DIDACTICA
SLOVENICA
pedagoška obzorja

UDK 371/372
ISSN 0353-1392

DIDACTICA SLOVENICA

pedagoška obzorja

2014 letnik 29

2

Izdajatelji *Published by*
□ Pedagoška obzorja d.o.o. Novo mesto
□ Pedagoška fakulteta Ljubljana
□ Visokošolsko središče Novo mesto

Glavni in odgovorni urednik *Editor-in-Chief*
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Naslov uredništva in uprave *Editorial Office and Administration*
□ Didactica Slovenica – Pedagoška obzorja, Na Loko 2, p.p. 124, SI-8000 Novo mesto, Slovenija

Spletna stran revije *Website of the Journal*
□ http://www.pedagoska-obzorja.si/revija

Elektronski naslov *E-mail*
□ urednistvo@pedagoska-obzorja.si, editorial.office@didactica-slovenica.si

Revija Didactica Slovenica – Pedagoška obzorja je indeksirana in vključena v
Journal Didactica Slovenica – Pedagoška obzorja is indexed and included in
□ Social Sciences Citation Index®, Social Scisearch®, Journal Citation Reports / Social Sciences Edition (Thomson Reuters services)
□ American Psychological Association (PsycINFO)
□ International Bibliography of Periodical Literature / Internationale Bibliographie geistes- und sozialwissenshaftlischer Zeitschiftenliteratur (IBZ)
□ Internationale Bibliographie der Rezensionen geistes- und sozialwissenshaftlischer Literatur (IBR)
□ Elsevier Bibliographic Databases (SCOPUS, Embase, Engineering Village, Reaxys)
□ Co-operative Online Bibliographic System and Services (COBISS)

Izdajanje revije sofinancira Javna agencija za raziskovalno dejavnost Republike Slovenije.
The publication of the Journal is co-financed by the Public Research Agency of the Republic of Slovenia.

Naklada *Circulation*
□ 400

Tisk *Printed by*
□ Littera picta d.o.o. Ljubljana

2014 letnik 29

2 DIDACTICA SLOVENICA

pedagoška obzorja

znanstvena revija za didaktiko

VSEBINA

2014 volume 29

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pedagoška obzorja
scientific journal for didactics

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UDK 331.108.4:37

KLJUČNE BESEDE: čustvena inteligentnost, profesionalni razvoj, Mayer-Saloveyjev model čustvene inteligentnosti, pedagoški delavci

POVZETEK – V prispevku predstavljamo pomen in vlogo čustvene inteligentnosti (v nadaljevanju ČI) v profesionalnem razvoju pedagoškega delavca, kjer podrobneje analiziramo vprašanje opredelitve ČI in njene konceptualizacije v šolskem prostoru. Najprej orišemo Mayer-Saloveyjev model ČI in ga kot prvi skušamo aplicirati v šolski prostor. V besedilu izpostavljamo pomanjkanje programov za krepitev ČI pedagoških delavcev pri nas. Kljub strokovnemu prepoznavanju nujnosti krepitve ČI pedagoškega delavca do danes v Sloveniji še ni bil oblikovan in v sistem strokovnega spopolnjevanja in izobraževanja umeščen ustrezni program za razvoj ČI učiteljev in vzgojiteljev. Zato na tem področju slovenski šolski sistem še vedno ostaja v veliki meri izjemno podhranjen. Slednje dejstvo dodatno podpremo tudi z vsebinsko analizo Kataloga programov nadaljnjega izobraževanja in usposabljanja strokovnih delavcev v vzgoji in izobraževanju za šolska leta od 2005 do 2014/15 (MŠŠ), kjer smo se osredotočili predvsem na ključne besede: čustvena pismenost, čustvena inteligentnost, čustvena kompetentnost ipd. Ugotovili smo izrazito pomanjkanje programov za krepitev ČI pedagoških delavcev. V sklepnem delu predstavljamo predloge za nadaljnje izpopolnjevanje na področju ČI pedagoških delavcev v Sloveniji.

Scientific paper

UDC 331.108.4:37

KEYWORDS: emotional intelligence, professional development, Mayer-Salovey model of emotional intelligence, teachers

ABSTRACT – The paper presents the significance and the role of emotional intelligence (hereinafter EI) in the professional development of teachers. Firstly, we analyzed in detail the issue of the definition of EI and its conceptualization in the school environment. According to this we outlined the Mayer-Salovey model of EI, and administered it in the school premises. Consequently, we highlighted the lack of programmes for strengthening the EI of teachers in Slovenia. To date, in Slovenia, there has not yet been any systematic approach for the professional coaching and tuition of teachers for EI development. Although the profession clearly indicates the important role of teachers as socializers and supporters of the development of children's EI, the Slovenian education system in this area remains extremely underdeveloped. We supported this fact using a content analysis of the "Catalogue for continuing education and training for professionals in education for the school years from 2005 to 2014/15", where we focused on the key words: emotional literacy, emotional intelligence, emotional competence, etc. We found an extreme lack of programmes to enhance the EI of teachers. In conclusion, we present proposals for further training in the field of EI in the field of professional development for teachers in Slovenia.

1. Uvod

Profesionalni razvoj pedagoškega delavca je vseživljenjski proces, ki se začenja s poklicnim usposabljanjem ter nadaljuje skozi celotno poklicno pot posameznika. Gre za celovit proces rasti, kjer se na več ravneh medsebojno prepletajo tri temeljne kom-

ponente: osebna, socialna in poklicna. Izhajamo iz predpostavke, da osnovno strokovno izobraževanje ter stari modeli izobraževanja pedagoških delavcev, ki temeljijo predvsem na deklarativnem znanju, slednjih še zdaleč ne (z)morejo oborožiti z nujno potrebnim znanjem in kompetencami, ki jih potrebujejo pri svojem vsakdanjem delu. Številna interdisciplinarna znanja, veščine, razvijanje pedagoških in metakognitivnih spretnosti, povezanih z raziskovanjem, samoevalvacijo, kritično samorefleksijo, in pedagoško-psihološka orodja za uspešno poučevanje mora pedagoški delavec pridobiti le v procesu nadgradnje stalnega strokovnega izpopolnjevanja in usposabljanja v koherentni povezavi z neposredno učno izkušnjo. Skrb za profesionalni razvoj je namreč zelo pomembna, saj tisti, ki si želijo, da izobraževanje učiteljev in pedagoški poklic ostaneta takšna, kot sta, ne želijo, da ta poklic dejansko sploh obstane (Zelena knjiga o izobraževanju učiteljev v Evropi, 2001; Javornik Krečič, 2007).

Za pedagoške delavce je torej permanentni profesionalni razvoj nuja, saj znanje, pridobljeno v procesu usposabljanja, ne zadošča za reševanje različnih kompleksnih in nepredvidljivih situacij znotraj sodobne družbe in sodobnega pedagoškega dela (Brookfield, 2005; Goodson 2003; Persson; 2006). Menimo namreč, da je v profesionalnem razvoju pedagoškega delavca danes še posebej potrebno inteligentno ravnanje, ki v tem kontekstu pomeni smiselno, učinkovito in fleksibilno odzivanje na različne aktualne pedagoške situacije. Ob zavedanju specifičnosti pedagoškega poklica, ki je izpostavljeno intenzivnim medosebnim interakcijam in medsebojnemu prilagajanju, menimo, da je prav čustvena (in socialna) inteligentnost učitelja tisti element profesionalnega razvoja, ki pomeni nujni osnovni pogoj za kvalitetno delovanje v pedagoškem prostoru.

2. Čustvena inteligentnost: opredelitve in dileme pri raziskovanju

Pojem čustvena inteligentnost (v nadaljevanju ČI), ki sta ga v začetku devetdesetih let prejšnjega stoletja uvedla Peter Salovey in John D. Mayer (1990), je do danes prešel skozi velik del znanstvenega koncipiranja in empiričnega preverjanja. Altaras Dimitrijević in Jolić Marjanovič (2010) menita, da so bili pri raziskovanju ČI narejeni trije pomembni znanstveni koraki: prvič, vzpostavljena je bila jasna razlika v dveh načinih konceptualizacije in operacionalizacije ČI ter s tem osnovan nujni osnovni pogoj za osredotočeno razpravo o znanstveni vrednosti tega konstrukta; drugič, razjasnjeni so bili pomembni kriteriji za postuliranje znanstveno sprejemljivega konstrukta ČI in tretjič, vsi omenjeni modeli ČI so bili do danes glede na omenjene kriterije že izpostavljeni teoretični in empirični evalvaciji. Za namene prispevka je pomembno omeniti zgolj prvi pomemben doprinos znanstvenega raziskovanja, ki ga poudarjata Altaras Dimitrijevićeva in Jolić Marjanovićeva (2010). Teoretično in empirično raziskovanje koncepta ČI je do danes jasno razmejil dvojno pojmovanje ČI, in sicer "model ČI kot sposobnost" (ability models) ter "mešanih modelov ČI" (mixed models) (Mayer, Salovey in Caruso, 2000). Prva skupina modelov (npr. Mayer-Saloveyjev

model ČI) opredeljuje ČI kot sposobnost predelave čustvenih informacij, medtem ko druga skupina modelov (npr. Bar-On in Golemanov model) ČI definira kot skupino raznovrstnih psiholoških značilnosti (intelektualnih, osebnostnih, dispozicionalnih in vedenjskih kvalitet), katerih rezultat je uspešno čustveno delovanje (po Altaras Dimitrijević in Jolić Marjanović, 2010). Podobno kategorizacijo ponujajo tudi drugi avtorji (npr. Perez, Petrides in Frunham, 2005; Petrides, Furnham in Mavoreli, 2007, po Altaras Dimitrijević in Jolić Marjanović, 2010), ki predlagajo razločevanje ČI kot "sposobnosti" ("ability EI") in ČI kot "osebnostne poteze" ("trait EI").

Upoštevajoč dejstvo, da je čustvena inteligentnost kot "inteligentnost" opredeljena zgolj v prvem, Mayer-Saloveyjevem modelu ČI, se bomo v nadaljevanju prispevka osredotočili samo na tovrstno definiranje ČI. Drugi, t.i. mešani modeli ČI ali modeli, ki ČI opredeljujejo kot osebnostno značilnost, so bili zaradi svoje nedodelanosti, empirične nepreverjenosti in metrično pomanjkljivih značilnosti izpostavljeni mnogim kritikam. Nekateri avtorji namreč menijo (Pečjak in Avsec, 2003, Altaras Dimitrijević in Jović Marjanovič, 2010), da na primer Goleman v svojih definicijah ČI kot osebnostne značilnosti zajema široke in le deloma prekrivajoče se opredelitve, katerih posledica je, da avtor s tem zajema skoraj celotno osebnost. Vključuje namreč motivacijske značilnosti, čustva in značilnosti vedenjskega področja ter posledično oblikuje koncept, ki ima dvomljivo konstruktno-diskriminativno veljavnost. Drugi kritiki (Zeidner, Roberts, Matthews, 2002) Golemanovega koncepta menijo, da med predlaganimi komponentami ne opiše splošnega konstrukta ČI, niti ga ne diferencira od drugih osebnostnih potez ali sposobnosti, ki se povezujejo s prepoznavo in regulacijo čustev ipd. Zato številni avtorji v svojih delih poudarjajo, da Golemanove teorije ČI ne bi smeli obravnavati kot znanstvene (Davies, Stankov in Roberts, 1998; Mayer in Cobb, 2000; Waterhouse, 2006), saj do danes še vedno ostaja predvsem laično popularni in komercialno zanimivi koncept.

3. Čustvena inteligentnost kot sposobnost procesiranja informacij, povezanih z emocijami

Salovey in Mayer (1990) sta ČI definirala kot sposobnost opazovanja lastnih čustev in čustev drugih, sposobnost diskriminacije med njimi in uporabe čustvenih informacij z namenom usmerjanja mišljenja in vedenja posameznika. Opredelita jo s tremi adaptivnimi sposobnostmi, in sicer s:

- sposobnostjo ocenjevanja in izražanja čustev pri sebi in drugih (verbalno in neverbalno),
- sposobnostjo nadzorovanja čustev pri sebi in drugih ter
- sposobnostjo uporabe čustev pri reševanju problemov in odločanju (npr. pri fleksibilnem načrtovanju, kreativnem mišljenju, nedirektivni pozornosti in motivaciji).

Svoj model sta sicer leta 1997 nekoliko preoblikovala in bolj poudarila kognitivne komponente ČI v smislu potenciala za intelektualno in čustveno rast.

Model zajema štiri vrste hierarhično razporejenih sposobnosti na področju čustev (glej slika 1, povzeto po Pečjak in Avsec, 2003), ki jih predstavljamo v nadaljevanju:

- zaznavanje, ocenjevanje in izražanje čustev,
- čustveno spodbujanje mišljenja,
- razumevanje, analiziranje in uporaba čustvenega znanja in
- refleksivni nadzor čustev za spodbujanje čustvene in intelektualne rasti.

V nadaljevanju sta avtorja štiri področja razdelala najprej po dveh oseh (Mayer in Salovey, 1997, po Pečjak in Avsec, 2003). Vertikalna os predstavlja komponento *kompleksnosti čustvenih procesov* od najnižjih, relativno enostavnih sposobnosti čustvenega zaznavanja in izražanja pa vse do kompleksnih procesov zavestnega, refleksivnega nadzora čustev. Horizontalna os pomeni *razvojni vidik čustvenih procesov*, kjer avtorja predstavita na vsaki ravni po štiri reprezentativne sposobnosti, razporejene po razvojnem načelu: od tistih, ki se razvojno pojavijo prej (levo razvrščene), do tistih, ki se v razvoju pojavijo kasneje (desno razvrščene).

