of cyberpsychology has been exploded in recent years due to increasing of internet and technologies [11], [12], [13], [14].



Fig. 4. The Psychology Field in Cyberspace

As shown in Figure 4 above, the area of cyberpsychology has been exploded in recent years reflects from increasing the social network trend and communication technologies among group of school teenagers and adolescent [12]. Responding to the situation, the behavior perspective is considered by researcher to identify cyber behavior. Table I show the previous research conducted on variance of cyberpsychology field from previous years.

TABLE 1. PREVIOUS RESEARCH CONDUCTED ON CYBERPSYCHOLOGY FIEL

No	Thesis Title	Author	Year	Scope of Project
1.	Cyberpsychology in Education	Eugenia Kovatcheva	2003	The influence of student psychology and study of user's behavior in cyberspace
2.	Cyberpsychology and Schools: A Feasibility Study Using Virtual Reality with School Children	Carolynn Ann Turner	2013	This study evaluates the feasibility and treatment acceptability of Virtual Reality (VR) technology applied universally in a school setting.
3.	Cyberpsychology: An experimental look at advertising personalization, public policy and public understanding.	Nancy Howell Brinson and Matthew S Eastin	2016	examine the effects of personalized online message delivery, as well as offering practitioners actionable insights  to improve their personalized advertising outcomes.
4.	Evolutionary Cyberpsychology 2.0: Revisiting Some Old Predictions and Posting Some New Ones in the Age of Facebook	Jared R.Piazza and Gordon P.D Ingram	2014	Determined the evolution of cyberpsychology perspective: mating, intersexual competition, parenting and kinship, friendship, personal information management, and trust and social exchange
5.	Cyberpsychology and Affective Computing	Giuseppe Riva and Rafael A Calvo	2014	Focus on how technologies can be used to help people change behavior in both clinical situation and in personal development.
6.	What is Positive Technology and Its Impact on Cyberpsychology	Giuseppe Riva	2017	Determine the "Positive Technology" as a way of framing a suitable object of study in the field of cyberpsychology
7.	Web-based youth communities in the light of cyber psychology	Eugenia Kovatcheva	2004	Focused on web-based youth communities are capable of mirroring the behavior of people in virtual reality

Previous research conducted on cyberpsychology field

**B. The Definition of Cyberpsychology**

Cyberpsychology is a recent branch of psychology published where the main objective field involving the collaboration of human and technology [9].The field of cyberpsychology is the fastest growing technology and closely related to the study of cyber behavior [12]. Cyberpsychology focus on the internet and cyberspace on the psychology of an individual and groups. Many of previous research study the field of cyberpsychology include behavior in cyberspace, internet addiction, online gender switching, online identity, personality in cyberspace and online relationship [15]. Basically cyberpsychology is

a field within applied psychology, focusing on the impact of emerging technology on human behavior. Research conducted by Mary Ailen et.al, 2014 claim that, the area of cyberpsychology study an artificial intelligence, social media, virtual environments, internet psychology, intelligence amplification, digital convergence, gaming also mobile and networking device. According to [16], cyberpsychology is a new term used to define the combination between the virtual world and information technology. Previous research have been defined the meaning of cyberpsychology as the psychology of individual towards the technology, influence of computer and environment. Study the user behavior in cyberspace may describe the meaning of cyberpsychology itself [17]. The cyberpsychology is a combination of two words which is cyber and psychology and the detailed are explained in the Fig. 5.

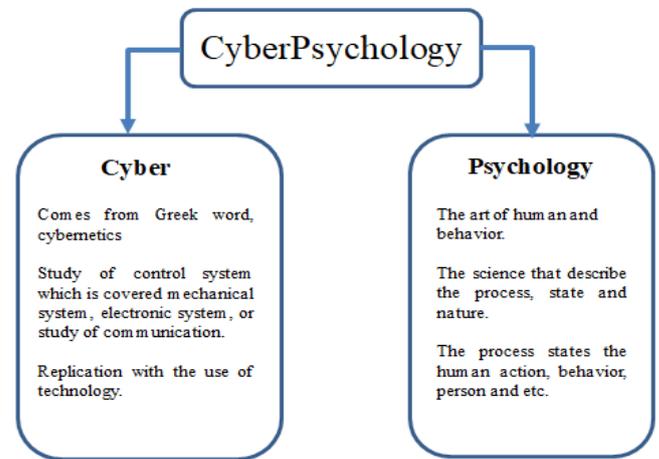


Fig. 5. The definition of Cyberpsychology (Kovatcheva, 2003)

