

What Educators Have To Know On Cyber Behaviors Of 21st Century Learners?

Mehmet FIRAT

*Open Education Faculty ,Department of Distance Education
Anadolu University, Turkey
mfirat@anadolu.edu.tr*

ABSTRACT

Growing impacts of Internet and computer technologies on learning process of nowadays' students led to a re-discussion of teachers' skills. Cognitive overload, disorientation, hyper-connectivity, internet addiction and cyberbullying are some examples of learners' cyber behaviors. Teachers have important difficulties in understanding these new behaviors. The growing gap between teachers and learners has led to the emergence of new problems between students and educators. However, these critical issues are not included extensively in teacher education process. Because of the new generation of teachers is in a key role in building 21st century education, this topic has an immediate priority. In this context the purpose of this study was to determine the necessary skills of teachers to manage the cyber behaviors of 21st century learners. As a result of the study recommendations were presented for educators on cyber behaviors of 21st century learners.

Keywords: 21st century learners, cyber behaviors, educators

INTRODUCTION

Advancements in information and communication technologies at past three decades have effected learning in different ways. Instructional technologies including multimedia learning, e-learning, online learning, hypermedia learning, game based learning, networked learning extended learning types for 21th century learners. Parallel to these developments, educational practices evolved to digital environments. Growing impacts of Internet and computer technologies on learning and instruction process of nowadays' students led to a re-discussion of educators' skills for 21st century education.

Besides the internet complexity driven problems like cognitive overload, disorientation and attention problems, it is possible to mention many other psychological, cognitive and social cyber behaviors like internet addiction, bullying, pornography, abuse, privacy as well. New literacies, hyper connectivity, multitasking, digital citizenship, global awareness can be listed as cyber behaviors of 21st century learners. Because of the different positive and negative effects of these behavior it is better to categorize these cyber behaviors in accordance to their field. In this context, cyber behaviors of 21st century learners analyzed under three topics.

- Psychological Cyber Problematics
- Cognitive Cyber Problematics
- Social Cyber Behaviors

These three type of cyber behaviors examined here. Psychological cyber behaviors that have potential to effects 21st century learners are provided in Figure 1 below.

