

AN EDUCATIONAL DISCOURSE OF CHILDREN'S COMPUTER CULTURE IN THE CONTEXT OF THE CONSTRUCTION OF SOCIAL REALITY

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UDK: 316:37:004
Review / *Pregledni članak*

Received / *Primljeno*: 15. IX. 200

Under the conditions of the spread of the society of information a computer has become not only a tool of work but also a means of free time and communication as well as a part of the home which is changing the way of people's activities and their traditional life. Children are active participants of this society, integrating not only into its creation but also into its understanding. Children themselves create computer culture in tune to the historic time in which they live. That is why their culture is postmodern, less normative and systemic.

Despite quite a large amount of research of children's computer activities, there is a lack of attention paid to children's computer culture as a whole as a socio-cultural, educational phenomenon of modern society. In educational research the problem of children's computer culture is often researched in only one way, attributing the most importance to the question of computer literacy and the provision of computers in schools. Cultural peculiarities are often identified only according to one exceptional feature – children's playtime computer activities. The problem of the research – the context of the educational discourse of children's computer culture as a phenomenon of the modern society of information, which can be theoretically based and empirically investigated by applying qualitative and quantitative research, the design of which has been fine-tuned, and the theory of the construction of social reality.

KEY WORDS: *children's computer culture, construction and reconstruction of social and cultural patterns, context of the educational discourse, educational research, construction of social reality*

INTRODUCTION

Under the conditions of the spread of the society of information a computer has become not only a tool for work but also a tool used in our free time and for communication, as well as a part of the home which is changing people's activities and their traditional life. Children are active participants in this society, integrated not only into its creation but also into the understanding of it. Scientists (Hutchby, Moran-Ellis, 2001) have come to the conclusion that modern children are especially open to various technologies – from television to the internet, from video to mobile phones, from video games to personal computers. That is why they are often described not only as consumers of computer technology but also as creators of computer culture. It is obvious, not only in modern sociological, anthropological, cultural

OBRAZOVNI DISKURS DJEČJE RAČUNALNE KULTURE U KONTEKSTU KONSTRUKCIJE DRUŠTVENE ZBILJE

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Primljeno / *Received* : 15. IX. 200

Pod uvjetima širenja društva informacija računalo je postala ne samo radni alat nego i sredstvo ispunjavanja slobodnog vremena i komunikacije, ali i sredstvo koje mijenja ljudske aktivnosti i tradicionalni način života. Kao aktivni sudionici ovog društva djeca se kroz kreaciju ali i putem njenog razumijevanja integriraju u društvo. Djeca sama stvaraju računalnu kulturu u skladu s povijesnim vremenu u kojem žive. Zbog toga je njihova kultura postmoderna, manje je normativna i sustavna. Unatoč prilično velikom broju istraživanja dječjih računalnih aktivnosti, premalo se pažnje posvećuje dječjoj računalnoj kulturi u cjelini isto kao i sociokulturnim obrazovnim fenomenima modernog društva. U pedagoškim istraživanjima problemu dječje računalne kulture najčešće se pristupa jednosmjerno gdje se najveća pažnja fokusira na pitanja o računalnoj pismenosti i opremljenosti škola s računalima. Kulturne posebnosti najčešće se identificiraju prema jednoj pojavi – dječjem igranju kompjuterskih igara.

Osnovni problem istraživanja odnosi se na proučavanje konteksta obrazovnog diskursa dječje računalne kulture kao fenomena modernog informacijskog društva koji teoretski može biti utemeljen i empirijski ispitivan primjenom kvalitativne i kvantitativne istraživačke metode i teorije konstrukcije društvene stvarnosti.

KLJUČNE RIJEČI: *dječja računalna kultura, konstrukcija društvene zbilje, konstrukcija i rekonstrukcija sociokulturnih obrazaca, kontekst obrazovnog diskursa, pedagoška istraživanja*

UVOD

U uvjetima širenja informatičkog društva računalo je postalo ne samo alat za rad nego i sredstvo za rasonodu i komunikaciju kao i dio domaćinstva koji mijenja ljudske aktivnosti i njihov tradicionalni život. Djeca su aktivni sudionici takvog društva, koja se integriraju ne samo u njegovo stvaranje nego i u njegovo razumijevanje. Znanstvenici (Hutchby, Moran-Ellis, 2001) su došli do zaključka da su moderna djeca posebno otvorena za razne tehnologije – od televizije do interneta, od videa do mobitela, od videoigrica do osobnih računala. Zato se ona često opisuju ne samo kao potrošači računalne tehnologije već i kao stvaratelji računalne kulture. To je očito ne samo u suvremenim sociološkim, antropološkim, kulturalnim i psihološkim istraživanjima već i u obrazovnim jer je status djeteta kao stvaratelja računalne kulture osobito važan s obrazovnog stajališta.

and psychological research, but also in educational research, that the status of children as creators of computer culture is especially significant from an educational point of view.

However, children are not socially mature and lack experience in constructing and reconstructing socio-cultural schemes that were created by adults. For that reason children's computer culture was devalued in education and the value of its originality wasn't acknowledged. But, from the end of the 20th and the beginning of the 21st century the situation has changed fundamentally. Scientists have pulled children from the forgotten land and placed the problem of children's personality at the centre of interest and research, stating that a child is not a miniature adult. Children have their own world, different interests, dispositions and their own culture. That is why the 21st century is signified by the spread of dialogue between adults and children's culture, the start of understanding children as a specific social group with an appropriate socio-cultural status (Mead, 1967; Gaižutis, 1989; Šliogeris, 1996; Bourdieu, Passeron, 1997; Juodaitytė, 2003, etc.).