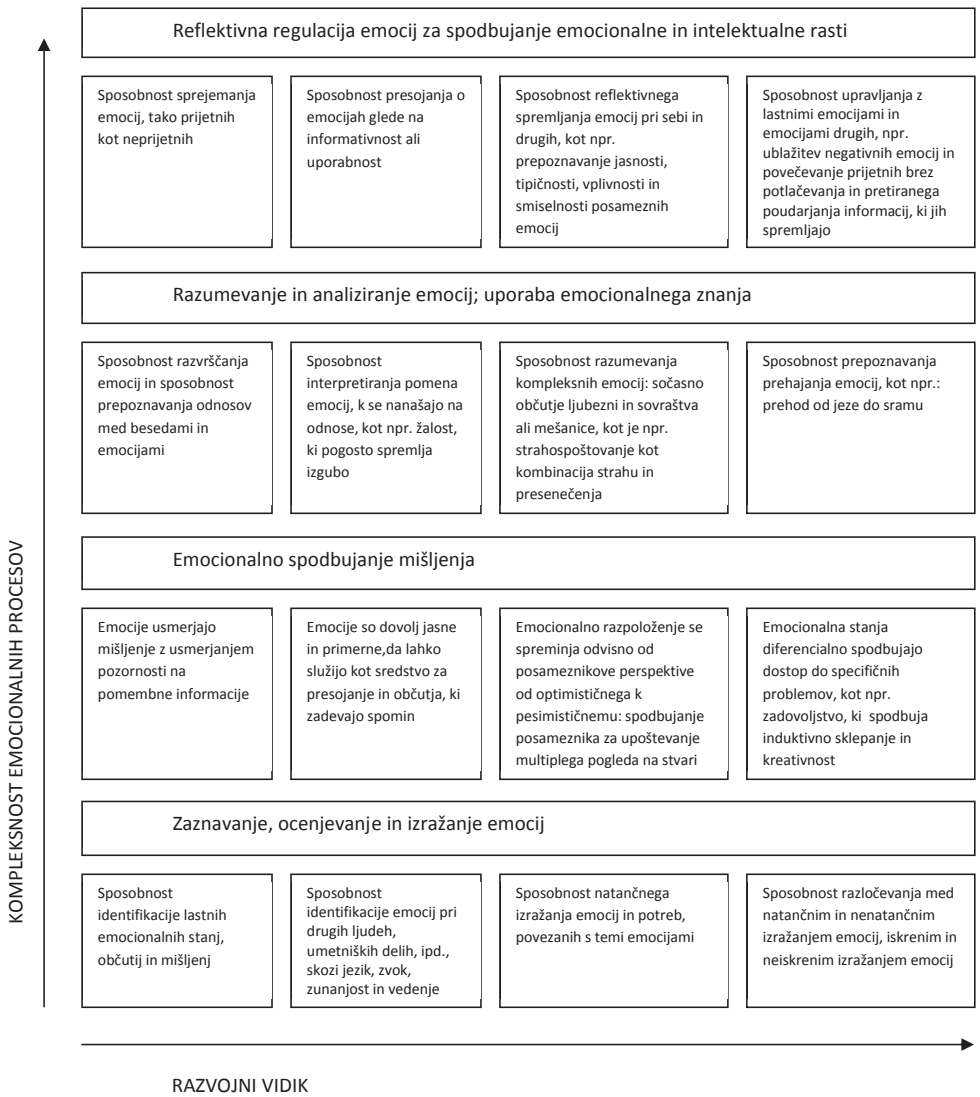
Prva raven se nanaša na *zaznavanje in ocenjevanje ter razvrščanje čustev*. Gre za posameznikovo sposobnost, da prepozna lastna čustva, jih poimenuje in zmore čim natančneje izraziti. Prav tako naj bi posameznik znal zaznati in identificirati čustva, čustvena stanja, občutja in potrebe drugih ljudi ter razločevati natančna in nenatančna ter iskrena in neiskrena izražanja le-teh. Aplikacija prve ravni čustvene inteligentnosti v pedagoški situaciji bi pomenila, da pedagoški delavec v vsakodnevni situaciji prepoznava, kakšna čustvena stanja sprožajo določene aktualne pedagoške situacije v njem in v otrocih, ta čustvena stanja zna identificirati in poimenovati.

Na drugi ravni sta avtorja opredelila posameznikove *sposobnosti za čustveno spodbujanje mišljenja, usmerjanje in ohranjanje pozornosti*. Številne empirične študije namreč kažejo, da čustva vplivajo na kognicijo: kadar je oseba vesela, delujejo pozitivno na uspešnost reševanja (miselnih) nalog, kadar je žalostna, pa negativno (Forgas, 1995; Mayer, Gaschke, Braverman in Evans, 1992; Mayer in Hanson, 1995). V pedagoški situaciji naj bi tako pedagoški delavec pri sebi znal prepoznati, kako določeno čustveno stanje spodbuja ali ovira njegovo motivacijo za delo, njegovo zbranost pri posredovanju učne snovi, oblikovanju učnih situacij, preverjanju in ocenjevanju znanja itd. Pedagoški delavec, ki zna in zmore delovati na drugi stopnji čustvene inteligentnosti, učinkovito razbere tudi vpliv otrokovih čustvenih stanj na njegovo kognitivno delovanje. Pedagoški delavec s tem znanjem in vedenjem lahko učinkovito oblikuje delovne in učne situacije tudi upoštevajoč otrokova hitro menjajoča se čustvena stanja ter posledično stopnjo pozornosti, zbranosti in kognitivnega funkcioniranja.

Tretja raven kompleksnosti čustvene inteligentnosti se nanaša na *razumevanje in analizo čustev ter uporabo in razvijanje čustvenega znanja*. Pridobivanje čustvenega znanja se začne že od otroštva dalje v otrokovi družini, k temu pa kot sekundarni

agens socializacije pristopi tudi vrtec in šola kot inštitucija. Posledično se socializacijske zahteve po modeliranju ustreznega čustvovanja prenesejo tudi na vzgojitelje in učitelje (Denham, Basset in Zinsser, 2012).

Slika 1: Področja emocionalne inteligentnosti (Mayer in Salovey, 1997, povzeto po Pečjak in Avsec, 2003)



Ko se otrok nauči prepoznavati različna čustva, postopoma začne razlikovati intenzitete posameznih čustev, jih začne povezovati z različnimi situacijami, v katerih se posamezna čustva porajajo, ter razumeva, da se lahko v določenih situacijah sočasno pojavijo nasprotujoči si čustva ali pa s kombinacijo enostavnih nastajajo kompleksnejša. Pedagoški delavec, ki razvije kompleksnost svoje čustvene inteligentnosti do tretje ravni, prepoznava, razume in sprejme morebitno ambivalentnost v svojem čustvovanju na delovnem mestu. Toleranten je tudi do čustvene labilnosti otrok, katerih čustvena stanja se pogosto menjajo in posledično spreminjajo čustveno vzdušje v razredu (skupini). Pedagoški delavec tako zna in zmore pri sebi in pri otrocih analitično spremljati in sprejeti prehajanje različnih čustvenih stanj, vezanih na medsebojne odnose v skupini ali pa na konkretne pedagoške situacije.

Četrta raven predstavljenega modela, *refleksivni nadzor čustev za spodbujanje intelektualne in čustvene rasti*, pa pomeni najvišjo in najkompleksnejšo raven ČI. Le samozavedanje lastnih čustev in zavedanje čustev drugih lahko privede do refleksije čustev. Slednje vodi do možne tolerance neželenih čustvenih stanj pri sebi ali drugih in nadzorovanja čustvenih reakcij. Pedagoški delavec, ki funkcionira na četrti ravni ČI, tako zmore ustrezno reagirati v različnih situacijah ter je sposoben reflektiranja lastnih razpoloženjskih izkušenj, čustev ter izkušenj o razpoloženjih in čustvih drugih ljudi. Refleksija lastnih čustvenih razpoloženj tako pomeni sposobnost razumevanja in posledično tudi predvidevanja in uravnavanja pedagoških situacij, ki v njem sprožajo specifične (morebiti tudi potencialno neučinkovite) čustvene reakcije. Posledično pa pedagoški delavec poleg drugega s tem tudi zmanjšuje čustveni stres na delovnem mestu ob različnih čustveno zahtevnih nalogah (npr. delo z otroki s posebnimi potrebami, Štemberger, 2013).

4. Šolski programi čustvene inteligentnosti za otroke

Aplikacija koncepta ČI je zaradi svoje popularnosti hitro dobila svoj prostor v vzgojno-izobraževalnih inštitucijah. V devetdesetih letih prejšnjega stoletja, ko je Goleman na osnovi teorije Mayer-Saloveyjeve objavil in populariziral koncept ČI, je področje izobraževanja v ZDA preplavila ponudba najrazličnejših programov, ki naj bi razvijale in krepile ČI otrok v šolah na vseh stopnjah izobraževanja. Po nekaterih podatkih, ki jih podaja Univerza v Illinoisu, naj bi samo v tistem okrožju tisoče šol uporabljajo več kot 150 različnih vrst programov (Zeidner, Roberts, Matthews, 2002), katerih bistveni cilj je bil spodbuditi razvoj ČI in njenih pozitivnih vplivov na vsa področja otrokovega delovanja. Posledično je nastal pojem tako imenovane *čustvene pismenosti*, ki ga stroka uporablja, ko želi poudarjati aplikacijo ČI v različnih okoljih, najpogosteje pa na področju vzgoje in izobraževanja. Pod tem pojmom avtorji najrazličnejših programov brez jasne ločnice in nekritično združujejo mnoge koncepte, kot so čustvena inteligentnost, čustvena kompetentnost, socialna kompetentnost ipd. In

predvsem v ZDA se navadno najrazličnejši programi za razvoj čustvene in/ali socialne kompetentnosti danes poimenujejo kar s "krovnim" izrazom – čustvena pismenost.

Program čustvene pismenosti (Bocchino, 1999), ki se je osredotočal predvsem na otroke, naj bi vseboval tri večje skupine strategij, ki naj bi vodile k večji čustveni pismenosti posameznika:

- dejavnosti za razumevanje in uravnavanje čustev pri sebi in drugih, katerih namen je otrokom pojasnjevati in pokazati izvor čustev ter opozoriti na fiziološke reakcije ob pojavljanju posameznih čustev pri sebi in pri drugih;
- dejavnosti za razvoj učinkovitih komunikacijskih strategij, kot so strategije učinkovitega poslušanja, spretnosti natančnega oblikovanja sporočanja in različne medosebne spretnosti;
- dejavnosti za razvoj notranje kontrole pri učencih – s temi učenci urijo spretnosti in tehnike za uporabo načrta notranje kontrole in spoznavajo pomen teorije atribucij za svojo lastno notranjo kontrolo.

Bocchino (1999) meni, da bi morali zgoraj omenjene dejavnosti integrirati v vsakodnevne razredne aktivnosti in jih s pomočjo modeliranja in ojačevanja posameznih vrst čustveno pismenega vedenja postopoma prenašati na učence.

Najpogosteje omenjena (preventivna) programa pri razvijanju koncepta čustvene pismenosti pa sta SEL (Socialno emocionalno učenje; Social emotional learning, Graczyk idr., 2000; po Bar-On in Parker, 2000) in CASEL – Sodelovanje za pospeševanje socialnega in čustvenega učenja (Collaborative to Advance Social and Emotional Learning). Oba temeljita na predpostavki, da lahko vsi učenci izboljšajo svoje vedenje tako, da postanejo bolj odgovorni in učinkoviti pri reševanju problemov ter se lahko bolj učinkovito spoprijemajo z vsakodnevnimi stresnimi dogodki (po Pečjak in Košir, 2002). Pri tem uporabljata temeljne strategije, kot so spodbujanje in razvoj soodvisnosti med učenci, pomoč učencem, da dobijo občutek kontrole nad lastnim življenjem, učenje učencev učinkovitega spoprijemanja s stresom, nudenje pomoči učencu za doseganje njegovi razvojni stopnji primernih izkušenj (npr. dobiti prijatelja, učinkovito komunicirati ipd). Ugotovimo lahko, da se zgornja programa le deloma osredotočata na ČI in v večjem delu skušata vplivati predvsem na otrokovo socialno kompetentnost (Čotar Konrad, 2011).

Zagovorniki koncepta ČI in razvijanja čustvene pismenosti pravijo, da dosedanja evalvacija programov pokaže kar nekaj dobrih rezultatov, ki so jih šole s tovrstnimi programi dosegle. Tako nekateri avtorji (Cherniss, Exein, Goleman, Weissberg, 2006) povzemajo rezultate raziskav, ki poročajo o izboljšanju samozavedanja in samozaupanja učencev, ki se kaže kot višja motivacija za delo, bolj realistično postavljanje ciljev, uravnavanje stresa, boljše organizacijske spretnosti, učinkovitejše reševanje konfliktov ipd. Po drugi strani pa naj bi metaanalize študij pokazale, da se je na šolah, kjer so izvajali tovrstne programe, pomembno znižala stopnja antisocialnega vedenja in agresivnosti, disciplinskih težav v razredih, zlorabe alkohola in nedovoljenih drog, izostajanje od pouka, izboljšala pa stopnja samospoštovanja učencev, njihovih

medvrstniških odnosov, obogatili so besedni zaklad, povezan z izražanjem čustev, izboljšale so se socialne, komunikacijske spretnosti, načini reševanja problemov in asertivnost (prav tam, 2006).