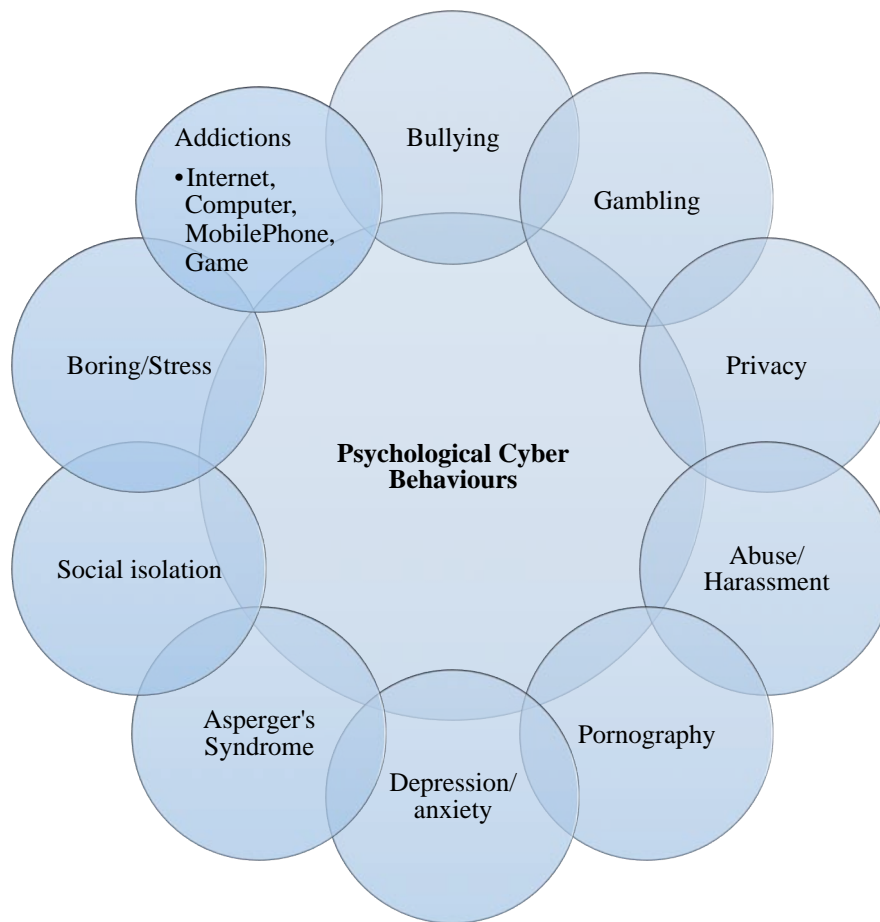


Figure 1. Psychological cyber behaviors of 21st century learners

As can be seen on Figure 1, it is possible to discuss different kind of cyber behaviors which have psychological effects. Here in this study addictions, bullying, gambling, privacy, abuse/harassment, pornography, depression/anxiety, Asperger’s syndrome, social isolation, boring/stress covered as psychological cyber behaviors of 21st century learners.

The flexibilities provided by Web-based learning environments may cause significant problems for learners because flexibility increases complexity. Among the most important problems that occur due to this complexity of Internet are those related to divided attention (Kane & Engle, 2000), cognitive overload (Mayer & Moreno, 2003) and disorientation in hypermedia (Dias & Sousa, 1997; Firat & Kabakçı, 2010). Some of these cognitive cyber behaviors provided in Figure 2 below.

