2.2. LITERATURE REVIEW

The New Virtual word creates new words or a new sense of some words. The new information technology paradigm provides the basis for its pervasive expansion throughout the entire social structure. The deals between virtual world and real started when Internet becomes public – more than 10 years ago. Ritterband, Gonder-Frederick, Cox, Borowitz, West, and Clifton (2002) discussed that the new means have been introduced and new terms described. The *cyberpsychology* is one of them. It is the study of the influence of computers, technology and virtual environments on the psychology of individuals and groups.

The main questions of this study are oriented to the motives, attitude and changes in students' behavior working in Cyberspace, using the Internet, i.e. the influence of the Net on the psychology of students – as individuals and as groups. It means that study questions relate to the research area of cyberpsychology. For this reason we will give some definitions, dimensions and features of Cyberpsychology. The common motives for using the Internet and distinguish behavior changes described in the literature.

2.2.1. DEFINITIONS

Let consider several definitions about the Internet from psychological point of view. *Cyberpsychology is the study of the influence of computers, technology and virtual environments on the psychology of individuals and groups* (Suler, 1998).

As progress towards the future, the human being is beginning to have a different relationship with computers. As Sherry Turkle (1997) wrote in her book "Life on the Screen"**,** "we are seeing computers not as a mere calculation machine, but a source of communications, networking, word processing, etc." With the emergence of the Internet, people have created a parallel universe - Cyberspace, where they have created virtual reality. This is where the users, through their computers, access the Cyberspace. As James (2000) puts it, *Cyberpsychology is therefore the study of user's behavior in cyberspace.*

For better understanding of this term is necessary to determine Cyberspace. It is the place examined by cyberpsychology. The term *Cyberspace* is originated by William Gibson in his novel NEUROMANCER (1984) who states that it is: "A consensual hallucination experienced daily by billions of legitimate operators, in every nation, by children being taught mathematical concepts... A graphical representation of data

abstracted from the banks of every computer in the human system. Unthinkable complexity: Lines of light ranged in the non-space of the mind, clusters and constellations of data. Like city lights, receding..."

The *Cyberspace* according to Encarta® is:

1. *imagined place* where electronic data goes: the notional realm in which electronic information exists or is exchanged an e-mail message lost in cyberspace
2. *virtual reality:* the imagined world of virtual reality

Down we give one circumstantial definition of cyberpsychology, according Encarta®, as an combination of two words:

- *cybernetics*, from the Greek word *kubernetes* (meaning steersman) [Coined by the U.S. mathematician Norbert Wiener (1894\endash 1964).], is defined as:
- study of automatic control systems: the science or study of communication in organisms, organic processes, and mechanical or electronic systems
- replication of natural systems: the replication or imitation of biological control systems with the use of technology
- and, *psychology* is defined as:
- the science of the mind or of mental states & processes; the science of human nature.
- the science of human and animal behavior.
- the sum of the mental states and processes of a person or of a number of persons, esp. as determining action....

Composed these two definitions, the following definition is synthesized:
Cyberpsychology is the study of the individual's psyche:

- *while engaged in communication through a computerized medium,*
- *when incorporating the use of the computer medium into other aspects of his/her life,*
- *in regards to how the individual learns to use the computer and grows with experience,*
- *in how s/he develops socialization and identity through use of computerized communication,*

- *the ability and knowledge to create our own Virtual Reality in Cyberspace*
- *the ability to access something in Cyberspace (it deals with our motivation, thoughts, feelings, emotions, and visualization – our psychology)*
- *and, in regards to how changes in society, because of computerized communication, affect him/her.*

Cyberpsychology does not need to apply to those who are actively involved in Cyberspace only. Since the Internet has become more popular, as more people learn its benefits and how to use it, on-line activities and references to them are becoming much more widespread. Because of how the Internet is pervading the lives, Cyberpsychology has applications outside of pure Cyberspace realms. According James (2000) "It studies mind through virtual reality as it evolves on the net."