According James (2000) "It studies mind through virtual reality as it evolves on the net." The importance of cyberpsychology on the cyberspace is quite difficult to explain. The cyberpsychology deals with a lot of what drives an individual in a cyberspace, motivates, and catches the attention to what people are looking, seeing, and feeling and goes deeper than that. The importance of cyberpsychology on the cyberspace is quite difficult to explain. It's very complex. However, the cyberpsychology on the cyberspace is to understand what makes people addicted and attracted there. Additionally, every people have different viewed and understanding when online in cyberspace. The different viewed are affected from many factors such as gender, level of age, intention and others. This is where the psychology are took part. Cyberpsychology is the study of human behavior thus the principles of cyberpsychology are in order to understand the psychological impact that cyberspace has on school teenager.

C. *Cyberpsychology Factors*

Understanding the cyberpsychology factors associated with Internet Addiction is important to predict and diagnose the condition of a school teenager [7]. Jonathan Burnay et.al (2015), highlight impulsivity and passions factors to be particularly important to explain internet addiction but this was not for social provision factors. However, the study conducted by Srikant Manchiraju et.al (2016), highlight obsessive passions is positively related to Internet addiction but harmonious passions negatively related to Internet addiction. Additionally, Vallerand RJ (2015) agree that harmonious passion, one chooses to engage in the activity that one loves; with obsessive passion, one engages in the activity that one loves because one cannot help it. Meanwhile, the main point to explained internet addiction marked by high impulsivity [18] [19][20]. Other approach considering cyberpsychology factors such passions, urgency, lack of perseverance, and others factors lead to internet addiction. Table II shows the analysis of cyberpsychology factors that have been discussed by previous researcher.

TABLE II. ANALYSIS OF CYBERPSYCHOLOGY FACTORS

No	Author	Year	Title	Theory	Factors Discussed
1.	Jonathan Burnay, Joel Billieux, Sylvie Blairy, Frank Laroi	2015	Which psychological factors influence Internet Addiction? Evidence through an integrative model	Impulsivity and passion particularly important to explain internet addiction but this was not for social provision factors.	Impulsivity Passions Social Provision Obsessive passions
2.	Billieux, Gay Rochat and Var der Linden	2012	Problematic issues of the internet cyber and self-regulation: A review of the initial studies	Concerning controlled aspects of self-regulation, it appears that persons suffering from PIU are characterized by higher levels of impulsivity	Impulsivity traits Self-regulation Sensation seeking
3.	Vallerand R.J	2015	The psychology of passion: A dualistic model. New York: Oxford University Press	Harmonious passion, one chooses to engage in the activity that one loves; with obsessive passion, one engages in the activity that one loves because one cannot help it	Obsessive passions Harmonious passions
4.	Srikant Manchiraju, Amrut Sadachar, Jessica Ridgway	2016	Passion for Online Social Networking and Internet Addiction: Testing a Dual Theory Conceptual Framework	Harmonious passion is negatively related to Internet addiction and obsessive passion is positively related to Internet addiction.	Obsessive passions Harmonious passions

No	Author	Year	Title	Theory	Factors Discussed
5.	Chia-Yi Wu, Ming-Been Lee, Shih-Cheng Liao, Li-Ren Chang	2015	Risk Factors of Internet Addiction among Internet Users: An Online Questionnaire Survey	Neurotic personality traits, psychopathology, time for internet use and its subsequent life impairment were important predictors for IA.	Personality traits Concentration and attention Neuroticism factor
6.	Lee Hadlington	2017	Human factors in cybersecurity; examining the link between Internet addiction, impulsivity, attitudes towards cybersecurity, and risky cybersecurity behaviors	the measure of impulsivity revealed that both attentional and motor impulsivity were both significant positive predictors of risky cybersecurity behaviours, with non-planning being a significant negative predictor	Attentional impulsivity Motor impulsivity
7.	B.O Unsalver, H.Aktepe	2017	Internet addiction and impulsivity among university students	It found that impulsivity is an important factor for internet addiction as in other types of addiction	Impulsivity
8.	Qiang Chen, Xing Quan, Huimin Lu, Pei Fei and Ming Li	2015	Comparison of the personality and other psychological factors of students with internet addiction who do and do not have associated social dysfunction	Excessive use of the internet can result in low mood, sleep disturbance and etc. These symptoms shows physiological markers of addiction and social consequences of addictive behavior and need to be present to justify a condition as a 'mental disorder	Obsessive-compulsive, Depressions, Anxiety, Interpersonal sensitivity, Psychotics Symptoms
9.	Lafrenière, M.-A. K., Vallerand, R. J., Donahue, R., & Lavigne, G. L.	2009	On the costs and benefits of gaming: The role of passion, <i>Cyberpsychology &amp; Behavior</i> ,12	Obsessive passion was positively related to both time spent playing and problematic behaviors generally associated with excessive gaming (i.e., irritability, agitation, playing as a coping strategy, incapacity to reduce time spent playing).	Obsessive passions Harmonious passions
10.	Lafrenière, M.-A. K., Vallerand, R. J., Donahue, R., & Lavigne, G. L.	2009	On the costs and benefits of gaming: The role of passion, <i>Cyberpsychology &amp; Behavior</i> ,12	Obsessive passion was positively related to both time spent playing and problematic behaviors generally associated with excessive gaming (i.e., irritability, agitation, playing as a coping strategy, incapacity to reduce time spent playing).	Obsessive passions Harmonious passions