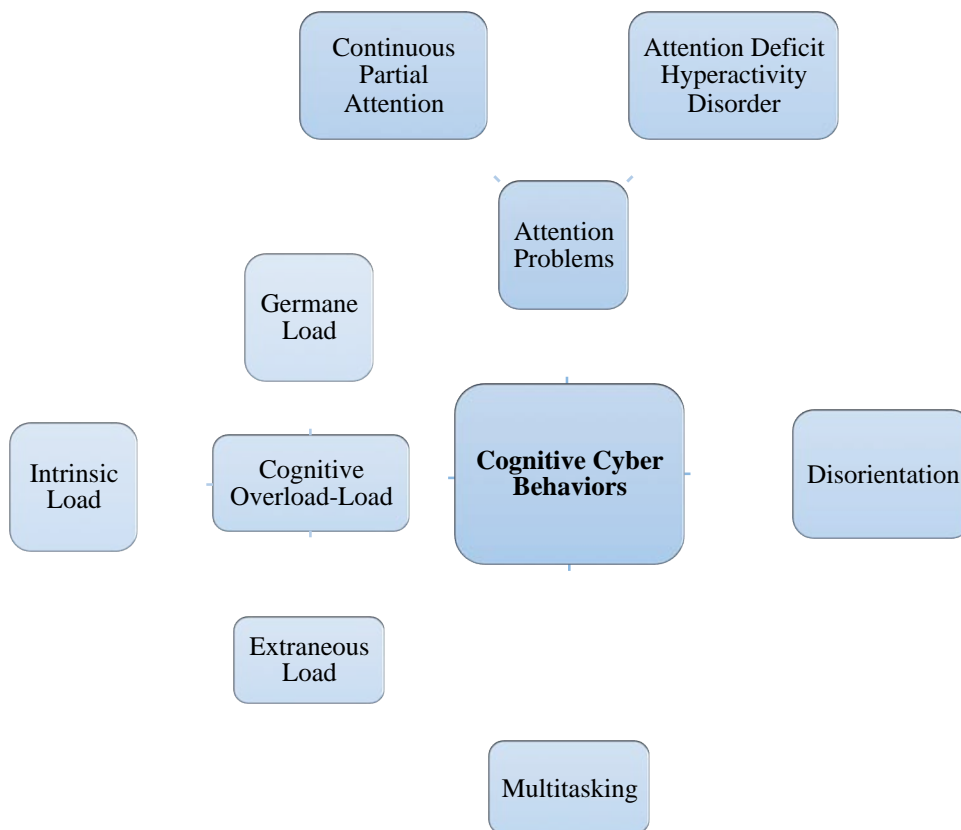


Figure 2. cognitive cyber behaviors of 21st century learners

Among the most important problems that occur due to the complexity of Internet are those related to cognitive overload. Cognitive load can be defined as mental sources used in a memory that works simultaneously. People can process 7 units of information in average at a time in a working memory. Disorientation is defined as a situation in which due to cognitive overload and to the complexity of the environment, learners do not know where they are or how they can reach the place they want. In other words, disorientation means that learners are not aware of their places within the whole structure and do not know how they have reached that place and how and where they will go. Attention also is a problematic cyber behaviors of new learning environments. Final behavior is multitasking. Discussed as a myth in recent years multitasking also covered here in this study as cognitive cyber behavior.

In addition to psychological and cognitive cyber behaviors it is possible to add a category of social cyber behaviors for 21st century learners. The development and spread of digital media also has led to the expansion of existing maladaptive behaviors such as bullying, gambling, pornography and pedophilia. Social cyber behaviors that are related to 21st century learners are given in Figure 2 below.

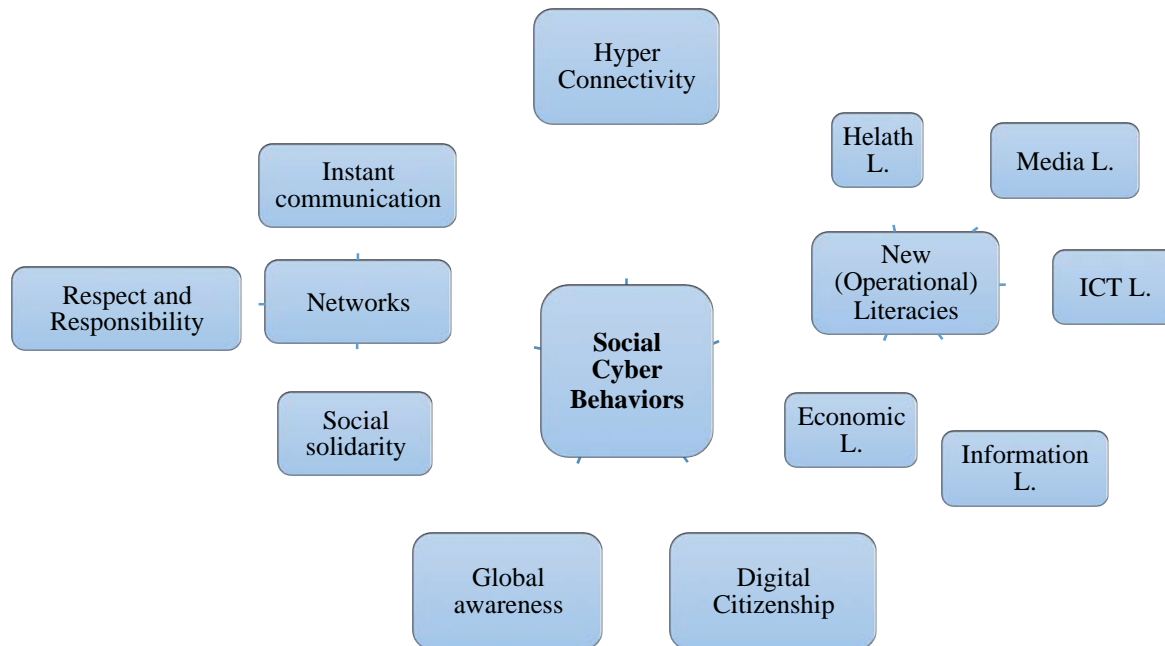


Figure 3. Social cyber behaviors for 21st century learners

In the new era, required skills and needed human profile have been changed. In the current information age, needed human profile cover keep track of updated technologies, production-sharing-use of the information skills, lifelong learning and self-learning skills, critical and creative thinking skills. All these skills require a continuous learning, e-learning abilities, open and distance learning opportunities and different kind of literacies such as information literacy, media literacy, computer and internet literacy (Firat, 2012).