The cyberpsychology deals with a lot of what drives, motivates, and catches the attention to what people are looking, seeing, and feeling and goes deeper than that. Unbeknownst to the majority, there are so many psychological aspects to clicking on links, creating web sites, interacting in chat rooms, and other actions in Cyberspace. In this study we would like to identify just the drives, motives and so on for that we refer our attention to the cyberpsychology.

The importance of cyberpsychology on the Cyberspace is quite difficult to explain. It's very complex. However, the cyberpsychology on the Web is to understand what makes people addicted and attracted there. The people make a difference -how the sites are viewed and understood. Everyone, to a certain degree, is somewhat involved in building and creating cyberspace and everyone is involved in cyberpsychology. As Haraway (1991) puts it, **"...**if they are not already aware of this field of study, ought to learn about Cyberpsychology are those involved in creating web sites, selling on-line, or anyone who wishes to be noticed in cyberspace. Since Cyberpsychology can offer many insights to how people respond to web page designs and the type of information contained." The interest doesn't lie in just the observer, but also in the ones that are being observed. Anyone who owns a computer and has access to the Internet is in their own way showing interest in understanding cyberspace and virtual reality (even if they don't consciously realizes it). The interest lies in the action and reaction of something**.**

Cyberpsychology is the study of human behavior thus the principles of cyberpsychology are in order to understand the psychological impact that Cyberspace has on people. According James (2000), there are three main factors – affective, cognitive and sensorimotor.

Affective factors

The emotional and motivational factors of a person while he/ she is in Cyberspace. What types of emotions do people in cyberspace experience? Are there norms for the types of emotions experienced for specific situations? What motivates people to be involved in cyberspace? These are some of the questions that need to be answered as cyberspace expands and becomes a major component of society at large. The affective factors in cyberspace can also generalize into the person's emotional and motivational state in the "outside" world.

Cognitive factors

How do people think in cyberspace? Are there organizational patterns in the patterns of thinking? Creating a virtual reality and virtual presence of themselves on the Internet is important in understanding where they are within the Cyberspace – as individuals or as a group. Some of the topics covered in Cyberpsychology are Identity Shifting/ Dissociation, Virtual Reality, On-line Community, and relationships on the Internet, status on the Internet, acts of clicking, on-line presence, and more. Cyberpsychology has a great resource for studying the cognition of people, because *Cyberspace is equivalent to the human mind. People are interacting exclusively with their minds through the Internet.*

Sensorimotor factors

The least important factor involved in the interaction in cyberspace. There are practically no sensorimotor factors involved when people interact over the Internet. Everyone is seated in front of a computer screen and is either using a mouse or a keyboard to input or receive information. However, the implications of *the absence of sensorimotor factors* in the interactions of people will become *very significant as more people use the Internet as a communicating device*. The cyberpsychology deal with the human mind inside and outside of cyberspace.

Very important is to understand what's involved on the Internet, the experiences and situations that occur on the Internet, and how they can experience and view their on-line personalities. The Identity on Cyberspace and the creating a virtual reality, virtual presence, and creating groups (on-line communities) lead to understanding of human behavior on the cyberspace (the cyberpsychological aspects).

Identity

The most important is identity on the Internet. How people would like to be understood, look like? There are people who use the Internet under assumed identities. There are no sensorimotor factors then individuals do that to keep themselves anonymously from other people. Some take on assumed identities to hide their true selves or because they want to experience what it's like to be an opposite gender on the Internet. The identity changing (shifting/ dissociation) is the main “attraction” of the Net for most of the people especially in chat rooms and messengers or other one to one conversations. A life in another’s shoe is enticing to express hidden sides of own imagination. The target group of this study is the teenagers from Bulgaria. It is important for them for them age and it is a part from the observation -the behavior on the Internet – students’ performance, dependence, and motivations.