Nasprotno nekateri podatki študij kažejo dvoumne rezultate, saj naj SEL ne bi kazal na izboljšave učnega uspeha, kar naj bi bila posledica kvalitetnejših socialno-čustvenih odnosov. Podrobna analiza zgoraj navedenih rezultatov tako odkrije, da so med njimi izboljšane le redke spretnosti, ki jih zajemajo komponente ČI, saj se večinoma bolj nanašajo na socialne spretnosti, treninge asertivnosti in reševanja konfliktov ter učinkovitega spoprijemanja z vsakodnevnimi težavami. Posledično kritiki opozarjajo na množico težav, zaradi katerih menijo, da obstoječi programi razvoja čustvene pismenosti nikakor ne prinašajo tistega, kar (tudi komercialno zanimivo) obeta njihovo poimenovanje.

5. Programi čustvene inteligentnosti za pedagoške delavce

Ne glede na omenjene programe je krepitev ČI otrok gotovo lahko le posledica delovanja čustveno inteligentnega pedagoškega delavca in naravnanosti celotne šole k oblikovanju spodbudne čustvenega vzdušja nasploh. V zadnjem desetletju je vprašanje o učiteljevih sposobnostih za procesiranje informacij, povezanih s čustvi, predmet mnogih raziskav, ki ugotavljajo pomembne učinke čustvenega ozaveščanja tako za učitelje, vzgojitelje in otroke.

Študije o razvoju ČI poročajo, da je dobršen del razvoja ČI pod vplivom sociokulturnih dejavnikov. Analogno konceptu Cattel-Hornove kristalizirane inteligentnosti (Schneider in McGrew, 2012), ki ima kar nekaj skupnih točk s ČI, je tudi razvoj ČI ob dednih predispozicijah predvsem posledica jezikovno in modelno posredovanih informacij iz okolja (npr. pravila izražanja in nadzora čustev). Prav slednje spoznanje pa pri razvoju ČI poudarja pomembno vlogo primarnih in sekundarnih agensov socializacije. Podobno navajajo tudi Zeidner, Matthews in Roberts (2009), ki govorijo o večnivojskem investicijskem modelu za razvijanje ČI (ang. *multi-level investment model*). ČI naj bi se razvijala na osnovi operacionalizacije delovanja različnih dejavnikov na treh ravneh:

- biološko osnovanih posameznikovih temperamentnih značilnosti,
- čustvenega učenja skozi procese socializacije v družini in pa preko
- strateškega čustvenega učenja s pomočjo vodenja in poučevanja, katerega cilj je doseganje reflektivnih samoregulatornih procesov (prav tam).

Za naš prispevek je pomembno strateško čustveno učenje s pomočjo vodenja (*coaching*) in poučevanja (*tuition*), saj pomeni možnosti učenja ČI ne samo v otroštvu, ampak tudi v odrasli dobi. S tem pridobivamo pomembne teoretično utemeljene osnove in izobraževalni prostor za razvoj kvalitetnih in strokovno vodenih programov ČI

za pedagoške delavce. Menimo namreč, da bi oblikovanje strokovno zasnovanih (in ne komercialno uspešnih, čemur smo priča danes) in ustrezno izvedenih programov, ki bi krepili in razvijali ČI pedagoških delavcev, pomembno spodbudili kakovost njihovega profesionalnega razvoja.

Za namene študije smo izvedli vsebinsko analizo programov v *Katalogu programov stalnega strokovnega spopolnjevanja za pedagoške delavce*, ki so bili pedagoškim delavcem ponujeni za izobraževanje v Sloveniji v šolskih letih od 2005 do 2014/2015. Cilj opisne in pojasnjevalne neeksperimentalne metode pedagoškega raziskovanja, dopolnjene s tehniko analize vsebine, je bil predstavitev ponujenih možnosti, ki jih imajo pedagoški delavci pri nadaljnjem izobraževanju in strokovnem spopolnjevanju na področju ČI. Zanimalo nas je predvsem, ali področja stalnega strokovnega spopolnjevanja za pedagoške delavce osveščajo in poudarjajo pomen ČI v njihovem profesionalnem razvoju. Z metodo analize vsebine smo se v Katalogu osredotočili predvsem na naslednje ključne besede: čustvena pismenost, čustvena inteligentnost, čustvena kompetentnost ipd., torej na tiste ključne besede, ki so v slovenskem izobraževalnem prostoru na področju ČI v najpogostejši (sicer nestrokovno razmejeni) rabi. Analiza programov za strokovno spopolnjevanje in izobraževanje pedagoških delavcev v Sloveniji, katerih osnovni cilj je profesionalni razvoj ter strokovna in osebnostna rast pedagoškega delavca, pokaže, da ponujeni PSD programi izjemno slabo pokrivajo področje ČI pedagoških delavcev (glej tabelo 1).

Tabela 1: Primerjave med številom vseh razpisanih programov spopolnjevanja pedagoških delavcev in številom razpisanih programov na področju čustvene pismenosti

Študijsko leto	*Število vseh razpisanih programov*	*Število razpisanih programov na področju čustvene pismenosti*
2005/2006	329	0
2006/2007	259	0
2007/2008	395	0
2008/2009	287	0
2009/2010	274	2
2010/2011	338	0
2011/2012	314	0
2012/2013	258	1
2013/2014	262	0
2014/2015	243	1
Skupaj	2959	4

Glede na izjemno majhno število razpisanih programov na področju ČI pedagoških delavcev lahko sklepamo na veliko podhranjenost omenjenega področja. Ob tem se samo ponuja vprašanje o kvaliteti in razvoju ČI pedagoških delavcev. Zdi se, da so čustvene kompetence, kot izjemno pomemben del profesionalnega razvoja, v celoti prepuščene čustveni zrelosti vsakega posameznega pedagoškega delavca ali pa občasnim, komercialnim, laičnim in ad hoc oblikovanim motivacijskim programom. Ob tem ugotavljamo veliko sistemsko praznino v strokovnem spopolnjevanju in izobraževanju pedagoških delavcev v Sloveniji na področju spodbujanja ČI. Menimo, da je kljub dejstvu, ko novejše študije poudarjajo izjemno pomembno socializacijsko vlogo pedagoških delavcev pri razvoju ČI otrok (Denham, Basset in Zinsser, 2012), v Sloveniji prepoznana vloga ČI v profesionalnem razvoju pedagoškega delavca na zaskrbljujoči ravni.

Pedagoški delavec namreč kot *model izražanja, nadzorovanja čustev in poučevanja o čustvih* lahko samo na osnovi lastnih visoko razvitih čustvenih kompetenc zna in zmore učinkovito krepiti tudi čustvene kompetence otrok. Celo več, kot poudarjata Pečjak in Košir (2002, str. 122) "vloga šole ni zgolj v tem, da kot izobraževalna institucija (na)uči učence temeljnih spretnosti, kot so računanje, branje in pisanje, pač pa je pomembno tudi njeno vzgojno poslanstvo, preko katerega naj bi poskušala usposobiti učence za učinkovito (so)bivanje z drugimi. Slednje od šole kot sistema zahteva, da pomaga učencem razvijati njihova osebna stališča, vrednote in medosebne kompetentnosti, kot sta tudi socialna in čustvena kompetentnost, ki pomenijo temelj za različne socialne vloge (sošolec, prijatelj, sodelavec ipd), s katerimi se učenci v življenju srečujejo. Šola naj bi bila za družino prvo okolje, kjer bi lahko otrok varno preizkušal in uril svoje čustvene in socialne kompetence ter tako pridobival starosti primerne pozitivne izkušnje." Navsezadnje, izhajamo iz predpostavke, da samo socialno-čustveno zrel pedagoški delavec lahko utre pot h kakovostnejšemu poučevanju, saj so pri njem kot tudi pri učencih socialno-čustvene spretnosti temeljno povezane s kognitivnimi. Temeljni pogoj za to ni samo dobra strokovna usposobljenost v metodah in tehnikah vzgojno-izobraževalnega dela, temveč bogate življenjske izkušnje, pozitivne moralne lastnosti, bogata pedagoška praksa, življenjska socialno-čustvena zrelost ter uravnoteženost njegovega delovanja nasploh (Kukanja Gabrijelčič, 2010).

6. Sklep

Kritičen pogled na množico ponujenih programov za razvoj ČI pokaže kar nekaj šibkih točk obstoječih rešitev. Dejstvo je namreč, da so zagovorniki ČI pomembno prispevali k trendu vnašanja čustvene pismenosti v šole (in v učenje) in pomenljivo opozorili na dolgo zanemarjeno pomembno vlogo čustvenih in socialnih dejavnikov v (pretirano "kognitiviziranem in intelektualiziranem") šolskem (vrtčevskem) prostoru. Ob tem so šoli (vrtcu) dodali novo dimenzijo, ker so jo označili kot enega bistvenih in za otroka nenadomestljivih okolij za učenje in poučevanje ČI, za trening

socialnih veščin ter zdrav čustveni razvoj. Pomembnost tega dejstva sicer veča naraščajoče število raziskav ČI v šolskem kontekstu in programov ozaveščanja o čustveni tematiki, ki pa so večinoma usmerjene na otroke. Šele v zadnjem času se v tujini veča tudi število programov za izboljšanje ČI pedagoških delavcev, medtem ko je v slovenskem sistemu izobraževanja in strokovnega spopolnjevanja pedagoških delavcev ČI še vedno docela spregledana.

Menimo, da profesionalni razvoj pedagoškega delavca ni in ne more biti celovit brez krepitve njegove ČI. Posledično predlagamo možnosti izboljšave krepitve ČI pedagoškega delavca na sistemski ravni. To namreč lahko dosežemo le s sistematičnim in načrtovanim pristopom k oblikovanju programov ČI s strani stroke (doslej so prepogosto še vedno prepuščeni laični javnosti), ki bi osnovala ČI intervencije na osnovi preverjenega konceptualnega okvira, natančno začrtala cilje programa in sposobnosti, ki jih želimo s programom krepiti, ter identificirala značilnosti (izobraževalne, sociokulturne, razvojne) konteksta implementacije programa. Tako pripravljen program bi lahko vpeljali v izobraževalni sistem kot celostno integriran koncept, ki bi ga v okviru rednega strokovnega spopolnjevanja pedagoških delavcev in profesionalnega razvoja učiteljev izvajali izključno ustrezno usposobljeni strokovnjaki.

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The importance of emotional intelligence in a teacher's professional development

The paper highlights the significance and the role of emotional intelligence (EI) in a teachers' professional development. For teachers, continuous professional development is a necessity; because the competences teachers gain during the in-training do not provide enough knowledge and skills for them to cope with the various complex and unpredictable situations within modern society and modern pedagogical work (Brookfield, 2005, Goodson, 2003, Persson, 2006). We believe that the teachers' professional development today demands intelligent behaviour, which, in an educational context, means a sensible, efficient and flexible manner in various teaching situations. Knowing and understanding the specifics of the teaching profession, which is subject to intense interpersonal interaction and mutual adaptation, we believe that emotional intelligence is also an important element of a teachers' professional development. We also believe EI is a prerequisite for high-quality performance in the educational field.

The article first focuses on the problem of the theoretical and empirical research of the concept of EI. To date, scientists have defined the dual conception of EI, namely "ability models" as well as "mixed models EI" (Mayer, Salovey and Caruso, 2000). The first group of models (e.g. Mayer-Salovey model EI) defined EI as the ability to process emotional information, whereas the second group of models (e.g. Bar-On's model or Goleman's model) defined EI as a group of diverse psychological characteristics (intel-

lectual, personal, and behavioural dispositional qualities), which resulted in successful emotional functioning (Altaras Dimitrijević and Jolić Marjanović, 2010). Considering the lack of theoretical and empirical argument of "trait EI models", we decided to apply Mayer-Salovey's model of EI in educational practice. Some authors argue (e.g. Altaras Dimitrijevic and Jolić Marjanovič, 2010) that Goleman's definition of EI covered wide and overlapping definitions which meant that the EI definition included almost the entire personality. Consequently, the constructive-discriminative validity of the formulation is doubted. Therefore, a number of authors (e.g. Mayer and Cobb, 2000; Waterhouse, 2006), emphasize that Goleman's EI theory should not be regarded as a scientific one, but primarily as a popular one with some commercial interests.

On the other hand, Mayer and Salovey (1997) defined EI as one's capacity for monitoring his/her own emotions and the emotions of others, the ability to discriminate between emotions and use the emotional information to direct the thinking and behaviour of individuals. Authors (ibid.) identify three adaptive abilities people can possess, namely the ability to evaluate and express their own emotions, as well as the emotions of others (verbal and nonverbal), the ability to control their own emotions and the emotions of others, and the ability to use emotions to solve problems and to make decisions (e.g. in flexible planning, creative thinking, nondirective attention and motivation). The four areas were further divided into two axes (Mayer and Salovey, 1997, Pečjak and Avsec, 2003). The vertical axis represents the complexity of the emotional component processes of the lowest, relatively simple skills of emotional perception and expression, all the way to the complex processes of the conscious, reflexive control of emotions. The horizontal axis represents the developmental aspects of the emotional processes, in which the authors present each level of four representative abilities, sorted by the principle of development: from those who appear earlier in a person's development to those who emerge later in a person's development.