It is obvious that educators have and critical role to educate students with new era required skills and abilities in 21st century. In this context, educators also need to have new skills and abilities to understand 21st century learners. Thus, educators will be able to cope with new cyber behaviors of learners. At this point it is open to research to investigate what educators have to know on cyber behaviors of 21st century learners?

Purpose

The main purpose of this study was to determine the views of academicians on what educators have to know on cyber behaviors of 21st century learners.

METHOD

In accordance with the research purpose academicians' views collected from ResearchGate (www.researchgate.net) academic sharing platform by an open ended question "What Educators Have to Know on Cyber Behaviors of 21st Century Learners?". Totally 1769 answers collected from the online environment. Funded in 2008, mission of ResearchGate is to connect researchers and make it easy for them to share and access scientific output, knowledge, and expertise (ResearchGate, 2016).

In the data analyze process, 531 missing (repeated and unrelated) answers was excluded from analysis. Content analysis procedures were applied to the 1238 answers of academicians. Content analysis procedures were applied to the answers given to the question. Leximancer text analytic tool used in data analyze and visualization. Leximancer is a text mining software that can be used to analyze the content of collections of textual documents. This software can also be used to visually display the extracted information in a browser.

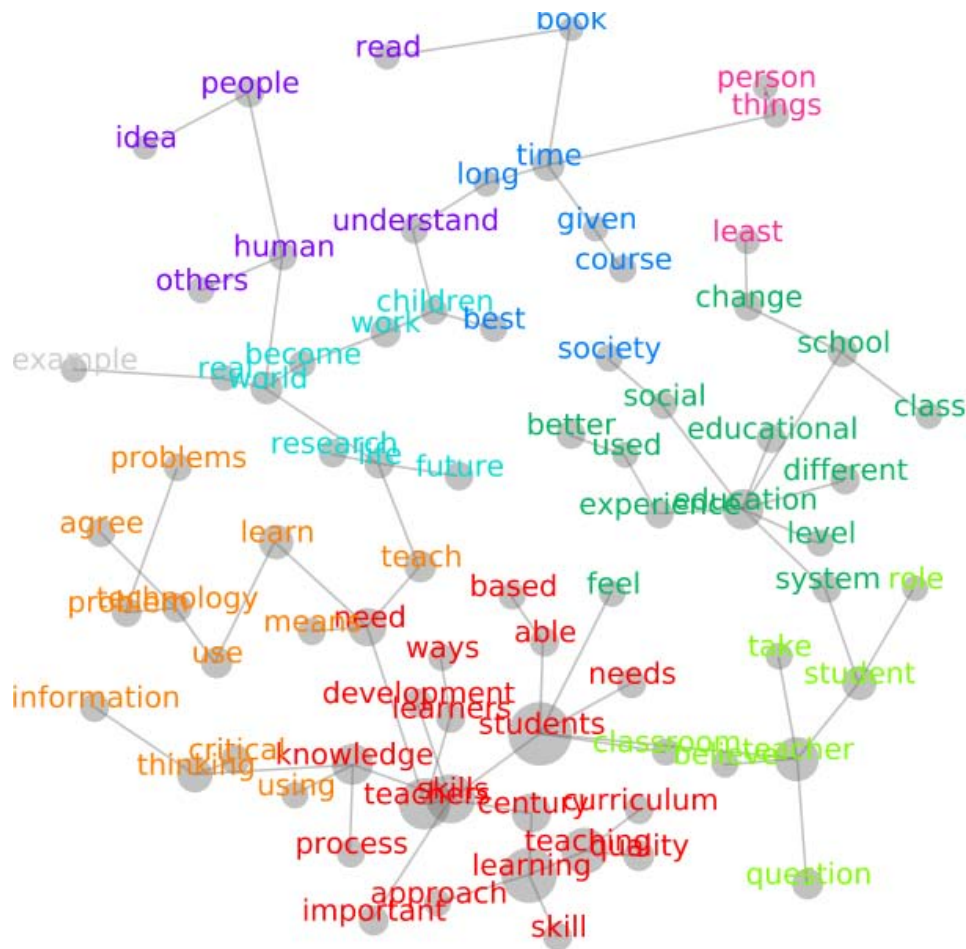


Figure 5. Second conceptual map of academicians' views

After the analyze of these to maps and related raw data some important findings revealed. These findings show that academicians criticize the education of educators, skills and perceptions of educators. According to academicians, educators should have;

- critical thinking skills,
- cyber communication skills,
- New (media, ICT, health, economy...) literacies,
- lifelong learning vision,
- global awareness,
- cross-cultural education skills,
- cyber behavior knowledge,
- cyber environment experiences and
- innovative learning methods

to answer new problems and lead quality learning process of 21st century learners.

CONCLUSION AND SUGGESTIONS

Because of the new generation of teachers is in a key role in building 21st century education, this topic has an immediate priority. In this context the purpose of this study was to determine the necessary skills of teachers to manage the cyber behaviors of 21st century learners. Base on the rich related literature it is possible to summarize that the 21st century learner is

- a self-directed learner,
- globally aware,
- a communicator,
- an innovator,