I. THE SUBJECT OF RESEARCH OF CHILDREN'S COMPUTER CULTURE

Children themselves create computer culture in tune to the historic time in which they live. That is why their culture is postmodern, less normative and systemic. In the process of the creation of culture, the educational significance of a child's interaction with computers is sensed in the structure of its behavior, relations, understandings, values (informative, communicative, technological ones). The child himself becomes "a player" who is able to choose the role of a culture character, creator, or consumer while implicitly evaluating his own work. Furthermore, as children create computer culture they share their openness to innovations and susceptibility to computer technologies, cultural disobedience, the freedom of action, i.e. everything that is typical of children as personalities or as members of a group, as well as members of the information society. The material content of the computer culture is related to the interaction of a computer as a material object with the virtual informative – communicative world and to the scales of value. The content of the communicative computer culture is made up of the exchange of cultural information, and work with a computer as a technological means is understood as the reality of modern society.

An understanding of the world of contemporary children's computer culture as a social reality may be based on objective and subjective methods (Cohen, Manion, 1994; Maxwell, 1996; Silverman, 1997; Bitinas, 2006, etc.). However, the subjective method is a more frequent one since social reality does not have an ultimate shape but is created, which is why different people and groups understand it differently.

Scientists from various countries (Great Britain, the USA, Germany, France, Bulgaria, Israel, etc.) have studied the status of children in the information society and have looked at their computer culture as a phenomenon of postmodern information society (Charp, 1986; Loader, 1998; Suss, Souninen, Garitaonandia, Juaristi, Koikkalainen, Oleaga, 2001; Holloway, Valentine, 2003, etc.). In contemporary research of children's computer culture the following problems arise: the peculiarities of working with a computer, identifying the influence of computer technologies on children's life and behavior, as well as the answer to the question of whether new technologies mean a new kind of childhood (Hutchby, Moran-Ellis, 2001). The peculiarities of both children's and adults' computer activities in various environments, especially in the home environment, when a computer becomes

Međutim, djeca nisu društveno zrela i nemaju iskustva u konstruiranju i rekonstruiranju sociokulturnih obrazaca koje su stvorili odrasli. Iz tog je razloga dječja računalna kultura u pedagogiji bila obezvrijeđena i nije bila priznata vrijednost njene spontanosti. Ali na prijelazu iz 20. u 21. stoljeće ova se situacija iz osnove promijenila. Znanstvenici su dijete izvukli iz zaborava i položaj njegove osobnosti postavili u središte pažnje i istraživanja te utvrdili da dijete nije minijatura odraslog čovjeka. Djeca imaju svoj odvojeni svijet, drugačije interese, naravi i vlastitu kulturu. Zato je 21. stoljeće obilježeno širenjem dijaloga između kulture odraslih i dječje kulture, s početcima shvaćanja djece kao posebne društvene grupe koja ima odgovarajući sociokulturni status (Mead, 1967; Gaižutis, 1989; Šliogeris, 1996; Bourdieu, Passeron, 1997; Juodaitytė, 2003, itd.).

1. DJEČJA RAČUNALNA KULTURA KAO PREDMET ISTRAŽIVANJA

Djeca stvaraju računalnu kulturu u skladu s povijesnim vremenom u kojem žive. Zato je njihova kultura postmoderna, manje normativna i sustavna. U procesu stvaranja kulture pedagoška se važnost interakcije djeteta s računalom izuzetno osjeća jer se ističu strukture ponašanja, odnosa, razumijevanja i vrijednosti (informacijske, komunikacijske i tehnološke). Dijete postaje "igrač" koji sâm može izabrati ulogu kulturnog lika, stvaraoca i potrošača dok implicitno procjenjuje svoj vlastiti rad. Štoviše, dok djeca stvaraju računalnu kulturu, ona s drugima dijele svoju otvorenost za inovacije i kompjutersku tehnologiju, svoj kulturni neposluš, svoju slobodu djelovanja, tj. sve što je tipično za djecu kao osobe ili kao članove grupe, te kao članove informacijskog društva. Materijalni sadržaj računalne kulture odnosi se na interakciju računala kao materijalnog predmeta s virtualnim informacijsko-komunikacijskim svijetom i s vrijednosnim sustavom. Sadržaj komunikacijske računalne kulture sastoji se od razmjene kulturnih informacija, a rad s računalom kao tehnološkim sredstvom shvaća se kao stvarnost modernog društva.

Razumijevanje svijeta suvremene dječje računalne kulture kao društvene stvarnosti može biti zasnovano na objektivnim i subjektivnim metodama (Cohen, Manion, 1994; Maxwell, 1996; Silverman, 1997; Bitinas, 2006, itd.). Međutim, subjektivna metoda je češća jer društvena stvarnost nema konačan oblik nego se stvara, što je razlogom da je razni ljudi i grupe različito shvaćaju.

Znanstvenici iz više zemalja (Velike Britanije, SAD-a, Njemačke, Francuske, Bugarske, Izraela, i dr.) proučavali su status djece u informacijskom društvu i istraživali njihovu računalnu kulturu kao fenomen postmodernog informacijskog društva (Charp, 1986; Loader, 1998; Suss, Souninen, Garitaonandia, Juaristi, Koikkalainen, Oleaga, 2001; Holloway, Valentine, 2003, i dr.). U suvremenom istraživanju dječje računalne kulture pojavljuju se sljedeći problemi: osobitosti rada na računalu, određivanje utjecaja kompjuterske tehnologije na život i ponašanje djece, te odgovor na pitanje znače li nove tehnologije i novi tip djetinjstva (Hutchby, Moran-Ellis, 2001). Istražuju se osobitosti kompjuterskih aktivnosti i djece i odraslih u raznim okruženjima, posebno u obiteljskom okružju kad računalno postaje dijelom okoline kao tehnološko sredstvo informiranja i komuniciranja (Facer, Furlong, Furlong, Sutherland, 2001). Tvrdi se da roditelji i djeca imaju različita iskustva društvenosti i zato se naglašavaju mogućnosti multikulturalnog sukoba. Prema istraživanjima oni se pojavljuju jer svrhu i funkcije računala djeca i roditelji razumijevaju na različite načine pa stoga imaju i različite načine konstruiranja društvene zbilje. Naglašavaju se frustracije koje su tipične za odrasle zbog negativnih ishoda dječjih