The application of EI in the educational context at the first level would mean that a teacher in everyday situations recognizes, identifies and names the emotional states that arise from certain educational situations in them or in the children. At the second level, a teacher is able to recognize how certain emotional states help or hinder his/her motivation, his/her composure in providing teaching materials, design of teaching and learning, assessment, grading, etc. The teacher, who functions at the second stage of emotional intelligence, can effectively "read" the impact of the emotional states of the child on the child's cognitive functioning. A teacher possessing this level of emotional knowledge can create specific learning situations which can take into account the child's rapid intermittent emotional states, and consequently, the child's level of attention, concentration and cognitive functioning. At the third level of EI, the teacher can tolerate and use the child's emotional liability, which affects the emotional climate of the whole group. The teacher analyzes the emotional states connected to interpersonal relations or specific educational situations. Finally, the fourth level of EI represents the reflective control of emotions in order to support and provide intellectual and emotional growth. The reflection of the teacher's own emotional states means the ability to understand and, consequently, forecast and manage educational situations, which raise spe-

cific (possibly potentially ineffective) emotional reactions in the teacher. As a result, the ability to reflect emotions reduces the possibility for emotional stress in the workplace during different emotionally demanding tasks (e.g. working with children with special needs, Stemberger, 2013).

The application of the concept of emotional intelligence in a variety of settings, especially in the field of education, has conceived a new term called "the emotional literacy". Under this concept, the authors, with no clear dividing line and bring together uncritically many concepts such as emotional intelligence, emotional competence, social competence, etc. In the USA especially, it is common that a wide variety of programmes aimed at developing emotional and/or social competence today are named with the "umbrella" term – emotional literacy.

The programme of emotional literacy (Bocchino, 1999), which focused primarily on children, should contain three major groups of strategies, which should lead to a greater emotional literacy of individuals:

- *activities of understanding and regulating emotions in yourself and others, where the purpose of the programmes for children was to explain and demonstrate the origin of emotions and physiological reactions noted in the occurrence of individual emotions in themselves and others;*
- *activities to develop effective communication strategies, such as strategies for effective listening, communication skills and a variety of interpersonal skills;*
- *activities for the development of internal control in students – these students were trained in the skills and techniques to use their internal control and learn the importance of attribution theory for their own internal control.*

Bocchino (1999) believes that all the mentioned activities should be integrated into everyday classroom activities and by using modelling and the amplification of certain types; emotional behaviour will be gradually transferred to the students.

The application of EI programmes in education has so far been realized in two directions: working with children and working with adults in the educational system. The most frequently mentioned (preventive) programmes to develop the concept of EI for children are SEL (Social emotional learning, Graczyk et al., 2000; according to Bar-On and Parker, 2000) and CASEL – Collaborative to Advance Social and Emotional Learning). Both of them are based on the premise that all students improve their behaviour so that they become more accountable and efficient in solving problems and can cope with everyday stressful events more effectively (Pečjak and Košir, 2002). Using basic strategies such as the promotion and development of interdependence among children will help them to get a sense of control over their own lives. Even more, children learn how to effectively cope with stress and gain appropriate social experience according to their developmental needs (e.g. get a friend, efficiently communicate, etc.). But, on the other hand, the critical evaluation of the CASEL programme shows that because of its undifferentiated goals the programme mostly influences a child's social competence and only partly deals with the development of the child's EI.

To conclude, on one hand we have pointed out the already established EI programmes for children, but on the other hand we have highlighted the lack of programmes aimed at strengthening the EI of teachers in Slovenia. Despite the professional consensus about the necessity for strengthening EI in the teachers' professional development, to date in Slovenia there has not been established any systematic approach for professional coaching and tuition of teachers for EI development yet. Although the educational professionals clearly indicate the teacher's important roles as socializers and supporters of the development of children's EI, the Slovenian education system remains extremely underdeveloped in this area. This claim is empirically proved by the content analysis of the "Catalogue for continuing education and training for professionals in education for the school years from 2005 to 2014/15 (MES)". The focus of the analysis was on the key words such as "emotional literacy, emotional intelligence, emotional competence", etc. The results confirm the extreme lack of programmes to enhance the teachers' EI. The fact is that teachers were offered a total of three thousand in-service programmes, and only four of them focused on EI.

At the end of the article we offer some suggestions for the further strategic development of EI tuition and coaching for teachers in the field of professional development in education in Slovenia. Given the extremely small number of programmes offered in the field of emotional intelligence for teachers, we can assume that the quality and development of EI in teachers can be seriously questioned. It appears that emotional competence, despite being an extremely important part of a teacher's professional development, is still entirely left to the emotional maturity of an individual teacher or to the occasional commercial, secular and ad hoc designed motivational programmes. We believe that despite the fact that recent studies have emphasized the importance of a teacher's socialization role in developing the EI of children (Denham, Basset and Zinsser, 2012) in Slovenia, the role of emotional intelligence in a teachers' professional development is still insufficiently recognized.

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Comparison of the model of Elkonyin and Davidov and the model of Zankov

Znanstveni članek

UDK 37.091.33

KLJUČNE BESEDE: razvijanje poučevanja in učenja, duševni razvoj učencev, območje bližnjega razvoja, empirično znanje in razmišljanje, teoretično znanje in razmišljanje

POVZETEK – V prispevku smo na kratko navedli osnovne značilnosti in pomanjkljivosti tradicionalnega poučevanja ter osnovna teoretična stališča o povezavi med učenjem in razvojem. L.S. Vygotsky ni sprejel teze, da sta učenje in razvoj neodvisna procesa, ter da mora priti do razvoja pred učenjem. Na kratko je pojasnjen njegov koncept območja bližnjega razvoja. Na podlagi njegovega teoretičnega dela in raziskav obstajajo modeli za razvijanje učenja in poučevanja, o katerih se je veliko razpravljalo v Sovjetski Rusiji, te razprave pa potekajo še danes. En model sta razvila Elkonyin in Davidov, drugega pa Zankov. Oba modela sta primerna za nižje razrede osnovne šole, za katera smo pripravili primerjavo.

Scientific paper

UDC 37.091.33

KEYWORDS: developing teaching and learning, mental development of pupils, zone of proximal development, empirical cognition and thinking, theoretical cognition and thinking

ABSTRACT – In the paper, we have briefly stated the basic characteristics and weaknesses of traditional teaching, and the basic theoretical attitudes about the relation between learning and development are given. L.S. Vygotski did not accept either the thesis that learning and development are two independent processes, or that development should precede learning. His concept about the zone of proximal development is briefly explained. On the basis of his theoretical work and research, there are models of developing learning and teaching, about which there were debates in Soviet Russia, and still there have been debates. One model was developed by Elkonyin and Davidov, and the other one was developed by Zankov. Both of them are applicable in lower grades of primary school. A comparison between these two models is given.

1. Introduction

When planning teaching, revising or systematising teaching material, a teacher is always in the position to choose a teaching model according to the nature of teaching material and age and other characteristics of students in the class. What is a model? According to the dictionary of literary terms (1985), it is every creation of a man, either material or abstract, which has the role of a picture which from the object or the set of objects reflects his characteristics or the final number of his elements and relation between the elements.

An architect projected a house, and a modeller, according to the project, made a model which will show us how the house will look like. He transmitted the form to the model, and dimensions are minimised in the certain proportion. A teacher, a di-

dactician, a pedagogue, created and published the teaching pattern which intensifies the educational-pedagogical process (thoughtful activity is increased, communication and interaction are enriched, and a student becomes more autonomous...), and other teachers apply (copy) this pattern on the whole or partially, so that they could intensify their teaching.

A. Sidenko (2006) states the thoughts of M.N. Berulova who defines models as the *informational ones* (based on the assumption that the content of teaching-pedagogical conditions is transformed into the system of characteristics of a student's personality, in his knowledge and skills); *formative ones* (based on the specific leading teaching in order to form previously stated personality characteristics); *developing ones* (directed primarily to the development of theoretical thinking, skills of analysis, synthesis, abstracting, generalising, comparison, classification); *activation ones* (observing a student as a subject of cognitive activity); *free ones* (directed to self-actualising personalities); *enriching ones* (assume gaining individual experience based on adjusting this experience with educational normatives); *the integral ones* (discuss the priority of the role of individual psychological characteristics of teachers in which students adopt teaching contents).

Therefore, observing from the didactic point of view, the aim of teaching models is to enrich cognitive experience of students, to contribute to their self-actualisation and the development of personality. Nevertheless, the path between aims and realisation is complex and tiring, and it should be completed by the application of suitable procedures. The Model is good if it contains such procedures which rationally lead to the posed purpose. This is why searching for innovative models, which can enable reduction of the weaknesses of traditional teacher, is theoretically and practically a very interesting model of developing teaching about which in recent decades, and later in post-Soviet time in Russia and Belarus, and Europe, there have been live discussions. There are two directions in theoretical research and practical realisation of developing teaching – one was founded by V.V. Davidov and D.B. Elkonyn, and the second one developed by L.V. Zankov based on the ideas and studies of his world acknowledged psychologist L.S. Vygotsky. B.G. Ananjev (2001) stresses that even in the 1950s in Soviet Union, there have been people who made great efforts to preserve teaching young learners, and that they had respectable effects on their psychological development. There was a connection between teaching and the psychological development of young learners, and in the 1960s, there were changes in the content and models of traditional primary school teaching, which had certain positive effects on the development of children (Zankov, 1992; Elkonjin, 1989).

The very term *developing teaching and learning*, as N.I. Čuprikova (1994) says, can provoke some doubts, because, observing principally, each kind of teaching and learning, at some degree, can contribute to the development of children's thinking and children's personality in general, for example, empirical thinking. But the term *developing teaching and learning*, which originates from V.V. Davidova, refers, after all, to developing creating young personalities.

He describes the term in this way: The term *developing learning and teaching* will remain empty until it gets "full" by definite conditions of realisation according to the set of basic determiners, among which the basic ones are (Davidov, 1986):

- the main psychological characteristics of the given age which appear and develop in the given age;
- the main activity of the given period which determines the appearance and development of the given characteristics;
- the content and ways of the mutual realisation of the activity;
- a connection with other aspects of activities;
- a methodological system which enables the determination of the development of some characteristics;
- the character of the connection between those levels and particularities of organisation and border and other aspects of activities.

There are still many authors who think that this term is not completely "full".

2. Theoretical bases of developing teaching and learning

According to the teaching system developed by D.V. Elkonjin and V.V. Davidov, there have been programmes of developing teaching and learning, concerning the subjects Russian Language and Mathematics from the first to the fifth grade of primary school. This system and its practical application are based on the ideas of L.S. Vygotsky, who claimed that the relation between teaching and development presents the most important issue without which they cannot be solved in the right way, including even the stated problems of pedagogical psychology. In his *Pedagogical Psychology*, Vygotsky deals with the problem of learning and cognitive development of children of school age. V.V. Davidov says that at the beginning of the 1930s, more or less clearly, there were three basic theories defined, concerning learning and developing, described by Vygotsky.

The basis of the first idea is that development is independent from learning, which is being observed as purely a surface process which should be adjusted to children's development. However, by itself, it does not participate in children's development, it does not change it and the fast use of results improves and directs it. In accordance with this theory, development should follow certain completed cycles; certain functions should be mature before school starts to train children for occupations and habits. The cycles of development always proceed the cycles of learning. Owing to this, there is no question about the role of learning during development and the maturation of this function, which are activated by learning. Their development and maturation appear as an assumption rather than as a result of learning. Teaching and learning follow the basis of development and they do not change anything in its essence. This theory was supported by A. Gezel, Z. Freud, and it suited the principles of J. Piaget, concerning the cognitive

process of children, and its influence is seen today through the belief that children can be taught only what they can comprehend, i.e. what their cognitive abilities are apt to.

The second theory, according to Vygotsky, starts from the fact that learning is nothing but development, and that learning and development completely overlap because each step in learning has its parallel in each step in development, which in its essence comes to the accumulation of possible acts. Its supporter was partially V. James. According to this theory, each kind of learning is considered to be the developing one, and it is not necessary to make complex procedures of differentiation of the process of development and learning.

The third theory tries to overcome total difference of the two by matching them. Development is considered to be the process which is independent from learning, and the very learning, during which a child gains new forms of behaviour, is meant to be development. Maturing is the preparation for learning, it makes learning possible, and learning stimulates and moves development. In accordance with this theory, development is a wider term than learning. If a child had learnt to perform any kind of operation, he/she would have adopted a structural principle which is wider than operation of this type on which this principle had been adopted. The result is that a child, making one step in learning, advances two steps in development, i.e. learning and development flow without harmony. This theory divides processes of learning and development instead of building its mutuality. (V.V. Davidov, 1986)

In the third theory, Vygotsky (2004) saw two basic characteristics. First of all, there is acknowledgement about the reciprocity between learning and development and this provides possibilities of simulative influence of learning, and in this way, a certain level of development contributes to the realisation of the either type of leaning. The second characteristic presents attempts to explain the state of developing learning, relying on attitudes of Kofka's structural psychology. The essence of this explanation is in the assumption that a child, mastering any operation, together with it forms a general structural principle, an additional sphere which is far wider than the given operation. Mastering it, the child can further use it as a principle in other operations. Educational structures in one filed unavoidably alleviate the development of structural functions in other fields. This suits the appearance of developing teaching and learning.

Although he found some acceptable elements in the third theory, Vygotsky believed that the right solution for the relation between learning and development can be found only if we go further on from all the three stated theories. He says: "As the most essential thing forestation hypothesis, here is an attitude that the processes of development do not match the processes of learning because the first ones follow the second ones, crating zones of proximal development... As the second essential element of hypothesis, there is a notion about the fact that if learning is immediately connected to children's development, this does not mean that they never go at the same time with one another. Among the processes of development and learning, there are complex dynamic relations of repricoty, which are impossible to cover by one previously given a priori cognitive formula." (Vygotsky, 2004)

Vygotsky stresses further on that any higher psychological function in children's development appears twice in the scene: first as a collective one, social activity, and the second time as individual activity, as inner feature of a child's cognition. He adds that as an essential feature of learning is the zone of proximal development, i.e. a series of inner processes of development. Observing from this point, learning is not development, but if it is well organised, it also includes the cognitive development of a child and provokes such processes which would be impossible without learning. Learning is good if it precedes development. Nevertheless, Vygotsky did not definitely describe developing learning (teaching and learning), although his theory about this issue overcomes the other ones, far more. Developing and peritonealisation have been done by Russian experts, who starting from their own research expressed severe criticism on the thesis that development is independent from leaning and that learning and development overlap.