- civically engaged,
- a problem solver
- financially and economically literate,

- information and media literate,
- a collaborator and
- a critical thinker.

Compared to these skills and abilities academicians' mentioned educators' skills and abilities are very close to each other's. It was founded that academicians think that educators should have to be a critical thinker, cyber communicator, new media and environments literate, globally aware, lifelong learner, cross cultural educator, educational innovator. But, in order to equip educators with these skills and abilities our teacher education system need to re-discussed. Education systems need to enrich and diversify their e-learning tools and environments in accordance with the principle of equality of educational opportunity for cyber learning behaviors, lifelong learning and continuous education.

Teachers have important difficulties in understanding cyber behaviors of 21st century learners. The growing gap between teachers and learners has led to the emergence of new problems in education. However, these critical issues and innovative methods are not included in teacher education process. Because of the new generation of teachers is in a key role in building 21st century education, this topic has an immediate priority not only for educators but also for governments, families, international organizations and students themselves.

About the future research it is possible to suggest different research topics with different methodologies. Some of most critical suggestion provided here. Thus, future researches can be conducted on;

- educators' views on cyber behaviors of 21st century learners,
- educators' cyber learning behavior qualifications,
- educators and students views on the future of education,
- classification/modelling studies on cyber behaviors of 21st century learners
- integration of 21st century skills in teacher education.

REFERENCES

- Firat, M., & Kabakçi, I. (2010). Use of visual metaphors for navigation in educational hypermedia: Effects on the navigational performance. *Journal of Educational Multimedia and Hypermedia*, 19(1), 5.
- Dias, P., & Sousa, A. P. (1997). Understanding navigation and disorientation in hypermedia learning environments. *Journal of educational multimedia and hypermedia*, 6, 173-186.
- Kane, M. J., & Engle, R. W. (2000). Working-memory capacity, proactive interference, and divided attention: limits on long-term memory retrieval. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 26(2), 336.
- Mayer, R. E., & Moreno, R. (2003). Nine ways to reduce cognitive load in multimedia learning. *Educational psychologist*, 38(1), 43-52.
- ResearchGate, (2016). ResearchGate is built by scientists, for scientists. Retrieved on 27 August 2016, from <https://www.researchgate.net/about>