a part of that environment as a technological means of information and communication, are being researched (Facer, Furlong, Furlong, Sutherland, 2001). It is stated that parents and children represent different cultural experiences and that is why the possibilities of multicultural conflict are highlighted. According to the researchers, they appear because children and parents understand the purpose and the functions of the computer in different ways and have different ways of constructing social reality. The frustrations typical of adults due to the negative outcome of children's computer activities are emphasized, which is why the educational character of computer culture is ignored. The outcome of these phenomena is as follows: the unreasoned belief that children's computer activities are an unsuccessful attempt to imitate adults (Brosnan, 1998; Facer, Furlong, Furlong, Sutherland, 2001; Holloway, Valentine, 2003).

Other scientists (Jessen, 1999; Casas, 2001; Hutchby, Moran-Ellis, 2001; Buerman, 2007, etc.), on the contrary, solve the problem of how to protect children from the negative influence of computers by indicating safe computer activities and preparing systems of references and regulations. Such scientists search for ways of protecting a child as a personal and cultural identity and outline the conditions for safe communicative, informative and playtime computer activities.

Another group of scientists (Facer, Furlong, Furlong, Sutherland, 2001) pay their attention to the purpose and functions of a computer in modern children's life as a whole and point out that children's computer activities determine the interrelationship of members of the family and of the school community as well as change them in a positive or negative way. It is pointed out that a computer is becoming not only a technological or informative-communicative object or toy, but also a part of the modern child's image, determining his social status among peers.

A group of scientists (Subrahmanyam, Kraut, Greenfield, Gross, 2000; Roschelle, Pea, Hoadley, Gordin, Means, 2000; Robinson, Delahooke, 2001) has analyzed the educational importance of computer technologies for children. They point out that these technologies make the process of teaching and learning more effective since they influence children's motivation. The possibilities of children's early integration into long distance learning and teaching are analyzed as well.

Scientific research pays attention to the variety of children's computer activities, i.e. to leisure, information and communication activities (Jessen, 1999; Livingstone, Bovill, 1999; Casas, 2001; Hutchby, Moran-Ellis, 2001; Holloway, Valentine, 2003; Brown, Duguid, 2004; December, 2005, etc.). Having identified these activities as essential, especially the leisure ones, the problem of the expression of sexual dimorphism is investigated and it is pointed out that computer culture contains two subcultures: boys and girls. The variety of children's socio-cultural roles and the difference of purpose of a computer to children of either sex are pointed out.

With the help of new research scientists are seeking to answer the question of how true reality changes into virtual reality and vice versa in the world of children's computer culture. It is noted that the sophistication of parents and pedagogues has a great influence on these processes since they have to know that when working with a computer for a longer period of time, the boundaries between the real and virtual world disappear (Holloway, Valentine, 2003).

kompjuterskih aktivnosti, te se zato ignorira obrazovni karakter računalne kulture. Razlog ovome valja tražiti u: nerazumnom uvjerenju da su dječje kompjuterske aktivnosti neuspješan pokušaj oponašanja odraslih (Brosnan, 1998; Facer, Furlong, Furlong, Sutherland, 2001; Holloway, Valentine, 2003).

Drugi znanstvenici (Jessen, 1999; Casas, 2001; Hutchby, Moran-Ellis, 2001; Buerman, 2007, i dr.), nasuprot tomu, problem zaštite djece od negativnog utjecaja računala rješavaju upućivanjem na sigurne kompjuterske aktivnosti i pripremanjem sustava referenci i pravila. Ovi znanstvenici traže načine da zaštite djecu kao osobne i kulturne identitete i ocrtaju uvjete za sigurne komunikacijske, informacijske i zabavne kompjuterske aktivnosti.

Još jedna grupa znanstvenika (Facer, Furlong, Furlong, Sutherland, 2001) je obratila pozornost na funkcije i svrhu koju računala imaju u životima moderne djece u cjelini pa ukazuju kako dječje kompjuterske aktivnosti određuju međuodnos članova obitelji i školske zajednice, te kako ih mijenja u pozitivnom ili negativnom smislu. Ukazuje se na činjenicu da računalo postaje ne samo tehnološki ili komunikacijsko-informativni predmet ili igračka, već i na to da postaje i dio "imidža" modernog djeteta određujući mu društveni status među vršnjacima.

Grupa znanstvenika (Subrahmanyam, Kraut, Greenfield, Gross, 2000; Roschelle, Pea, Hoadley, Gordin, Means, 2000; Robinson, Delahooke, 2001) analizirala je kakvu obrazovnu ulogu imaju računalne tehnologije za djecu. Oni su ukazali kako računalne tehnologije čine proces podučavanja i učenja učinkovitijim jer utječu na motivaciju djece. Mogućnosti rane integracije djece u sustav učenja i podučavanje na daljinu također se analiziraju.

Znanstveno istraživanje obraća pažnju na razne dječje kompjuterske aktivnosti, tj. na igrače, informacijske i komunikacijske aktivnosti (Jessen, 1999; Livingstone, Bovill, 1999; Casas, 2001; Hutchby, Moran-Ellis, 2001; Holloway, Valentine, 2003; Brown, Duguid, 2004; December, 2005, i dr.). Nakon što su odredili ove aktivnosti kao bitne, osobito one igrače, istražuje se problem izraženosti spolnog dimorfizma i ukazuje se kako računalna kultura sadrži dvije subkulture: onu dječaka i onu djevojčica. Ističu raznovrsnost dječjih sociokulturnih uloga kao i razlike u svrsi koju računala imaju za djecu jednog ili drugog spola.