Virtual Reality

Virtual Reality exists in the cyberspace and NOT in the real (material) world only. It is different because like dreams (Suler, 1998). There is possible to create the atmosphere, settings, and visualizations of what you want and wish to view. Virtual reality is a generic term in which reality itself does not exist. It is too small or too large to present, or it is too difficult or too expensive to betray. Real world event may not be accessible because it is too far in space or it does not exist at present. To present all this information to the real classroom or a virtual classroom in which learning can takes place without the need to be in class during the working hours of the day, we need a virtual reality system.

In the realm of education, technology offers educators the opportunity to move away from instructional strategies that focus on presentation of abstract information to the passive learner to an active process in which meaning is developed on the basis of experience (Kommers, & Zhiming, 2001). In the constructivist view, the learner is building an internal representation of knowledge and a personal interpretation of experience. Neither meaningful construction nor authentic activity is possible if all

relevant information is pre specified. What is meaningful is the development of learning environments, which encourage construction of understanding? Multiple perspectives: This is in contrast to the typical school environment where the goal is to transfer knowledge to the learner in the most efficient, effective manner possible. This study is oriented to identification of elements that gain students' attention in the Internet and provoke them motivation to visit and create on or other virtual reality in cyberspace.

The human being cannot create or visualize what virtual reality is – it is mind creativity, artistic ability, and imagination – the virtual place where people are happy and satisfied. The fact is that when people use computers they are having an exchange with other humans, through the machine, not with the machine. The computers are convenient and powerful extensions of the human mind and every characteristic of the mind can be expected to show up as a property of cyberspace. The relationship between Cyberspace and the mind is a dual process (James, 2000). The computer provides people with the technology to visualize other people's thoughts, feelings, emotions, creativity, imagination, artistic ability, and spirituality in a way that they wouldn't ascertain from the others. Computers are giving the people a chance to view and visit people from all over the world. It takes people with the common interest to make cyberspace a comfortable and sociable place to relax, visit, socialize, and interact with people in it.

The virtual world is quite different than the real. Digitizing people, relationships, and groups has stretched the boundaries of how and when humans can interact. Suler (1998) explores some of the *psychological features of Cyberspace* how people behave in this new social realm. In different on-line environments there are different combinations of these features, thus resulting in a distinct psychological quality to each environment that determines how people experience themselves and others. These features may be considered as the *fundamental elements of a conceptual model for a psychology of cyberspace* **-** reduced sensations, identity flexibility, altered perceptions, equalized status, transcended space, temporal flexibility, social multiplicity, and media disruption. The basic psychological features of Cyberspace shape how *people and groups behave* in those realms. On-line behavior will always be determined by how those features interact with the characteristics of the people in those environments. A variety of systems might be useful in classifying those

characteristics. The focus is on specific features of the user, such as the *person's computer skills, goals for using the Internet, demographic characteristics* (age, social-economic status, occupation, etc).

2.2.2. PSYCHOLOGICAL DIMENSIONS

When the human behavior on the Internet is considered, it has to take into account that Internet is not just one environment, but several. The Cyberspace can influence the way people behave, sometimes for the better, sometimes not. Suler (1998) explores the psychological dimensions of environments created by computers and on-line networks. It is intended as an evolving conceptual framework for understanding the various psychological components of cyberspace and how people react to and behaves within it. People's on-line behavior becomes part of the Internet's psychological environment for others, creating opportunities for shaping the way of new territory for human interaction.

There are four psychological dimensions according Suler (1998), James (2000) – *the basic psychological qualities of Cyberspace, Psychology of the Individual in Cyberspace, Psychology of Cyberspace Relationships, and Group Dynamics in Cyberspace.*

The Basic Psychological Qualities of Cyberspace

This dimension includes the Cyberspace as a psychological space and its basic psychological features discussed above as well as Cyberspace as a dream world, coping with spam, and Black Hole (no interactivity) of Virtual world.

The people have witness they are conscious and/ or subconscious mind into the world of Cyberspace (Turkle, 1997). The conscious mind is needed to motivate and drive people into doing what are wanted to do on the Internet. The subconscious mind is needed to create an atmosphere within the mind as to what people want to experience and visualize from the Internet. This describes - what people do and do not like in a particular place that they visit.