No	Author	Year	Title	Theory	Factors Discussed
11.	Wangberg, S.,Andreassen, H., Prokosch, H., Mariavogos Santana, S., Sørensen, T., &Chronaki, C.	2007	Relations between Internet use, socio-economic status (SES), social support and subjective health. Health Promotion International	based on their large sampleof participants ranging from 15 to 80 years of age, showed that themore time users spent on I nternet per day, the greater their perceived social provision.	Social Provision

Analysis of Cyberpsychology Factor

**I: Factors 1: Impulsivity**

The first approach is based on Young (1996) criticisms where pathological gambling criteria are used to define addictive disorder. These statements also agree by Beard and Wolf, 2001 and they maintain that Young’s criteria statement. They also added, it should be consider as an impulsivity disorder if internet addiction is based on pathological gambling criteria. Additionally, Shapira et.al, 2003, proposed internet addiction as an impulsive disorder but it being criticized by some researcher because for being too restrictive. Others researcher such Mottram & Fleming, 2009, Billieux et.al, 2013, Van der Linden, 2010, also argue impulsivity factor influence internet addiction and added some factors such personality traits, motives use the internet and activity on Internet. Impulsivity study conducted by Mottram et.al, 2009; Billieux et.al, 2010 shown lack of two components which is perseverance and urgency and related to internet addiction. Precisely, the evaluation of impulsivity factors done by Flemming et.al, 2009, in their sample of 272 university student by using UPPS Impulsive Behavior Scale proved impulsivity positively related to the internet addiction.

**II: Factors 2: Passions**

Passion is defined as an activity that people like and important for an individual in which they willing to invest money, time and energy. From the previous study, some researcher also agrees that internet addiction classifies as a consequence of obsessive passion [7]. On top of, there are two kinds of passions that can be declared which is obsessive passions and harmonious passions [7]. Harmonious passions refers to an automatic internalization that brings an individual to choose in involve an activity they like [21]. The internalization produces motivational force to engage the activity the like and creates excitement and personal support to pursuit these activities. Moreover, that activity occupies an important place in an individual life, in harmony with other aspect of their life and they feel free involved in the activity. Meanwhile, obsessive passions refers to a controlled internalization that brings an individual creates internal pressure involving activity the love [7], [21]. The internalization are from interpersonal

pressure since they attaches to the activity or the excitement form activity engagement.

**III: Factors 3: Social Provision**

Social provision can be defines as a function that obtained from relationship and this function are needed for an individual to feel supported and avoid loneliness [22]. A study conducted by Jonathan Burnay et. al, 2014, categorize six function of social provision which is guidance, reliable alliance, reassurance of worth, opportunity for nurturance, attachment and social integration. From the previous number of studies indicate whether internet use having a tendency increase the social provision factors or having limited, but the result looks contradictory. A study to measure the time spend on Internet show positive effect of internet use on social provision proved the view having high engagement has to be distinguish from dysfunctional use [23]. Furthermore, a study conducted by Hampton, sessions, her and Rainie (2009), have shown internet user are more confident to interact with people and have face to face contact compared those who do not use internet. Another researcher, Subrahmanyam and Lin,2007, they cannot find any significant relation between time spent on internet per day or parental social provision in their sample of adolescent (average:16years). As summary, Figure 6 provide an information regarding cyberpsychology factors that explain internet addiction among school teenagers.