Pomoću novih istraživanja znanstvenici traže odgovor na pitanje kako se u svijetu dječje računalne kulture prava stvarnost mijenja u virtualnu stvarnost i obrnuto. Primjećuju da sofisticiranost roditelja i učitelja mnogo utječe na te procese jer oni moraju znati da prilikom dugotrajnog rada s računalom nestaju granice stvarnog i virtualnog svijeta (Holloway, Valentine, 2003).

Strana pedagoška istraživanja naglašavaju problem dječjeg statusa u informatičkom društvu opisujući dijete kao osobu koja je punopravni član tog društva, i koje je stoga sposobno iskoristiti njegove materijalne i duhovne kulturne proizvode, od kojih su najvažnije informacijske i komunikacijske tehnologije (u daljnjem tekstu IKT)(Jessen, 1999; Livingstone, Bovill, 1999; Casas, 2001; Holloway, Valentine, 2003). Znanstvenici definiraju različita okruženja dječjeg rada s računalom, ali se najveća pažnja posvećuje dječjim slobodnim aktivnosti s računalom. Multikulturalni pedagoški diskurs o dječjim kompjuterskim aktivnostima opisuje stavove djece i odraslih prema funkcijama i svrsi

Foreign educational research highlights the problem of a child's status in the information society, describing a child as a person who is a full-fledged member of this society able to use its material and spiritual products of culture, the most important of which is informative and communicative technologies (further ICT) (Jessen, 1999; Livingstone, Bovill, 1999; Casas, 2001; Holloway, Valentine, 2003). Scientists define various environments of children's work with a computer but the most attention is paid to children's free interaction with a computer. The multicultural, educational discourse of children's computer activities, describes the attitude of both children and adults towards the functions and purpose of a computer. The assumptions of the multicultural pedagogical conflict children – adults are highlighted. Also, the forms, methods and means of educating children to create a non-argumentative computer culture are described.

However, despite quite a large amount of research of children's computer activities, there is a lack of attention paid to children's computer culture as a whole as a socio-cultural, educational phenomenon of modern society. In educational research the problem of children's computer culture is often researched in one way, by attributing the most importance to the question of computer literacy and the provision of computers in schools. Cultural peculiarities are often identified only according to one exceptional feature – children's use of computers for play. However, foreign scientists of education have formed the concept of children's computer culture and have ascribed the special content of activities as well as the world of communicative, informative and playful technologies to it. Children's computer culture is described as a modern phenomenon of information society. We must understand the meanings of this culture and develop it. That is why the educational discourse is so important.

Lithuanian scientists of education, contrary to foreign scientists, especially emphasize the importance of ICT in the processes of learning and teaching at schools, but they do not analyze the phenomenon of children's computer culture. The following questions related to this problem are analyzed: the possibilities of introducing ICT into Lithuanian schools, the various packages of instructional computer aids and the possibilities of using them, the state of children's learning and teaching at school with the use of ICT. The alternative, non-traditional surroundings of learning and teaching created by the use of ICT, which are important in exact sciences, are presented. The introduction of virtual learning and teaching into schools is encouraged.

National and international cooperative projects being prepared at present are in essence oriented toward the integration of ICT into the processes of learning and teaching at school (e.g. "The Improvement of School in the Century of Information", "The Network of Help in Employing Communication and Information Technologies in Education of Northern and Baltic Countries" etc.). With the help of this research scientists seek to intensify the process of expansion of the information society in Lithuania and to provide schools with quality ICT. However, Lithuania lacks scientific research of the educational type which would reveal the world of children's computer culture, its social and educational context.

When presenting the traditional culture of children's education, researchers (Blažaitytė, 2007; Butvilas, Juozapaitytė, 2007, etc.) emphasize the negative problems of children's interaction with a computer. In this concept the following problem is analyzed – children's ability to feel a part of the virtual world and losing the need to be interested in the natural environment. The traditional role of adults, which often means the unconditional prohibition of children's use of a computer, becomes relevant, since in such a way one seeks to make children's computer activities safe.

računala. Naglašavaju se pretpostavke multikulturalnog pedagoškog sukoba između djece i odraslih. Također, se opisuju oblici, metode i sredstva za obrazovanje djece kako bi stvorili nesukobljavajuću računalnu kulturu.

Međutim, usprkos velikom broju istraživanja dječjih kompjuterskih aktivnosti, nedostatna je pažnja bila posvećena dječjoj računalnoj kulturi kao cjelini u kontekstu sociokulturnog, obrazovnog fenomena u suvremenom društvu. U pedagoškim se istraživanjima problemu dječje računalne kulture najčešće prilazilo na samo jedan način - najviše važnosti pridavalo se pitanju računalne pismenosti i opskrbljenosti škola računalima. Kulturne specifičnosti se često identificiraju samo prema jednoj izvanrednoj karakteristici - dječjoj uporabi računala u igri. Međutim, strani pedagoški znanstvenici su stvorili koncept dječje računalne kulture i pridali mu sadržaj koji se sastoji od aktivnosti uklopljenih u svijet informacijskih, komunikacijskih i igračih tehnologija. Dječja se računalna kultura opisuje kao suvremeni fenomen informacijskog društva. Moramo razumjeti značenja ove kulture i razviti je. Zato je obrazovni diskurs tako važan.