3. Elkonyin and Davidon's teaching model

The scientific board formed by D.B. Elkonyin and V.V. Davidov, following the hypotheses of L.S. Bigots, tried to transform them by including factual material in the developed theory using other aid theories in order to conceptualise and broaden the given hypotheses. With their theory, they have developed teaching and learning for lower grades of primary school, which was necessary for studying psychological domains of this period. In other words, it was important to observe the role and place of younger school age children in the general system of growth, and this problem was solved by Elkoyin. His concept starts from the fact that a child can solve his/her educational tasks if the work is based on foundations: teaching and the subject of teaching, abstract-theoretical thinking, free management of behaviour (Davidov, 1986). Davidov and Elkonyin started from the fact that traditional education does not ensure the complete development of younger students. In work with children, it did not start from the zone of proximal development, psychical functions had been learnt, whereby they were developed and formed in pre-school age (emotional observation, empirical thinking, and utilitarian memory). At the end of the 1950s, Elkolyin and Davidov strived for the organisation of teaching and learning focused on maintaining the zone of proximal development.

The two of them first drew the parallel between empirical and theoretical cognition. Empirical thinking is directed to classifying the subject by relying on comparison and formal generalisation. This enables a child to comprehend the subject world. According to empirical thinking, a child solves many tasks during teaching and learning. In comparison to the empirical one, the basis of the theoretical cognition and thinking is the generalisation of the system, and cognitively, this system is being built by observing possibilities of its general basis. Parting or fixation of this basis is the generalisation of the given system. Relying on this system, a person is able to

cognitively follow the appearance of the special and individual characteristics of the system.

The characteristics and aims of empirical and theoretical cognition and thinking are different and the review of these differences is given in this way by Davidov:

- Empirical knowledge is created by comparing subjects and notions about them and this enables the separation of general features. This theoretically grows through analysis and function of the special relation inside the whole system, which will serve as a genetic basis through its expressions.
- Comparison stresses the formal general feature of a set; subjects and knowledge about it enable the observation of certain subjects according to an individual class, independently from the fact that these subjects may be connected. The analysis reveals genetically original relations of the wholeness of the system as its general basis and essence.
- Empirical knowledge reflects the outer characteristics of the subject and relies on apparent notions, and theoretically, on inner relations, which go beyond the sense notions.
- The formal general characteristic is separated as a singular with features and singular characteristics of the subject. Theoretical knowledge ensures a connection between the whole system and its different expressions, between the general and the individual.
- Concretisation of empirical knowledge consists of the choice of illustrations and examples that belong to a certain class of subjects; in theoretical knowledge, it consists of the observation and explanation of distinctive and individual appearances of the whole system, its general foundation.
- Words – terms are necessary means of fixation of empirical knowledge. Theoretical knowledge is expressed in the form of mind activates, and then in different symbols of the system. (Davidov, 1986)

Although stressing differences between empirical and theoretical generalising, it is obvious that Davidov does not deny values of the empirical approach in teaching, but distinctively says that both types of thinking are necessary for each person, and that these types are mutually compatible, but he stresses that for theoretical-content reflection, connectivity is characteristic, concerning expressing basic relations, studying and discussing basic activities. This parallel has its reasons. Great philosophers, such as John Lock and George Berkley, justified empirical cognition and knowledge. The generally known Lock's thought is that there is nothing in intellect which has not passed through senses. And Berkey has said that the world exists only if this percept and those abstract terms are misapprehended. This kind of uniformity was not confirmed either by theory or practice. The empirical concept knows only one way of cognition – the inductive one, and this means that we start form individual examples and go to generalisation. According to its essence, the system of Zankovljev is based on the inductive approach, and V.V. Davidov thinks that primary school pupils at lower grades need teaching which will help them adopt theoretical knowledge via analy-

sis, planning, reflection, solving problems, and by doing so, cognition and personality are developed in the best way. Programmes carried out according to the principle of concentric circles only slow down children's development. This is the theoretical approach which is characterised by deductive knowledge gaining. Elkonyin (1989), referring to Vygotsky, states that it is very important for the processes of learning and pedagogical work to occur inside the personality of the individual because only on the basis of forming definite forms and activities there is certain psychological advancement. The necessary conditions for successfully developing teaching and learning are a certain content and structure of the educational-pedagogical process. For this aim, there are special programmes of the Russian language and Mathematics. On the one hand, the system of Zankov, and Davidov and Elkonyin on the other hand, are principally different in definite theoretical postulates, expected results and ways to achieve them, although both of them pass through the theory of research of L.S. Vygotsky.

This second system, as V.V. Kukušin and associates claim, was developed in the 1950s and it started to spread in Russian primary schools in the 1980s and 1990s. It is based on the following principles:

- deduction based on content generalisation;
- content analysis;
- content abstraction;
- theoretical content generalisation;
- path between abstract and concrete;
- content reflection.

The educational-pedagogical process has the following process: getting to know the given scientific situation or task; orientation inside it, pattern of transformation of material, fixation of the separate relations in the aspect of subject or sign model; determination of the means of the taken relation upon which there is better observation and ways of solving source tasks and formulating general approaches to solution; fulfilling general formula, conclusions of the concrete contents. (Kukušin, 2005)

Davidov himself says that an important condition for the regular organisation of developing teaching is to give students tasks which require experimenting with materials because this kind of transformation includes solving. It is important that students analyse the appearance of some theoretical knowledge and master certain general ways of action, i.e. when solving, the tasks reveal its initial or essential relation in the subject. (Davidov, 1999)

From the works of D.B. Elkonyin and V.V. Davidov (1986), and other authors who wrote about their system, it can be concluded that teaching technology realised by that system is characterised by the following:

- rejecting curricula organised according to the system of concentrated circles;
- disclaiming universal values of the principle of manifestly-concrete teaching and learning in primary school;

- free choice and a variety of tasks which must be of a creative character;
- mutual thoughtful activity, dialogue and discussion during teaching lessons;
- problem delivering of knowledge because the teacher approaches students with questions rather than ready knowledge;
- the first phase of teaching includes the method of teaching tasks, and the second phase includes problem learning.

According to this system, learning largely increases the theoretical level of education because it helps students gain knowledge and practical skills as well as think in the scientific way, understand art and adopt moral values.

4. Zankovljev's teaching model

L.V. Zankov started his experimental work in 1957, the severely criticised content and teaching methodology in primary school. He stresses that the teaching content is too simple and easy, and that learning improves very slowly, the theoretical knowledge of children is very poor, too much revising is subordinated to gaining habits, and that they do not contribute to intensive development of children. Verbalism dominates in teaching, memorising is in favour of thinking, and unified teaching disallows individual approach (Zankov, 1963). In his studies, Zankov concentrated on regulations of development and teaching with the aim of improving efficiency of the general development of students. He started from the concept of L.S. Vygotsky about the leading role of teaching how to develop the psyche (learning and development go together), about the zones of actual and proximal development. The problem was that the very understanding of general development had not been definitely observed, and because general development assumes forming intellectual abilities, spiritual growth and moral and physical development. Only then, there is a possibility to make observations in terms of the general psychological development of children. In developing teaching and learning, it is necessary to determine the co-relation between the whole and the parts, where Zankov is in favour of the whole, stressing the role of the whole pedagogical actions in the development of children.

There are didactic principles of developing learning according to him, as follows.

- Teaching at a high level of requirement. It is suggested that observing difficulties and strengthening students' brain power are achieved by complex teaching material. This principle reveals the mental power of students; they can express themselves. In its essence, such adoption of knowledge leads to over-creating, systematisation and it has a complex structure. The degree of difficulties is adjusted, whereby students can co-create the suggested teaching material. Searching for life, comparison, we can say that this can be compared to the sportsman who can-

not achieve results in law-related exercises. Both in the psychological and general development, only strong mental work enable success.

- The leading role of theoretical knowledge in teaching in primary school. This principle predisposes the adoption of appropriate knowledge based on thoughtful theoretical beliefs and the knowledge of inner relations between the appearances.
- Learning fast. This comes from the principle of high requirement and it is directed against "staying at one place", against perpetual, low-productive repetitions which do not make headway. This does not mean that lessons should neglect activities for developing habits. This principle insists on quality rather than quantity characteristics, and on the application of different ways of adoption and the widening of knowledge.
- The cognition of the learning process by students. This principle is close to the traditional principle of cognitive teaching, but it differs from the traditional meaning. It focuses on the adoption of planned knowledge to develop skills and habits. The principle of cognition is placed inside, i.e. in the current of educational-pedagogical process. A student observes the organisation of the teaching material, its concrete elements, describes the causes of mistakes if there are any. The very process of mastering knowledge and skills in a certain extent becomes the object of cognition.
- Aimed, directed and systematic work to ensure the general development of students, including the weak. This work leads to great improvement and development of weak students. According to the traditional teaching methodology, weak students were given too many exercises in order to improve their grades. The research has shown that the overloading of weak students does not contribute to their development. Unsuccessful students, more than other students, need systematic teaching and learning because it accelerates their development and leads to better results in the adoption of knowledge and habits. (L.V. Zankov, 1990)

Zankov himself says that the effort of this research team was directed to studying the didactic system of teaching for younger students with the aim of improving their psychological development. He posed himself a task to create a system of teaching and learning for younger primary school students, which will enable high results of development according to the traditional methodology (Zankov, 1990). This meant experimental research through which the existing practice would be changed and efficiency would be shown with regard to special programmes and methods, and results would be compared to the achievements of those classes and schools in which Zankovljev's system is applied. Zankov believes that the basic elements of the general psychological development are perception, thinking and practical work, and that the data of the experiment reveal "thorough advancement of the students of experimental classes from the students in the general development classes". (Zankov, 1990: p. 89)

5. Davidov on empirical and theoretical thinking

Discussing the sense and content of the research of Zankov and his team, V.V. Davidov notices that their system goes in the right direction towards organising the problem of developing teaching and learning in primary school, based on the set of ideas of L.S. L.S. Vygotsky. Zankov and his associates observed developing effects in observation, thinking and manual work, which is the scientific-practical significance of their research. Nevertheless, the main question is which type or cycle of knowledge maintains the given system. Zankov does not answer this question in a clear and open form, and Vygotsky finds this very significant. The first question is: What is the particularity of thinking of younger students in comparison to pre-schoolers, and what is the principle difference between them in the cognitive sphere? The methodology of studying cognition enables stressing features of distinguishing oral description and comparing features of emotional and given subjects by younger students. This is characteristic for empirical thinking. The methodology which follows thinking was focused on grouping subjects according to external marks. This skill is typical of empirical thinking. (Davidov, 1986).

Addressing famous psychologists, Davidov stresses that data about children's psychology show that good orientation in the sense features of the subjects and their grouping is typical of pre-school children. His remark addressed to Zankov and associates is that a slightly changed methodology of grouping subjects, applicable to pre-schoolers, was not meant to be used with younger primary school pupils. Traditional primary school education of young pupils is based on empirical cognition and thinking, or as it is said in psychology, it is obvious-iconic or concrete thinking. Methodologies used by the associates of Zankov could only show different levels of empirical cognition and thinking, which is independent from the real development of children taught in experimental classes in accordance with the postulates of the new didactic system. Davidov (1986) thinks that this system did not leave the circle of empirical cognition and thinking, although it was principally directed to that theoretical knowledge. The didactic-methodological instructions which were given to teachers by his team do not follow the line of gaining theoretical knowledge, but they stay anti empirical-utilitarian knowledge. Empirical-utilitarian knowledge of students in experimental classes was more developed than the knowledge of students in ordinary classes, which means that traditional work with students was not sufficiently good and that there was still room for improvement. Since Zankov (1990) believes that the organisation of teaching and learning presents causes and the process of development presents means, Davidov concludes that, according to that attitude, there is no idea about any, even indirect connection between teaching and development, about their complex dynamic relation, which enabled the connection between causes and means according to Zankov's formula. This is where the inner condition of development was shown and described. Zankov is not interested in specific differences between empirical and theoretical thinking.

Zankov (1990) criticised the positions of Elkonyin and Davidov, stressing that it is very wrong to separate the adoption of empirical and theoretical knowledge, but Davidov replied that the division between empirical and theoretical thinking was acknowledged by my many philosophers, including Hegel. According to David, Zankov acknowledged the inner relation of the zone of proximal development and the mental development of children, but this was not reflected in his didactic principles.

6. Basic ideas have not been realised yet

Zankov researched the problem of developing teaching and learning for twelve years, and the practical result, according to some authors, was that in 1969 the duration of primary school education was shortened from four to three years. It is confirmed that his concept was efficient at all the stages of educational-pedagogical process. This differs from the traditional pattern which is commonly used in schools. It is based on the influence of inner regulations on the development of a child, and interests for his/her inner world, for individuality, which is realised as the result of actions of external and internal factors. This system is focused on the general development of a child, and it is created on the basis of changes to traditional didactic components.

Nevertheless, without paying attention to productivity in developing mental functions of students, as M.V. Zvereva says, this system has remained unrealised up to now. In the 1960s and 1970s, there were attempts to fully introduce this concept to school practice, but this was not successful because it was shown that teachers were not trained to realise the new curricula according to the new pedagogical technologies. At the end of the 1980s and at the beginning of the 1990s, person-oriented development of education provoked interest in this concept, and it was shown that the didactic principles suggested by Zankov are applied partially and shallowly. A deeper sense of the concept has remained unrevealed for many people (Zvereva, 1983).