According to Leon James (1999), "Interests and intentions define and reveal mind." It acts of clicking creates an atmosphere of links and/or clicks that are visited. Meaning that the clicks/ links create person virtual reality on the Internet and gives the ability for visualizations and feelings. The significance of knowing the people on the Internet gives the ability to visualize and experience them intentions and motivations during the time that they spent searching on the Internet.

The Psychology of the Individual in Cyberspace

> "We live in the digital age! Analog thinking is inappropriate in so many areas of life ... A digital device deals with ones and zeroes. There is no in-between, no range of adjustment, no third way." (Fukyama, 1993)

The psychology of the Individual in Cyberspace has to be considered in two ways – first the psychology of human – computer interaction and second – how person identify him/ herself in the Cyberspace.

Human-Computer Interaction

Now, let describe a phenomena human-computer interaction. According Turkle (1997) there is a set of boundary negotiations, telling the story of the changing impact of the computer on human psychological lives and human evolving ideas about minds, bodies, and machines. The emerging is a new sense of identity--as de-centered and multiple. The trends in computer design, in artificial intelligence, and in people's experiences of virtual environments are a dramatic shift in people notions of self, other, machine, and world.

The computer emerges as an object - as role-playing games on the Internet can develop a way of thinking in which life is made up of many windows and real life is only one of them. The players discover also that the idea they are a unified self is also another fiction. Turkle (1997) asserts *the personal computer is an "object-to-think-with"* for understanding the change computers are inducing in our minds.

The analyses of human behavior in a variety of contexts that range from the all-familiar email, to synchronous or asynchronous, graphical or textual communication environments and the specificity of on-line contexts, as well as the similarities between human behavior, on-line and offline. The web users' behavior and the ways in which it affects other participating *among the different electronic* environments available change, too.

In human-computer interaction the important role is *transfer to computers and cyberspace*, addiction to computers and cyberspace, regressive behavior in cyberspace and integrating on-line and offline living. There are several levels of Internet counseling non-interactive, information on mental health, self-help resource materials, helping and referral agencies, provider lists (referrals) and interactivities:

synchronous and asynchronous chats, support chat groups, e-mail, testing and assessment, e-mail counseling, audio plus whiteboard, full audiovisual real –time. More and more software becomes commercially available enabling people to build their own personal representatives. As bandwidth increases and compression becomes better as on-line virtual worlds grow to become more than real.

Individual identification

Personality types in cyberspace and Identity management in cyberspace was discussed above as the most important features of cyberpsychology. It relates to the unique roles in cyberspace, and on-line gender-switching. The phenomenon anonymous on the Web leads to feeling of freedom on the cyberspace.
The people use the Internet then individuals do that to keep themselves anonymously from other people. Some take on changed identities to show new personality because they want to experience. The identity changing is as an "attraction" of the Net for most of the people.

The Psychology of Cyberspace Interpersonal Relationships

The normal social constraints and conventions of face-to-face meetings are left behind. There are in-person versus cyberspace relationships, transient and long term on-line relationships - e-mail or chat communication and relationships. The identification on the Internet mentioned for the second psychological dimension relates to this one – cyberspace interpersonal relations because in one relation is important human performance. People in a face-to-face meeting have a sensorimotor factor (it was described above) for the person in front. In the cyberspace this factor does not exist and individuals just react to the written text and pictures. In cyberspace, there is and transference among people on-line and ways to resolve conflict on-line. In the interpersonal and inter-group (this one relates to the forth dimension group dynamics) behavior according Wallace (1999) there are the possibility of assumed anonymity and actual physical distance between web participants. These lead to positive or negative behavior as on-line friendships and romances discussing, or the psychology of aggression

Group Dynamics in Cyberspace

The dynamics of group behavior on-line - the psychological phenomena of conformity, polarization, conflict and co-operation occurring in mailing lists, e-mail traffic, news and discussion groups and chat rooms. People increasingly make the

sorts of explorations and the social impact of such explorations may turn out to be enormous. Turkle (1997) distinguishes two possibilities first - isolation, alienation of the users, and second - no longer live in isolated, people become more flexible, being able to interact successfully, in team efforts, with people who are very different from them.