Litvanski pedagoški znanstvenici, u kontrastu prema stranim znanstvenicima, posebno naglašavaju važnost IKT u procesu učenja i nastavi u školama, ali ne analiziraju fenomen dječje računalne kulture. Analiziraju se sljedeća pitanja u vezi s ovim problemom: mogućnost uvođenja IKT u litvanske škole, razni računalni obrazovni paketi i mogućnost njihove upotrebe te stanje dječjeg učenja i podučavanja u školi uz upotrebu IKT. Predstavljaju se alternativne, netradicionalne okolnosti učenja i podučavanja stvorene uz upotrebu IKT, koje su važne u preciznim znanostima. Ohrabruje se uvođenje virtualnog učenja i podučavanja u škole.

Projekti nacionalne i međunarodne suradnje koji se trenutno pripremaju u biti su okrenuti prema integraciji IKT u procese učenja i podučavanja u školi (npr. "Unapređivanje školstva u stoljećima informacije", "Mreža pomoći u upotrebi komunikacijskih i informacijskih tehnologija u obrazovanju u sjevernim i baltičkim zemljama" i dr.). Uz pomoć ovih istraživanja znanstvenici pokušavaju intenzivirati proces širenja informacijskog društva u Litvi i pružiti školama kvalitetnu IKT. Međutim, Litvi manjka znanstveno istraživanje obrazovnog tipa koje bi razotkrilo svijet dječje računalne kulture, njegov društveni i obrazovni kontekst.

U predstavljanju tradicionalne kulture dječjeg obrazovanja znanstvenici (Blažaityte, 2007; Butvilas, Juozapaityte, 2007, i dr.) naglašavaju negativne probleme dječje interakcije s računalima. U tom se smislu analizira sljedeći problem - dječja sposobnost da se osjete dijelom virtualnog svijeta i da izgube potrebu da se zanimaju za prirodnu okolinu. Tradicionalna uloga odraslih, koja često znači bezuvjetnu zabranu dječjeg rada s računalom, postaje relevantna jer se na taj način dječje kompjuterske aktivnosti pokušava učiniti sigurnima.

Međutim, ovaj multidimenzionalni problem, kao i izostanak teoretske procjene računalne kulture i multikulturalnog diskursa "djeca-odrasli", uzrokuje probleme za edukacijsko istraživanje dječje računalne kulture. Djeca su, za razliku od odraslih, integrirana u kulturu informacijskog društva, osnova kojeg je računalna tehnologija, zbog njihove prirodne potrebe da spoznaju svijet, da ga istražuju kroz svoje aktivnosti. Međutim, pedagoško shvaćanje da je moguće stvoriti sustave obrazovanja dekodirajući ih, je poništeno. S ciljem što boljeg razumijevanja obrazovnog diskursa dječje računalne kulture, kao metodološki pristup moguće je primijeniti teoriju konstrukcije društvene

However, this multidimensional problem, the lack of both the theoretical validation of computer culture and the multicultural discourse of "children-adults", cause trouble for the educational research of children's computer culture. Children, contrary to adults, are integrated into the culture of the information society, the base of which is computer technology, due to their natural need to understand the world, to investigate it through their activities. However, the educational understanding, that it is possible to create systems of education by decoding them, is eliminated. In order to understand the educational discourse of children's computer culture, it is possible to apply the theory of construction of social reality (Berger, Luckmann, 1999) as a methodological approach. However, the educational discourse has not been highlighted. All this determines *the research target – the context of the educational discourse of children's computer culture as a phenomenon of the modern society of information which can be theoretically based and empirically investigated by applying qualitative and quantitative research methods and the theory of the construction of social reality.*

Research aim – is to theoretically base and empirically investigate the educational discourse of children's computer culture, applying both qualitative and quantitative research methods and the theory of the construction of social reality.

2. METHODOLOGICAL CONCEPTS OF THE RESEARCH

The research of children's computer culture is based on modern *phenomenology* (Black, Ammon, 1992; Brim, Orville, 1995; Mickūnas, Stewart, 1994, etc.), which corresponds to the spirit of the postmodern epoch and allows us to research the meanings residing in the children's world while the experience is freed from preconceived theoretical assumptions, interpretations, and moods. Phenomenology provides the possibility to investigate the essence of children's computer culture as a phenomenon and acknowledges that it is significant from the educational point of view but it is not a fairly recognized type of new socio-cultural reality. Investigating children's computer culture as a phenomenon scientists see into the explanatory schemes of the real world, which is not like a state of consciousness or a mental act, but the image of experience as an act of introspection and intuition. With the help of the research of the educational discourse of children's computer culture scientists seek to eliminate both the preconceived beliefs of adults (parents and pedagogues) that children's computer culture is just a socially immature people's culture and the emergent proposition that children's inner world depends on temporary impressions and can be expressed through subconscious forms of language. The educational discourse of children's computer culture can help reveal how children, with the help of modern technological means, learn social reality, construct and reconstruct it and what meanings they give to it.

The understanding of children's computer culture is based on *the discourse of postmodernism*, which makes a child's subjective "I" and his socio-cultural world relevant (Kupffer, 1990; Beck, 1993; Rubavičius, 2003) and allows the identification of the meanings of the computer culture created by children as a social group. In the context of postmodernism, children are understood not based on the *a priori* level but based on their interaction with the social world and are identified as individuals able to create computer culture based on the world as they perceive and understand it, the meanings of which are revealed by their identity as the creators of a computer culture.

stvarnosti (Berger, Luckmann, 1999). Međutim, obrazovni diskurs ovdje nije naglašen. Sve to određuje *predmet istraživanja* – *kontekst obrazovnog diskursa dječje računalne kulture kao fenomena modernog informacijskog društva koji teoretski može biti utemeljen i empirijski ispitan primjenom kvalitativne i kvantitativne istraživačke metode i teorije društvene konstrukcije stvarnosti*.

Cilj istraživanja jest napraviti teoretsku osnovu i empirijski istražiti obrazovni diskurs dječje računalne kulture primjenjujući kvalitativne i kvantitativne istraživačke metode i teoriju konstrukcije društvene stvarnosti.