Although a great number of Russian teachers strived to introduce the system developed by Elkonyin and Davidov, this does not mean that the very application passed without difficulties. Davidov observed weaker points of that system, differing external and internal problems. The first one includes insufficient realisation of didactic-methodological instructions and insufficient preparation of teachers. The second, more serious problem is insufficient realisation of the very theory of developing teaching and learning. Apart from this, the whole problem of developing teaching and learning has not been included yet and the tendency to discuss the entire problem in a complex way; there were no results in practical work. An analysis should be made from the psychological point of view. In one of his last interviews, Davidov stressed that the improvement of the system predisposes well determined feedback between theoreticians and practitioners. With their new facts, practitioners should contribute to the improvement of the system. In the last ten years, there have been no positive improvements in practice and theory, and in the mid-1990s, problems became more

distinctive, due to which schools took action by leaving the system of Elkonyin and Davidov and accepting the system of Zankov.

We can seek reasons for this, among other factors, in insufficient preparation for teachers and insufficient assistance they get from school psychologists. The very theory of Elkonyin and Davidov remained at the theoretical level, i.e. it was not sufficiently operationalised. One of the reasons is that teachers are more turned to Zankovljev's theory, and in addition, it is closer to the traditional model, and the more inductive, manifested-concrete a path is, the easier it is to applied it. It is obvious that the concept of developing teaching and learning should be elaborated both theoretically and practically.

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Primerjava modelov Elkonyina in Davidova ter modela Zankova

V pedagoški psihologiji in didaktiki se že dalj časa pojavlja pereča tema o učenju in razvoju otroka. O tej temi obstaja veliko teorij, ki se razlikujejo med seboj ali pa se prekrivajo. Kljub temu lahko prepoznamo tri osnovne skupine:

- *poučevanje in učenje morata slediti razvoju, funkcije morajo biti duševno oblikovane in razvite, šele nato mora šola učencem pomagati, da pridobijo ustrezno znanje;*
- *učenje ni nič drugačno od razvoja;*
- *obe stališči se združita.*

L.S. Vygotsky je razvil teorijo o območju bližnjega učenja in v skladu s to teorijo naj bi razvoj sledil učenju in ne obratno. To pomeni, da naj bi učenje pospeševalo razvoj. Ni primerno, da učenci dobivajo naloge, ki so na njihovi dejanski umski ravni, saj v tem primeru ne napredujejo.

Na tej osnovi sta nastala oba modela razvijanja poučevanja. En model sta oblikovala in razvila Elkonyin in Davidov, drugega pa je razvil in didaktično organiziral Zankov. Osnovna značilnost prvega modela je zahteva, da se pri izobraževalno-pedagoškem delu upošteva deduktivni pristop, povzemanje vsebine in teoretično posploševanje. Drugi model (Zankov) temelji na visokih zahtevah poučevanja, učenju z visoko hitrostjo in znanju, pridobljenem na induktivni način. Ta dva modela sta med seboj konkurenčna. Model, ki sta ga razvila Elkonyin in Davidov, poudarja teoretično znanje in razmišljanje, Zankov model pa poudarja empirično znanje.

Osnovne značilnosti prvega modela so: zavrnitev učnih načrtov, pripravljenih po sistemu združenih krogov; zavrnitev splošnih vrednot principov konkretnega poučevanja v osnovni šoli; prosta izbira in raznolikost nalog, ki morajo biti kreativne; skupna aktivnost za razmišljanje, dialog in razprava pri pouku, problemsko reševanje, pri čemer učitelj učencem ne ponudi vnaprej pripravljenega znanja, ampak jim postavlja

vprašanja; v začetku poučevanja se uporabljajo naloge na podlagi metod poučevanja, potem pa se vključi učenje na podlagi problema. Na kratko, model temelji na dedukciji in posploševanju vsebine, njeni analizi in povzemanju, teoretičnem posploševanju, povezavi med abstraktnim in konkretnim ter refleksiji o vsebini. Elkonyin in Davidov zavračata tradicionalno izobraževalno-pedagoško delo, kjer se poučevanje izvaja na konkretni ravni, čeprav so osnovnošolski učenci sposobni, da razmišljajo abstraktno.

Značilnosti Zankovega modela so: poučevanje na visoki ravni zahtevnosti; glavno vlogo ima teoretično znanje; učenje z visoko hitrostjo; učenci obvladajo kognitivne procese, ciljno učenje in sistematično delo pri razvoju učencev, vključno s slabšimi učenci. Kot vidimo, Zankov zagovarja glavno vlogo teoretičnega znanja, vendar praksa šol, ki so sprejele dani didaktični pristop in navodila, kaže na empirični pristop, induktivni in konkretni pristop. Zankov je bil zagrizen nasprotnik, da se slabše učence preveč obremeni z nalogami enakega tipa, saj ne zagotavljajo uspeha. Zaradi visokih izobraževalnih zahtev in učenja z visoko hitrostjo v poskusnih osnovnih šolah, ki so uporabile njegov model, se je izobraževanje skrajšalo na tri leta.

Njegov model pa ni sprejel Davidov, ki je opozoril, da Zankov preveč preprosto interpretira Vygotskyjeve ideje ter da zanemarja abstraktno in teoretično učenje. Čeprav ju omenja na deklarativni ravni, se v svojem modelu zanaša na empirično učenje. Ker je želel poudariti prednosti svojega in Elkonyinovega modela, je primerjal teoretično in empirično razmišljanje. Pravi, da je empirično razmišljanje usmerjeno v razvrščanje vsebine s poudarkom na primerjavi in formalnem posploševanju. To posploševanje in pojmi, ustvarjeni na tej podlagi, imajo veliko vlogo v otrokovem življenju, ker mu omogočajo, da se spopade z vsebino. S pomočjo empiričnega razmišljanja otrok rešuje mnoge naloge med poukom. V primerjavi z empiričnim znanjem je osnova teoretičnega znanja in razmišljanja v posploševanju sistema, kasneje pa je sistem premišljeno zgrajen z upoštevanjem splošne osnove. Z analiziranjem sistema vsebine lahko razumemo njeno osnovo in temelje. Ločevanje ali utrditev te osnove je posploševanje vsebine danega sistema. Če se zanašamo na posploševanje, smo na kognitivni ravni sposobni spremljati posebne in ločene oblike sistema.

Didaktični principi, ki jih predlaga Zankov, se uporabljajo na šolah le delno in površno. Koncept je mnogim še vedno precej nerazumljiv. Čeprav je model razvijanja poučevanja izzval velik interes in razprave, ne le v Rusiji, kjer so ga uporabili v številnih šolah, je ostal na ravni pričakovanj. V zadnjih desetih letih prejšnjega stoletja ni bilo pozitivnih sprememb v teoriji in praksi. V devetdesetih letih so problemi postali še hujši, kar je povzročilo trend, da so mnoge šole zavrnile sistem Elkonyina in Davidova ter sprejele sistem Zankova. V enem svojih zadnjim intervjujev je Davidov poudaril, da izboljšanje sistema pomeni, da je med praktiki in teoretiki dobro vzpostavljena pot povratnih informacij. Praktiki lahko z novimi dejstvi prispevajo k izboljšanju sistema. Model Elkonyina in Davidova ni dovolj didaktičen in pot, ki jo priporočata, je zelo težavna, zato so mnoge šole zavrnile ta model in sprejele model Zankova. Očitno je, da se mora model razvijanja poučevanja nadgraditi na teoretični in praktični ravni.

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Inovativnost v srednjem šolstvu – grožnja ali recept za preživetje

Znanstveni članek

UDK 373.5:005.591.6

KLJUČNE BESEDE: inovativnost, ustvarjalnost, podjetnost, profesionalni razvoj, ravnateljevanje, vseživljenjsko izobraževanje

POVZETEK – Članek se osredotoča na slabo raziskano, a aktualno področje, inovativnost v srednjem šolstvu. Raziskava, ki je temeljila na kvalitativni študiji šestih srednjih šol, je vključevala tako ravnatelje kot tudi učitelje. Najpomembnejše ugotovitve so, da je vloga vodstva pri razvoju inovativnosti ključna. Ugotavljamo tudi, da so slovenske srednje šole večinoma sledilci spremembam in si inovativnost le postopno utira pot v izobraževalni proces kot tudi v samo delovanje šole in učiteljev. Pri tem smo identificirali sistemske, organizacijske in kadrovske ovire. Šole nimajo jasne inovacijske strategije in s tem povezanih inovacijskih ciljev. Prav tako jim manjka ustreznih kurikularnih okvirov, pa tudi znanj in kompetenc glede obvladovanja ustvarjalnosti in inoviranja. V nadaljevanju prikažemo razlike med inovativnimi in povprečnimi šolami ter podamo predloge za izboljšanje stanja. Na koncu predlagamo model razvoja inovativne šole, ki vključuje sistemsko nacionalno raven, raven šole, kjer je pomembna tako vloga vodstva kot vloga učiteljev in sposobnost premagovanja odporov ter raven sodelovanja z lokalnim okoljem.

Scientific paper

UDC 373.5:005.591.6

KEYWORDS: innovation, creativity, enterprise, professional development, principalship, lifelong learning

ABSTRACT – The article focuses on the ill-researched, but nonetheless currently relevant issue of innovation in secondary education. The results of the research, which was conducted as a qualitative study of six Slovene secondary schools and included the principals as well as the teachers, point to the key role of effective leadership capacity in stimulating the process of innovation within the school system. As concluded from the study, Slovene secondary schools appear to be mere followers and not creators of changes, since the process of pedagogical and organisational innovation is slow-paced. In the process we were also able to identify systematic, organisational and workforce obstacles. It is obvious that schools do not have clear innovation strategies or objectives. They neither have clearly defined curriculum guidelines nor the knowledge or the competences needed to control and direct creativity and innovation. The differences between innovative and average schools as well as the suggestions for improvements are also presented in the research. At the end, we present a model of an innovative school, which incorporates a network of national, local, and school organisation sectors that jointly engage in improving the education system's capacity.

1. Uvod

V družbi znanja, ki je neposredno povezana z izzivi globalne konkurence, se moramo vsi zavedati pomena ustvarjalnosti ter inovativnosti za osebni, družbeni in gospodarski razvoj. Ob tem ne moremo mimo vloge šole. Inovativnost je zelo širok pojem, ki se nanaša na vsa področja življenja, pri čemer moramo poudariti, da so inovacije

tako tehnološke kot družbene, sociološke, organizacijske, metodološke ipd. in jih uvajamo tudi v šolstvu. Če povzamemo različne avtorje (Likar, Križaj in Fatur, 2006; Bellon, 1996; Feldman, 2004; De Leede in Looise, 2005), se je treba pri inovativnosti odmakniti od šablonskega delovanja h kreativnemu razmišljanju in pogledati v prihodnost, pri čemer je eden ključnih dejavnikov gospodarjenje s človeškimi viri, torej dober, ustvarjalen kader. Namen članka je predstaviti, kako na področju inovativnosti delujejo nekatere slovenske srednje šole, in obravnavati izsledke kvalitativne raziskave, ki smo jo zaključili maja 2013. Področje inovativnosti v srednjih šolah je še precej neraziskano, zato nas je v naši raziskavi zanimala problematika obvladovanja inoviranja v šoli ter dejavniki, ki vplivajo na razvoj inovativnosti, pa tudi zaviralni dejavniki.

Če želi Slovenija postati inovativna družba in graditi na prav takem gospodarstvu, ni dovolj postavljati zahteve po inoviranju le pred akademsko sfero in gospodarstvo, pač pa je nujno začeti pri mladih. Pri tem je ključna vloga izobraževalnega sistema (Likar in Fatur, 2009; Likar, 2010), ki mora na mlade prenesti znanje o invencijsko-inovacijskem procesu, ter še zahtevnejše, razviti mora ključne osebnostne lastnosti za inoviranje in podjetništvo, kot so: intelektualna radovednost in ustvarjalnost, vztrajnost, sposobnost sprejemanja rizika, sposobnost sodelovanja, razvoj vrednot, družbena odgovornost ter druge, ki so ključne za razvoj inovativnega posameznika in posledično inovativne družbe. Cilj šole bi moral biti inovativni učenec, opremljen z znanjem in orodji za njegovo ustvarjalno uporabo (Likar, 2008). Žal pa naš šolski sistem uspe ravno nasprotno – večini otrok prirojeno "genialnost" izničiti in jo spremeniti v podrejenost, neustvarjalnost in majhno samozaupanje (prav tam).

Primeri dobre prakse iz tujine (Ng, 2004; KD, NHD in KRD, 2004; European Commission Directorate General of Enterprise, 2004; European Commission, 2006) kažejo, da je pomembno že pri mladih spodbujati inovativnost in podjetništvo. Pogosta oblika podjetniškega izobraževanja v srednjih šolah v tujini so "mini družbe", in sicer kot virtualno podjetje ali kot "dijaška družba", ki ima obliko realne družbe. Dijakom pri tem pomaga pedagoški tim, kjer so poleg učiteljev – mentorjev tudi uspešni podjetniki iz gospodarstva. V državi Singapur ima izobraževalni sistem nalogo, da pri učencih in dijakih razvije razumevanje, da lahko s svojim inovativnim ter podjetnim delovanjem odločilno vplivajo na razvoj in uspeh svoje domovine, to sta družbeno sprejeti vrednoti in državljanska dolžnost. V sosednji Avstriji dijak, ki konča šolanje, lahko opravi dodatni izpit iz podjetniških veščin in poleg diplome pridobi tudi potrdilo o podjetniški usposobljenosti, kar je vzrok, da čedalje več dijakov odhaja na šolanje v Avstrijo. Slovenske šole, ki jim že tako primanjkuje dijakov, izgubljajo še te, ki jih v tujino privablja tamkajšnji šolski sistem, saj se na primer učijo realnega poslovnega modela tako, da operirajo s tisoč podjetji, plačujejo račune in davke, si izmenjujejo ponudbe, obrazce ipd. Dijaki, ki obiskujejo te šole, pravijo, da tam cenijo izobrazbo in inovativnost, medtem ko v Sloveniji postaja problem, če imaš "izobrazbe preveč" postaneš "nezaposljiv". Vse to je močan kazalec, da je z našo družbo nekaj narobe.