In other words the group dynamics in cyberspace relate to On-line-communities. They are described according Preece's (2001) theory.

On-line Communities

Let consider the phenomenon on the Internet - creation of the people groups – On-line communities. Following the Preece's (2001) definition for an *On-line community* as a group of people who meet together on-line. It has four components:

- *"People"* - people and how they communicate;
- *"Purpose"* - people's needs and purpose for communicating;
- *"Policies"* - people behave and established policies to guide behavior;
- *"Software"* - support the interaction and influences people behavior.

There are different emphases, depending on who talk with, and they may be placed on each of these four components. The balance is needed with perspective that takes account of all components.

Characteristics of On-line communities

Preece (2001) says "Most important remember that a community is more than just software, *a community is organic*, it evolves and changes over time. Your job as a developer or moderator is to support that evolution by working with the community to understand what it needs." One on-line community is concerned to be:

- *Sociability* - it is supporting social interaction on-line – purpose – of community, the people involved in it and the policies of community - does their need to be scope for private communication, do people want to exchange personal information and how can that be made secure.
- *Usability* - it is how the software is designed to make it usable by the intended users, i.e. makes it controllable – user is in control, predicable to use, intuitive, and memorable. Usability relates to ease-of-use navigation, access, information design, and dialog support. *Usefulness* relates to relevance; do the functions, information, etc. match what the user actually needs.

2.2.3. MAIN FACTORS – MOTIVATIONS, NEEDS

The purpose of this study is to examine motives for using the Internet from pragmatic and entertainment point of view, to consider how certain antecedents and perceptions of media attributes affect motives, and to examine how motives and antecedents affect attitudinal and behavioral outcomes. To distinguish main factors have to consider human behavior from psychological point of view and what Cyberspace offers to the users in which manner and how this influence the behavior in the psychological dimensions: Human-Computer interaction, individuals, relationships, and Group Dynamics in Cyberspace. People use computers to gratify:

- *interpersonal needs* - Papacharissi, & Rubin (2000), and Eighmey, & McCord, (1998) distinguish three types of them inclusion, affection, and control and six motives for interpersonal communication - pleasure, affection, inclusion, escape, relaxation, and control
- *needs traditionally fulfilled by media* (social interaction, pass time, habit, information, and entertainment)
- *other needs* (time shifting and meeting people), which are fulfilled by new media.

Have to take into account that there is difference between face-to-face groups and computer-mediated groups as was describe above. Face-to-face groups did not express greater intimacy than computer-mediated groups. The mediated interaction is rarely impersonal. The computer-media communication is interpersonal when users have the time and interest to interact on a relational level and the computer-media communication is hyper-personal when users can manage relationships and impressions in ways more effective than with face-to-face communication to other mediated channels.

Patterns of exposure or use and attitudes are also relevant to study of the Internet. Communication satisfaction is a communication outcome that is related to fulfilling our expectations through interaction. Motivation and skills predicted communication satisfaction. The attitude and exposure are important correlates of media use and uses-and-gratification are use in this study for identification of the motives for using the Internet; antecedents and media perceptions relate to the motives; and how to predict behavioral and attitudinal outcomes of Internet use.

In this chapter was present the background of the study – from one side the country in focus – Bulgaria with its demographics, political, economical characteristics and

educational system. From other side there were determine – Cyberpsychology – the study in relation with our work, and the psychological qualities of Cyberspace, psychology of the individuals, relationships, and group dynamics in Cyberspace - the framework.

In next chapter will be described the researching model and instrument of this study. They related to the correlation of media - attitude and exposure and uses-and-gratification for identification of the motives and behavioral and attitudinal outcomes but from design point of view – developing the often-visited Learning Webs using the cyberpsychological dimensions and technological “tricks”.