2. METODOLOŠKI POJMOVI ISTRAŽIVANJA

Istraživanje dječje računalne kulture bazira se na modernoj *fenomenologiji* (Black, Ammon, 1992; Brim, Orville, 1995; Mickūnas, Stewart, 1994, i dr.), koja odgovara duhu postmoderne ere i omogućava da istražimo značenja koja prebivaju u dječjem svijetu, a oslobađa to iskustvo od unaprijed stvorenih teoretskih pretpostavki, interpretacija i raspoloženja. Fenomenologija pruža mogućnost istraživanja biti dječje računalne kulture kao fenomena i potvrđuje da je značajna s pedagoškog stajališta, ali nije ravnopravno prepoznat tip nove sociokulturne stvarnosti. Istražujući dječju računalnu kulturu kao fenomen, znanstvenici vide unutar eksplanatornih shema stvarnog svijeta, koje nisu poput stanja svijesti ili mentalnog čina, nego predodžba iskustva kao čin introspekcije i intuicije. Uz pomoć istraživanja obrazovnog diskursa o dječjoj računalnoj kulturi znanstvenici nastoje eliminirati unaprijed stvorena vjerovanja odraslih (roditelja i pedagoga) koja u dječjoj računalnoj kulturi vide samo kulturu društveno nezrelih osoba, a sukladno novonastalim propozicijama koje tvrde da dječji unutrašnji svijet ovisi o privremenim impresijama i da se može izraziti putem podsvjesnih oblika jezika. Obrazovni diskurs o dječjoj računalnoj kulturi može pomoći u razotkrivanju kako djeca uz pomoć modernih tehnoloških sredstava uče o društvenoj stvarnosti, kako je konstruiraju i rekonstruiraju i koja joj značenja pridaju.

Razumijevanje dječje računalne kulture zasnovano je na *diskursu o postmodernom*, koji djetetovo subjektivno "ja" i njegov sociokulturni svijet čine relevantnim (Kupffer, 1990; Beck, 1993; Rubavičius, 2003) i dopušta identifikaciju značenja računalne kulture koja su stvorila djeca kao društvena grupa. U kontekstu postmodernizma razumijevanje djece se ne bazira na *apriornoj* razini, već na osnovi njihove interakcije s društvenim svijetom gdje se identificiraju kao individue sposobne za stvaranje računalne kulture zasnovane na svijetu kako je one percipiraju i razumiju, značenja koja se otkrivaju putem njihova identiteta kao stvaratelja računalne kulture.

Dječju se računalnu kulturu može istražiti primjenom *metodologije kvalitativnog i kvantitativnog istraživanja* (Cohen, Manion, 1994; Kvale, 1996; Maxwell, 1996; Silverman, 2001; Bitinas, 2006, i dr.). Metodologija kvalitativnog istraživanja predstavlja koncept anti-pozitivističke stvarnosti (interpretacije) i omogućava nam da istražimo društvenu stvarnost koju su djeca izgradila uz pomoć računala, način na koji sebe vide, kao i dječju računalnu kulturu kao suvremeni fenomen informacijskog društva. Također ona nam omogućava da interpretiramo tu stvarnost u kontekstu svakodnevnog života i primjene značenja koja su stvorila djeca. Metodologija kvantitativnog istraživanja predstavlja pozitivan stav i koncept stvarnosti koji mu pripada. Također prikazuje stavove roditelja i

Children's computer culture can be investigated by applying *the methodology of qualitative and quantitative research* (Cohen, Manion, 1994; Kvale, 1996; Maxwell, 1996; Silverman, 2001; Bitinas, 2006, etc.). The methodology of qualitative research presents the concept of anti-positive reality (of interpretation) and allows us to investigate the social reality constructed by children with the help of a computer, the way they see it themselves, and children's computer culture as a modern phenomenon of the society of information. It also allows us to interpret it in the context of daily life and the application of the meanings provided by children. The methodology of quantitative research presents the positive attitude and the concept of the reality corresponding to it. It also shows parents' and children's attitudes towards both a computer as a modern means of technology and information, and towards children's computer culture as a phenomenon of the modern society of information.

The educational discourse of children's computer culture is investigated by applying *the theory of the construction of social reality* (Berger, Luckmann, 1999) accentuating the objective and subjective contexts of social reality *constructed* by children. Objective social reality is explained by institutionalization and legitimization, while subjective social reality is explained by internalization, the economy maintaining the reality and identity. The process of being objective is contextualized by the habituation of computer activities, with the relation to the environment accentuating the importance, the layers and the roles of cultural and social order. The subjective context allows us to identify the role and status of children in the modern world of technology as creators of computer culture.

3. THEORETICAL NOVELTY AND PRACTICAL SIGNIFICANCE

Children's computer culture as a postmodern phenomenon of the society of information has been established and the context of its educational significance, the essence of which is made up not only of children's technological skills but also of their understanding of social reality, has been highlighted. Scientists have identified and theoretically-empirically grounded the educational discourse of children's computer culture as an identity and their role as the creators of modern computer culture, constructing and reconstructing the social reality of the world in which they play, communicate, discover and create. The way to apply qualitative and quantitative research has been established and the possible application of two methods (children's free essay and a questionnaire) has been shown. With the help of the quantitative method, children's and parents' points of view on the question of computer culture have been highlighted and its traditional, postmodern and cultural context has been identified. The method of qualitative research has been applied, i.e. the subjects were given a free subject essay in which they were allowed to freely express their computer experience in written form and to give their sense of the situation "Computer and I", revealing the socio-cultural and educational discourse of interaction with a computer. The model of the analysis of the data of the qualitative research has been prepared and the procedures of its realization have been described. The empirical interpretation of the data in the context of the construction of social reality has been carried out (Berger, Luckmann, 1999).