Šola je eden glavnih dejavnikov, ki naj bi oblikoval človekov ustvarjalni potencial. Različni avtorji (Žagar, 1978; Marentič Požarnik, 2003; Bezić, 2010) ugotavljajo,

da šola premalo spodbuja ustvarjalnost in jo celo zavira. Ravnatelji bi se morali zavedati, da je inovativnost na šoli dober temelj za dobivanje konkurenčne prednosti, zato bi morali biti dovzetni za spremembe, izboljšave, posodabljanje, motiviranje zaposlenih za novosti ipd. Pomembni so jasno opredeljeni cilji, ki vodijo k razvoju inovativnosti in s tem k trajnostnemu razvoju šole. Vloga in naloge ravnatelja so v današnjem času zelo kompleksne, zahtevne in pomembne, predvsem ima veliko vlogo pri vpeljevanju sprememb, saj je lahko spodbujevalec ali zaviralec. Teoretiki (Warren Little, 1984; Bush, 2003; Fullan, 2004; Morgan, 2004) ravnatelju pripisujejo še vloge načrtovalca, snovalca politike, izvrševalca, odobritelja, vpeljevalca sprememb, povezovalca z okoljem, razsodnika, posrednika, poslušalca, svetovalca, nadzornika notranjih odnosov, izvrševalca nagrajevanja in kaznovanja. Senge (1994) mu pripiše še vlogo graditelja učeče se organizacije, v kateri zaposleni nenehno skrbijo za svoj razvoj in so odgovorni za učenje. Šole bijejo neusmiljen boj za dijake, ker so se generacije zmanjšale in preživetje šol je odvisno od vpisa nanje, zato morajo biti iznajdljivi ter inovativni, da bo šola prepoznavna v okolju ter tako zanimiva za bodoče dijake. Valenčič Zuljanova (1996) je v svoji raziskavi prišla do ugotovitev, da je ravnateljeva vloga v procesu inoviranja pravzaprav osrednja. Raziskava Javornik Krečičeve (2008), v katero je bilo vključenih 542 učiteljev (360 osnovnošolskih in 182 gimnazijskih), pa je pokazala, da se učitelji zavedajo, kako pomemben je njihov profesionalni razvoj in vseživljenjsko učenje. Poudarjajo (prav tam, str. 128–129), da je zelo pomembno vzdušje na šoli. Tudi drugi avtorji (Bellon, 1996; Kavčič, 2005; Logar, 2007; Mihalič, 2006; Likar in Fatur, 2009) opozarjajo na pomen inovacijskega vzdušja in kulture. Povzamemo lahko, da raziskovalci gledajo na učitelje in na ravnatelje kot na pobudnike in izvajalce sprememb. Profesionalni kader je eden izmed najpomembnejših dejavnikov uspešnosti organizacije, naloga vodje je, da z njim dobro upravlja in poskrbi, da zaposleni lahko razvijejo svoje zmožnosti (Kishel in Gunter Kishel, 1993).

Javornik Krečičeva (2008) ter Likar in Fatur (2009) poudarjajo, da je spodbujanje inovativnosti smiselno v vseh organizacijah, torej tudi v šolah, čeprav sta Jakopec in Likar (2009) v svoji raziskavi ugotovila, da obstoječa kulturna tradicija šole ni preveč naklonjena inoviranju. Navedeta več problemov v osnovnih šolah, kot so: kader, premalo sodelovanja in zaupanja, zaposleni niso vključeni v razvojne usmeritve šole ipd. V naši raziskavi smo prišli do podobnih ugotovitev tudi na srednjih šolah. Babič, Mulej in Likar (2009) so prišli do sklepov, da so v srednji šoli neizkoriščene možnosti za povečanje inovativnosti mladih. Mulej (2007) opozarja, da v slovenskih šolskih programih ni predmetov o podjetništvu in inoviranju ter da na tem področju potrebujemo korak naprej. Usmerjeni smo predvsem v doseganje merljivih standardov, kar zavira ustvarjalnost. Zakoni in predpisi bi morali ustvarjalnost in inovativnost zapovedovati, ali kot ima država Singapur že v vizijo vlade vključeno spodbujanje mladih v inovativnost in podjetnost. V Sloveniji potrebujemo fleksibilnejši kurikul in ne toliko zaprtega ter okorelega. Young (1998) opozarja, da zaradi tega, ker prihodnosti ne moremo zagotovo napovedati, mora biti kurikul odprt. Vse navedeno kaže, da je potreba po spremembah v šolstvu velika.

2. Metodologija

Namen raziskave je bil analizirati stanje na področju inovativnosti na srednjih šolah po Sloveniji na ravni vodstvenih vidikov.

Glede na cilje raziskave smo si zastavili naslednja raziskovalna vprašanja, ki so nas vodila skozi raziskovalni proces:

- Kakšni so pogledi ravnateljev na pomen inoviranja in na pomen ustvarjalnosti?
- Kakšni so inovacijski cilji šole?
- V kakšni meri vpliva na razvoj inovativnosti učenca kurikulum in v kolikšni meri obšolske dejavnosti?
- Kakšna je vloga vodje pri razvijanju inovativnosti?
- Kakšni so sistemski vidiki podpiranja ustvarjalnosti in inovativnosti?
- Kateri so bistveni zaviralni dejavniki?
- Kaj je bilo treba storiti za doseganje konkretnih inovacijskih presežkov?

Raziskovano situacijo smo želeli preučiti iz perspektive njenih udeležencev (Vogrinc, 2008, 48). Določili smo namenski vzorec raziskave. Izbrali smo pluralno eksplorativno študijo na šestih srednjih šolah (štiri gimnazije in dve srednji strokovni šoli), tri so najinovativnejše in tri povprečne (po izboru Zavoda Republike Slovenije za šolstvo Ljubljana). Podatke smo zbrali s pomočjo poglobljenih intervjujev, vprašalnikov in sekundarnih dokumentov. Intervjuvali smo šest ravnateljev, tridesetim učiteljem smo poslali vprašalnike, zbrali pa smo tudi LDN-je (LDN – letni delovni načrt) in poročila o realizaciji LDN s teh šestih šol – to je predstavljalo element triangulacije: primerjali smo vidike ravnateljev in vidike učiteljev ter zapise v sekundarni dokumentaciji. Pri analizi kvalitativnih podatkov smo uporabili metodo splošnega analitičnega postopka po Milesu in Hubermanu (1994), ki zajema redukcijo, urejanje podatkov in povzemanje ugotovitev. Najprej smo na podlagi vodstvenih vidikov povzeli skupne značilnosti inovativnih in povprečnih šol, nadaljevali z analizo odgovorov učiteljev ter na koncu naredili skupno analizo vseh rezultatov.

3. Rezultati in diskusija

Pogledi ravnateljev na pomen inoviranja in na pomen ustvarjalnosti

Ravnatelji se zavedajo pomena in nujnosti ustvarjalnosti ter inovativnosti in njihove vloge pri spodbujanju tega. Menijo, da je inovativnost bistveno gonilo vsega dogajanja, saj v šolskem sistemu ni mogoče, da ne bi vedno znova uvajali sprememb, se razvijali in iskali nove poti. Nujno je treba slediti razvoju. Inovativnost mora biti spodbujevalec dogajanja na šoli, ne pa obstranska zadeva, če je še kaj časa ali denarja. Spremembe, ki so "edina stalnica", kot večkrat slišimo, šole spodbujajo, da sledijo novostim, novi tehnologiji, dobrim praksam ipd. Intervjuvani ravnatelji prav tako

menijo, da je treba za razvoj šole skrbeti ves čas in poudarjati ustvarjalnost ter inovativnost kot vrednoti. Tudi naša raziskava je pokazala, kako je to pomembno, čeprav ugotavljamo, da je premalo prave inovativnosti. Ugotovili pa smo tudi, da nekateri ravnatelji ne poznajo dovolj dobro tega področja.

Inovacijski cilji šole

Vsaka šola ima svoje cilje. Inovacijski cilji šol niso posebej določeni. Inovativnost in ustvarjalnost naj bi bili med prioritetnimi cilji vseh srednjih šol, saj je to obdobje, ko dijake pripravljamo za življenje, za poklic in najuspešnejši bodo tisti, ki bodo inovativni. Zato je poleg jasne vizije oblikovanje inovacijskih ciljev eden prvih, a zelo pomembnih korakov.

Vpliva kurikuluma in obšolskih dejavnosti na razvoj inovativnosti učenca

Ravnatelji opozorijo, da je kurikul problematičen, saj zavira inovativnost. Preveč je tog, vsebine preobsežne, učitelj ni avtonomen pri svojem delu ipd. Več možnosti imajo srednje tehniške in poklicne šole, kjer imajo bolj odprt kurikulum in lahko v sklopu tega realizirajo inovativne ideje. Načelno je za inoviranje več možnosti pri obšolskih dejavnostih, ki pa niso ustrezna protiutež sistemskemu pristopu v okviru rednega pouka. Ministrstvo posebej ne spodbuja inovativnosti in tudi neposredno ne financira inovativnih dosežkov, ravnatelj mora sam priskrbeti ta sredstva. Tudi nagrajevanje je v domeni ravnateljev. Tudi ni posebnega usposabljanja s področja inoviranja. Naše mnenje je, da tudi snovalci šolske politike slabo poznajo to področje.

Vloga vodje pri razvijanju inovativnosti

Vsi respondenti so poudarjali pomen vloge ravnateljev z nalogo, da zaposlene motivira, razvija inovacijsko vzdušje in usposobi za inovativnost. Ravnatelji se te vloge zavedajo, a priznajo, da se brez podpore učiteljev inovativnost ne bo razvijala. Ravnatelj je lahko spodbujevalec ali zaviralec inovativnosti. Inovativnost mora postati vrednota, ki jo morajo znati ceniti vsi zaposleni. Poznati mora lokalno okolje in svetovne smernice, da bo šola, ki jo vodi, v prihodnosti konkurenčna. V naši raziskavi je le v enem primeru vidna povezava s potrebami gospodarstva, kar je premalo. Raziskava nakazuje, da gredo v to smer tehniške šole, kot je bila šola v tem edinem primeru, kjer smo opazili povezanost z gospodarstvom.

Sistemski vidiki podpiranja ustvarjalnosti in inovativnosti

Ugotavljamo, da v srednjem šolstvu inovativnost večkrat ni prioriteta. V večini primerov doseganje inovacij ni organizirano, čeprav Likar idr. (2011) opozarjajo, da je inovativnost eden najkompleksnejših procesov in ne sme biti prepuščena trenutnemu navdihu menedžerjev. Napaka v našem šolskem sistemu je, da inovativnost ni obvezna, kot je ponekod v tujini. Torej bi bilo treba ustvarjalnost in inovativnost vgraditi v šolski sistem. Po našem mnenju bi bilo treba začeti že v prvem triletju devetletke in potem nadgrajevati ter dodati še podjetništvo.

Bistveni zaviralni dejavniki

Izpostavili bi bistvene zaviralne dejavnike, in sicer:

- *sistemske*: tog šolski sistem, kurikul, zakonodaja in pravilniki ter matura; vodstvo (nepripravljenost vodilnih, stil vodenja ipd.); država ne stimulira inovativnih učiteljev; splošno družbeno vzdušje, negativni vplivi recesije ter slabi materialni pogoji; nefleksibilna, tradicionalna organizacija pouka;
- *organizacijske* (nivo šole): organizacijska togost, konformizem, slaba, neustvarjalno vzdušje ter nestimulativno okolje nasploh, rutinsko delo, administrativne in nepomembne dejavnosti; premalo sodelovanja z lokalno skupnostjo in gospodarstvom;
- *kadrovske*: kader (neustvarjalni, nemotivirani, leni zaposleni, nenaklonjeni spremembam, brez ustreznega znanja), neurejena sistemizacija delovnih mest; neznanje.

Kaj je bilo treba storiti za doseganje konkretnih inovacijskih presežkov?

Odgovori na to vprašanje so nas vodili do predlogov za doseganje inovacijskih presežkov oziroma do priporočil za razvoj inovativnosti. Ključne ugotovitve naše raziskave so povzete v tabeli 1.

Tabela 1: Priporočila za razvoj inovativnosti

Sistemski vidik – naloga države	*Organizacijski vidik – nivo šole*
□ postaviti jasno inovacijsko strategijo in zapovedati inovativnost kot obveznost, □ inovativen šolski kurikul, □ izobraževanje ravnateljev na področju sistematičnega uvajanja in obvladovanja inovativnosti, □ pogoji za inovacijsko sodelovanje z lokalnim okoljem.	□ jasna inovacijska strategija šol, □ dobro zastavljena vizija in cilji, □ podpora vodstva šole pri inovativnem delu, □ ustrezno inovacijsko vzdušje in kultura, □ profesionalni razvoj zaposlenih, □ ravnatelj mora dobro predstaviti sistemske inovacijske predloge, da jih zaposleni razumejo ipd., □ razvoj kompetenc, kot so npr. radovednost, vztrajnost, pogum, sodelovanje, □ treba je realizirati dobre ideje, □ podpreti je treba inovativne predloge učiteljev in dijakov, □ pomembno je biti prvi, □ uvajanje dobrih praks ipd.