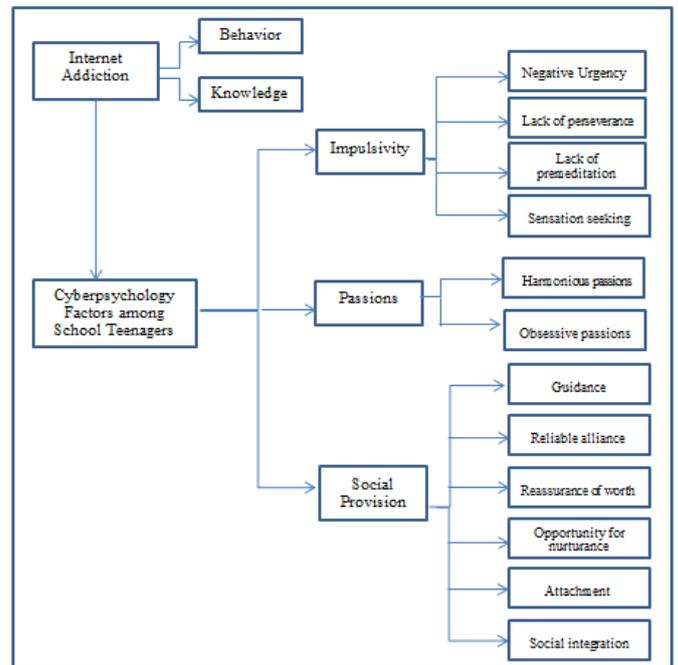


Fig. 6. Summary Model of Cyberpsychology Factors explain Internet Addiction among School Teenagers

#### D. Internet Addiction Behavior among School Teenagers

There was a huge influence of internet's on society. A vast majority of internet usage is dominant by a group of teenagers. This group of "teenagers" is suit with the cyber penetration technology in young people daily life. For the past few decades, Malaysia experienced of a flooding variance new media and becoming part of contemporary teenager's lives. These internet media platform are preferred by teenagers because its promise a fun, exciting and imaginative. School teenagers prefer online profile platform through social such *Twitter, Facebook, Instagram, YouTube* which provide an interaction in making a new friends, post photo, chat, and text in cyberspace [24]. Additionally, the researcher identify the growing of internet usage in Asia are closely related to the internet addiction and becoming serious issue in certain Asia countries [25] [26]. Due to the internet addiction issue, Korea, Japan and China take an alternative ways by held up the boot camp in providing systematic therapy meanwhile China take a drastic action by begin to ban new Internet cafe in their country[26][27]. Previously, many research conducted on the related problems regarding the effect and impact of internet usage without control. There are five top impact that currently discussed by previous researcher such as internet addiction, cyberbullying, cyber harassment, pornography besides could give a huge impact on educational and society.

According *The Malaysia Times* (2013), negative effect such misuse of social media, depression, suicides and death is a subsequently result of internet addiction and internet related problem. Furthermore, addictive to the internet becomes a problem to the worldwide mainly to the group of school teenagers which is still enjoying their part of student life. There are many previous research paper highlighted about addiction to the internet among student all over the world countries and more discussing on the negative impact of internet usage [28] [29][30]. One of the negative impact due to the internet addiction activity is the relationship getting further from people surrounding includes parent, family and friends. Some physical problems result includes headache, migraine, and disrupting of sleep pattern. Next, teenagers involving with addictive of internet may suffered from psychological problem such unstable of emotions and the way of thinking. In short, the performance of teenagers may affect due to uncontrolled internet usage to their interpersonal problem, behavioral problem, physical problem psychological problem, and work problem [26][31]. There are important to understand the behavior and problem arise among teenagers, thus it can be better equipped to guide the teenagers on internet usage and avoid from falling into risks and danger situation. Different studies conducted by Kesarapon Wanajak, 2011, diagnose ten behavior problem criteria and it is identified from the Delphi panel among Thailand secondary school. These behavioral problem listed by Kesarapon Wanajak revealed that the

relationship of psychology impact on secondary school teenagers toward internet use in their daily life.

## II. CONCLUSION

In sum, this paper presented a literature review of cyberpsychology factors of internet addiction among school teenagers. The main scope of this research targeted the school teenagers groups, thus the relevant factors must be filtered to explain the exact factors that contribute into internet addiction among school teenagers. A vast majority of internet usage is dominant by a group of teenagers. This group of "teenagers" is suit with the cyber penetration technology in young people daily life. For the past few decades, Malaysia experienced of a flooding variance new media and becoming part of contemporary teenager's lives. Additionally, these study help in contribute to a better understanding of the cyberpsychology factors involving internet addiction among school teenagers. On top of that, study and understanding the cyberpsychology factors associated with Internet Addiction is important to predict and diagnose the condition of an individual. From the literature study, it found that passion, impulsivity and social provision are particularly important to explain internet addiction among school teenagers.

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