The results of our empirical research deny one of the educational myths, that children create the world according to the examples and rules suggested by adults and that that is the extent of their cultural and cognitive achievements (Marcon, 1990; Jessen, 1999; Holloway, Valentine, 2003). The research of the educational discourse of children's computer culture in the context of the construction of social reality has revealed that

djece i prema računalu kao modernom sredstvu tehnologije i informacije te prema dječjoj računalnoj kulturi kao fenomenu modernog informacijskog društva.

Obrazovni diskurs o dječjoj računalnoj kulturi se istražuje primjenom *teorije konstrukcije društvene stvarnosti* (Berger, Luckmann, 1999) s naglaskom na objektivnim i subjektivnim kontekstima društvene stvarnosti koje su djeca *konstruirala*. Objektivna društvena stvarnost se objašnjava institucionalizacijom i legitimizacijom, dok se subjektivna društvena stvarnost objašnjava internalizacijom, ekonomijom koja održava stvarnost i identitet. Proces objektivnosti se kontekstualizira navikavanjem na kompjuterske aktivnosti, a odnos prema okolini naglašava važnost, slojeve i uloge kulture i društvenog reda. Subjektivni kontekst nam omogućava da odredimo uloge i status djece u suvremenom svijetu tehnologije kao stvoritelja računalne kulture.

3. TEORETSKE NOVINE I PRAKTIČNO ZNAČENJE

Dječja računalna kultura kao postmoderni fenomen informacijskog društva uspostavljena je, a kontekst njena obrazovnog značenja, čija bit nije samo sastavljena od tehnoloških sposobnosti djece nego i od njihovog razumijevanja društvene stvarnosti, posebno je naglašena. Znanstvenici su identificirali i teoretsko-empirijski utemeljili obrazovni diskurs o dječjoj računalnoj kulturi kao identitetu i njihovu ulogu kao stvoritelja moderne računalne kulture, konstruirajući i rekonstruirajući društvenu stvarnost svijeta u kojoj se igraju, komuniciraju, otkrivaju i stvaraju. Način primjene kvalitativnog i kvantitativnog istraživanja je utemeljen a moguća aplikacija dviju metoda (dječji slobodni sastav i anketa) je prikazana. S pomoću kvantitativne metode bili su ispitani stavovi djece i roditelja o pitanju računalne kulture u kontekstu tradicionalne i postmoderne kulture. Kod primjene metoda kvalitativnog istraživanja ispitanici su pisali slobodne sastave u kojima su opisali svoja iskustva s računalima te iznijeli svoje osjećaje o odnosu "Računalo i ja", otkrivajući na taj način sociokulturni i obrazovni diskurs o interakciji s računalom. Model analize podataka iz kvalitativnog istraživanja je pripremljen i postupak njene realizacije je opisan. Empirijska interpretacija podataka u kontekstu konstrukcije stvarnosti je izvršena (Berger, Luckmann, 1999).

Rezultati našeg empirijskog istraživanja negiraju jedan od obrazovnih mitova, naime da djeca stvaraju svijet na osnovi primjera i pravila koje sugeriraju odrasli i da je to granica njihovih kulturnih i kognitivnih postignuća (Marcon, 1990; Jessen, 1999; Holloway, Valentine, 2003). Istraživanje obrazovnog diskursa o dječjoj računalnoj kulturi u kontekstu izgradnje društvene stvarnosti je otkrilo kako djeca stvaraju društvenu stvarnost pridajući joj društvena, kulturna i obrazovna značenja kao i time što je čine subjektivnom i objektivnom. Odrasli kao grupa veoma su važni za djecu. Oni djeci osiguravaju nužne uvjete za širenje dječje računalne kulture, razumijevanje i održavanje identiteta njihova kulturnog svijeta pomoću određenih pedagoških sredstava i sustava.

Metodologiju istraživanja dječje računalne kulture kao postmoderni obrazovni fenomen mogu upotrijebiti i drugi znanstvenici koji žele istražiti obrazovni diskurs suvremenog dječjeg kulturnog svijeta, omogućavajući pedagozima da isplaniraju pedagoške sustave.

children create social reality by providing it with social, cultural and educational meanings as well as by making it subjective and objective.

Adults as a group are important to children. They provide children with the necessary conditions to spread children's computer culture, understanding and maintaining the identity of their cultural world through particular pedagogical means and systems.

The methodology of the research of children's computer culture as a postmodern educational phenomenon can be used by other scientists who wish to research the educational discourse of the modern children's cultural world, allowing educators to plan pedagogical systems.

CONCLUSIONS

1. Children's computer culture, as a part of the computer culture of contemporary society, is placed in the context of the concepts of general culture and children's culture and analyzed through the paradigms of the regularities and features of the contemporary society of information. It is stated that the following general features are characteristic of children's computer culture: openness to innovations, individualization of activities, freedom and initiative, experimentation, creativity and abiding by rules. These features legitimize a person's interaction with a computer as a technological means as a part of the environment of daily life. This interaction is one of the most important features of children's computer culture. In the course of that interaction a special relationship is developed with oneself as an individual, with family members, contemporaries and "other" important people who are part of the community of those using computer technologies in various activities.
2. The educational discourse of children's computer culture can be understood through the theory of the construction of social reality which enables the interpretation of the processes of children's cognizance through objective and subjective paradigms. That means that children reconstruct what exists in the social world in an objective way. With what they know and discover they create a social reality of computer culture which is acceptable to them in a subjective way.
3. The educational discourse characteristic of children's computer culture can be investigated by applying an appropriate balance of qualitative and quantitative research, giving top priority to the qualitative one, which allows us to identify the subjective world of children's computer culture through the senses of children themselves. The quantitative research is understood as supplementary since it allows us to verify what can be statistically checked and proven. Research of the educational discourse of children's computer culture also gives a sense of the priorities of the qualitative research: the identification of the social, cultural and educational meanings of the world of childhood and children's functions as providers of scientifically important information, since the information provided by them is not only empirically significant, which is important in daily life, but also scientifically and educationally.

ZAKLJUČCI

1. Dječja računalna kultura kao dio računalne kulture suvremenog društva smještena je u kontekst ideja o općoj kulturi i dječjoj kulturi te analizirana kroz paradigme regularnosti i karakteristika suvremenog informacijskog društva. Tvrdi se općenito da su sljedeće pojave karakteristične za dječju računalnu kulturu: otvorenost prema inovacijama, individualizacija aktivnosti, sloboda i inicijativa, eksperimentiranje, kreativnost i poštivanje pravila. Ove karakteristike legitimiziraju interakciju neke osobe s računalom kao tehnološkim sredstvom i dijelom okoline svakodnevnog života. Ova interakcija jedna je od najvažnijih pojava dječje računalne kulture. Tijekom te interakcije razvija se poseban odnos s osobom kao individuom, s članovima obitelji, sa suvremenicima i "drugim" važnim osobama koji su dio zajednice onih koji kompjuterske tehnologije koriste za razne aktivnosti.
2. Obrazovni diskurs o dječjoj računalnoj kulturi može se razumjeti kroz teoriju društvene konstrukcije stvarnosti koja omogućava interpretaciju dječjih kognitivnih procesa kroz objektivne i subjektivne paradigme. To znači da djeca rekonstruiraju ono što postoji u društvenom svijetu na objektivnan način. Od onoga što znaju i otkriju oni stvaraju društvenu stvarnost računalne kulture koja im je prihvatljiva na subjektivnan način.
3. Obrazovni diskurs koji je karakterističan za dječju računalnu kulturu može se proučiti primjenom odgovarajuće ravnoteže kvalitativnog i kvantitativnog istraživanja, s tim da kvalitativno istraživanje ima viši prioritet omogućavajući nam da identificiramo subjektivni svijet dječje računalne kulture kroz osjetila same djece. Kvantitativno se istraživanje shvaća kao dodatno jer nam omogućava da potvrdimo sve što se može statistički provjeriti i dokazati. Istraživanje obrazovnog diskursa o dječjoj računalnoj kulturi daje nam također osjećaj za prioritete kvalitativnog istraživanja: određivanje društvenih, kulturnih i obrazovnih značenja svijeta djetinjstva i dječjih funkcija kao izvora znanstveno bitnih informacija, jer su informacije koje ona daju ne samo empirijski značajne, što je važno za svakodnevni život, već su i znanstveno i obrazovno važne.

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OBRAZOVNI DISKURS DJEČJE RAČUNALNE KULTURE U KONTEKSTU
KONSTRUKCIJE DRUŠTVENE ZBILJE

SAŽETAK

Pod uvjetima širenja društva informacija računalno je postala ne samo radni alat nego i sredstvo ispunjavanja slobodnog vremena i komunikacije, ali i sredstvo koje mijenja ljudske aktivnosti i tradicionalni način života. Kao aktivni sudionici ovog društva djeca se kroz kreaciju ali i putem njenog razumijevanja integriraju u društvo. Djeca sama stvaraju računalnu kulturu u skladu s povijesnim vremenu u kojem žive. Zbog toga je njihova kultura postmoderna, manje je normativna i sustavna. Unatoč prilično velikom broju istraživanja dječjih računalnih aktivnosti, premalo se pažnje posvećuje dječjoj računalnoj kulturi u cjelini isto kao i sociokulturnim obrazovnim fenomenima modernog društva. U pedagoškim istraživanjima problemu dječje računalne kulture najčešće se pristupa jednosmjerno gdje se najveća pažnja fokusira na pitanja o računalnoj pismenosti i opremljenosti škola s računalima. Kulturne posebnosti najčešće se identificiraju prema jednoj pojavi – dječjem igranju kompjuterskih igara. Osnovni problem istraživanja odnosi se na proučavanje konteksta obrazovnog diskursa dječje računalne kulture kao fenomena modernog informacijskog društva koji teoretski može biti utemeljen i empirijski ispitan primjenom kvalitativne i kvantitativne istraživačke metode i teorije konstrukcije društvene stvarnosti.

KLJUČNE RIJEČI: *dječja računalna kultura, konstrukcija društvene zbilje, konstrukcija i rekonstrukcija sociokulturnih obrazaca, kontekst obrazovnog diskursa, pedagoška istraživanja*

Prijevod članka na hrvatski jezik: David Veskadijaga

AN EDUCATIONAL DISCOURSE OF CHILDREN'S COMPUTER CULTURE IN THE CONTEXT OF THE CONSTRUCTION OF SOCIAL REALITY

SUMMARY

Under the conditions of the spread of the society of information a computer has become not only a tool of work but also a means of free time and communication as well as a part of the home which is changing the way of people's activities and their traditional life. Children are active participants of this society, integrating not only into its creation but also into its understanding. Children themselves create computer culture in tune to the historic time in which they live. That is why their culture is postmodern, less normative and systemic.

Despite quite a large amount of research of children's computer activities, there is a lack of attention paid to children's computer culture as a whole as a socio-cultural, educational phenomenon of modern society. In educational research the problem of children's computer culture is often researched in only one way, attributing the most importance to the question of computer literacy and the provision of computers in schools. Cultural peculiarities are often identified only according to one exceptional feature – children's playtime computer activities.

The problem of the research – the context of the educational discourse of children's computer culture as a phenomenon of the modern society of information, which can be theoretically based and empirically investigated by applying qualitative and quantitative research, the design of which has been fine-tuned, and the theory of the construction of social reality.

KEY WORDS: *children's computer culture, construction and reconstruction of social and cultural patterns, context of the educational discourse, educational research, construction of social reality*