Cilj: primerjava inovativnih in povprečnih šol

Eden izmed pomembnejših ciljev naše raziskave je bila primerjava najinovativnejših s povprečnimi šolami. Prišli smo do zanimivih ugotovitev, ki so prikazane v tabeli 2.

Tabela 2: Primerjava inovativnih in povprečnih šol

Inovativne šole	*Povprečne šole*
Ugotovitve glede šol: □ jasno nakažejo usmeritev inovativne dejavnosti v trg in v uporabnike ter povezavo s potrebami gospodarstva, □ imajo izredne programe, s katerimi služijo, □ izstopanje iz začrtanih šolskih okvirov, □ zavedanje (glede inovativnosti), da je treba biti prvi, □ inovacija izvira s te šole, potem pa jo drugi povzamejo od njih kot primer dobre prakse, □ vabijo k sodelovanju podjetja, lokalne skupnosti, umetnike, raziskovalce ipd., □ pokažejo konkretne dosežke, □ dober kader, □ dobro vzdušje, sodelovanje, □ dobri delovni pogoji.	Ugotovitve glede šol: □ so le inovacijski sledilci, □ nimajo določenih jasnih inovacijskih ciljev, □ slab kader (zavistni posamezniki, ostareli člani kolektiva, ne marajo sprememb, nimajo znanja ipd.), □ slabša klima, □ slabši in nemotivirani dijaki.
Ugotovitve glede ravnateljev □ so zgled, □ poudarjajo razvoj inovacij, □ prevzemajo vlogo menedžerja s povsem poslovnim pristopom, □ zavedajo se konkurenčne prednosti, ki jo dobra šola mora imeti v prihodnosti, □ imajo pogled vnaprej, □ prepoznajo in podprejo inovacije, □ poudarjajo konkretne aktivnosti, □ poudarjajo odprtost za spremembe, uspešno trajnostno vodenje, dobro komunikacijo, imajo jasno vizijo, v katero vključujejo inovativnost.	Ugotovitve glede ravnateljev □ nimajo znanja s področja inovativnosti; □ nimajo posluha in razumevanja; □ le sledijo spremembam in novostim.

Predlogi za dvig inovativnosti

Rezultat naše raziskave so tudi predlogi učiteljev, ki naj bi pripomogli k razvoju inovativnosti (prikazani so v tabeli 3).

Tabela 3: Predlogi učiteljev za dvig inovativnosti

Glede učiteljev	*Drugi predlogi*
□ izobraževanje učiteljev na področju sistematičnega uvajanja inovativnosti v okviru šolskega kurikula, □ podpora vodstva, □ motiviranje učiteljev, □ ustrezno vrednotenje učiteljevega dela, □ predstavitev novosti, dela učiteljev na šoli ipd., □ posodobitev sistema napredovanja, □ seznanitev s čim več praktičnimi primeri, primeri dobre prakse, □ možnosti izobraževanja v tujini oziroma s tujimi predavatelji, □ krepitev inovativnega vzdušja, tako da bodo imeli vsi učitelji potrebo in željo po uvajanju novosti.	□ spodbujanje dijakov k inovativnosti in ustvarjalnosti pri pouku ter šolskih dejavnostih, a tudi širše, □ več projektnega dela, □ drugačna oblika zaključevanja šolanja (ne matura), □ razvoj ocenjevanja interdisciplinarnih vsebin, □ spodbujanje inovativnosti na vseh ravneh: na šoli, v regiji itd., □ nakup boljših sredstev za pouk, □ dati možnost vsakemu, da predlaga izboljšave, □ več vključevanja dijakov in staršev pri predlaganju inovacij, □ organizacija srečanj inovatorjev ipd., □ ustrezno vrednotenje inovativnosti v družbi.

Diskusija

Naša raziskava je pokazala, da ravnatelji vedo, kako pomembni sta inovativnost in ustvarjalnost v šolstvu v času, ko se vse ves čas spreminja in si nihče na vodilnem mestu ne more privoščiti, da ne bi skrbel za razvoj in spremembe na šolah. Rezultati naše raziskave se skladajo z ugotovitvami Sorensena in Christopherja (1997, str. 7), ki trdita, da mora biti v filozofiji vodstva jasno izražena predanost organizacije vrednotam ustvarjalnosti in inovativnosti. Tudi Likar in Fatur (2009, str. 29) menita, da mora biti inovativnost del vsakdana in ne le stvar občasnih akcij. Ugotovili smo, da ministrstva spodbujajo šole, da sredstva pridobivajo iz drugih virov zaradi pomanjkanja javnih sredstev in da ravnatelji čedalje bolj potrebujejo tudi podjetniško znanje. Problem vidimo v tem, da ravnatelji začetniki tega znanja nimajo, saj so ravnatelji imenovani iz vrst učiteljev, ki so praviloma strokovnjaki s svojega predmetnega področja. Tudi Šola za ravnatelje ne nudi ustreznih znanj.

Vsi ravnatelji velik pomen pripisujejo dobrim odnosom, komunikaciji in motivaciji. Raziskava je pokazala, da je pohvala zelo pomemben motivacijski dejavnik in učiteljem veliko pomeni. Naše ugotovitve se ne ujemajo povsem z literaturo glede pohvale kot najpomembnejšega elementa nematerialnega nagrajevanja, kot se je to izkazalo v naši raziskavi. Raziskava Likarja in Faturja (2009) je pokazala, da je denar glavno gonilo menedžmenta idej. Tako smo prišli do ugotovitve, da je v gospodarstvu motivacija denar, v negospodarstvu pa pohvala. Zanimiva bi bila podrobna raziskava na to temo.

Ugotovili smo, da je velik problem kurikul in tog šolski sistem nasploh. Ravnatelji opozarjajo na to problematiko, toda sprememb ni oziroma se šolski sistemi

spreminjajo zelo počasi. Ob tem se sprašujemo, koliko generacij zgrešen oziroma pomanjkljiv šolski sistem zatre prav na področju inovativnosti. Ena pomembnih možnosti je v odprtem kurikulu, kjer šole same določijo, kako bodo razvijale področje inovativnosti. Menimo, da bi snovalci kurikula, zakonodaje in pravilnikov morali prisluhniti raziskovalcem, da bi skupaj tlakovali pot pravi inovativnosti, za katero je v srednješolskem prostoru še dovolj prostora. Tudi Fullan in Hargreaves (2000, str. 46) opozarjata, da kurikul zavira izboljšave, ker je veliko predpisanega, vsebine so preobsežne in učitelji se usmerjajo samo v to, kako bodo snov predelali. Tudi v naši raziskavi smo prišli do enakih ugotovitev. Spillane (2006) pravi, da ravnatelji ne bi smeli dovoliti, da hitre spremembe politik in nova preverjanja znanja šole pretresejo ter onemogočijo tisto najpomembnejše, to je učenje za življenje. Že osnovnošolski sistem je pomanjkljiv in otroci nimajo pogojev za razvijanje ustvarjalnosti ter inovativnosti. Premalo dobijo osnovnega znanja oziroma ga ne utrdijo, ravnatelji opozarjajo, da imajo zaradi tega kar precej težav.

Naši izsledki tudi kažejo, da šole nimajo konkretnih inovacijskih dosežkov, da so le sledilci inovacijskih sprememb. Menimo, da ima šolski prostor še ogromno prostora za prave inovacije. Vsi ravnatelji poudarjajo, da se trudijo glede inovativnosti, na kar kaže veliko število projektov na vseh preučevanih šolah, toda to ni odločujoč kazalnik za inovativnost.

Primerjava kontrolne skupine učiteljev glede na stališča ravnateljev kažejo, da na učitelje vpliva inovativni ravnatelj, ki svoje sodelavce spodbuja v tej smeri, pripisujejo mu ključno vlogo pri razvoju inovativnosti. Ugotavljamo, da bi bilo treba učitelje in ravnatelje bolj izobraziti na področju slabo obvladovanega inoviranja. Kažejo se posledice recesije in nacionalnega varčevanja pri usposabljanju učiteljev, ki dolgoročno prinaša veliko škode.

Opazili smo, da se nekatere šole oziroma ravnatelji bojijo izstopiti iz začrtanih okvirov, kar pa je pravzaprav tisto, ki šole dela boljše oziroma inovativnejše. Upati si, tvegati, imeti pogled v prihodnost – to so smernice za inovativno šolo. Na žalost mora biti ravnatelj večkrat iznajdljiv in poiskati mora luknjo v zakonu ali pravilniku, da poišče pot, ki ni prepovedana, ker je drugače lahko kaznovan, da neko inovativnost lahko vseeno izpelje.

Na podlagi rezultatov raziskave predlagamo model razvoja inovativne šole (slika 1), ki vključuje: raven države oziroma sistemska raven; raven šole, kjer je pomembna vloga vodstva in vloga učiteljev ter sodelovanje z lokalnim okoljem, vse skupaj pa z namenom, da šola izobrazi ustvarjalne in inovativne učence, ki bodo kos izzivom sodobne družbe.

Slika 1: Model razvoja inovativne šole

4. Sklep

Ugotavljamo, da se ravnatelji in učitelji sicer zavedajo, kako pomemben je razvoj inovativnosti ter ustvarjalnosti na srednjih šolah in v izboljšanje stanja vlagajo določene napore. Žal pa so znanja, kompetence in motiviranost zaposlenih premajhni za opazno izboljšanje stanja.

Naša raziskava je pokazala, da je inovativnosti v slovenskih šolah malo, saj ima lastne inovativne dosežke le ena od proučevanih šol, ostalih pet šol je bolj primer inovacijskih sledilcev. Ugotavljamo torej, da je konkretnih inovacijskih rezultatov relativno malo, šole so večinoma sledilci. Zanimiva je primerjava z raziskavo v slovenskem gospodarstvu; stanje je slabše, kot prikazujejo najpogosteje uporabljeni statistični kazalniki (Likar idr., 2011). Tudi na ravni gospodarstva kot po mednarodnih primerjavah (Summry Innovation Index) je Slovenija "v veliki meri dežela inovacijskih sledilcev" (prav tam). In dokler šole ne bodo pripravile mladih na izzive inovativne družbe, jih opremile z znanji, veščinami, predvsem pa z osebnostnimi lastnostmi, potrebnimi za mednarodno konkurenčnost na vseh področjih delovanja, bo Slovenija ostala v neugledni družbi sledilcev.

Petra Kunc, M.A., Borut Likar, Ph.D.

Innovation in secondary education: A threat or a recipe for survival

In order to thrive in a knowledge-based society and maintain a competitive edge in the age of globalisation, we must be aware of the importance of creativity and innovation for personal, social and economic development. And this is where the schooling system plays a vital role. Innovation is a broad and complex concept that takes many forms: technological, social, sociological, organisational, and methodical innovations, all of which can be applied to all aspects of life and are being introduced into the school system. Innovation is the single most important quality needed in a staff common room. Students should be walking into an environment that is future-oriented and promotes thinking outside the box. Therefore, the purpose of this article is to introduce how innovation is implemented in certain Slovene secondary schools and to disclose the results of the qualitative research, conducted in May 2013. Since innovation in secondary education is still a rather poorly researched area, we were compelled to look into the innovation issues and factors that stimulate or obstruct innovative ideas.

If Slovenia wishes to keep up in this global knowledge economy, it is imperative that innovation does not remain just a subject of discussion in academic and economic circles, but is implemented into the initial stages of the education process. The key role in this process, therefore, is played by the education system itself (Likar and Fatur 2009; Likar 2010). It is imperative that school students are equipped with proper inventive and innovational knowledge. What is more, a new economy has emerged and generated a need for more complex and specific skills and entrepreneurial values, such as: intellectual curiosity and creativity, endurance, risk taking, cooperation abilities, moral responsibility and many other qualities, crucial for the development of an innovative individual and consequently, society as such. Therefore, the aim and the outcome of the schooling system should be an innovative student, equipped with great knowledge and capable of creative thinking (Likar 2008). Unfortunately, our school system manages to achieve the opposite: it strips most individuals of their innate genius and converts them into submissive, uncreative students with low self-esteem.

We really ought to look at best practices in other countries, where youth is encouraged to be innovative and where knowledge is traded as a marketable commodity in the new workplace of the current information age. According to the previously conducted researches, the condition in the Slovene education system is thus rather alarming.

The purpose of the qualitative study was to analyse the concept of the innovative capacity of Slovene secondary schools at the level of the managerial sector. The research was conducted on a selection of six secondary schools: four grammar and two secondary vocational schools, three of which, according to the Board of Education in Ljubljana, proved to be the most innovative, while the other three were graded as average. Most data was compiled with the help of extended interviews, conducted with the six school principals, with the questionnaire analysis of the answers given by thirty

teachers, and with the analysis of secondary documents, such as the school curriculum and its yearly realisation report. The qualitative data analysis method by Miles and Huberman (1994) was used to analyse all the information that we gathered during the course of our research. This analytical method breaks down the analysis of qualitative data into three processes: reducing data, displaying data, and drawing and verifying the conclusion. The data regarding the common characteristics of innovative and average schools was first summarised, then the information provided by the teachers was sorted – in order to draw justified conclusions from the acquired data.

Our study has shown that the school principals are aware of how crucial innovation and creativity in education really are, for we are living in the age of transformation, where no one who is in a leading position, can afford to neglect the development and necessary changes in the school system. All the interviewed principals agreed upon the importance of good interpersonal relations, communication and motivation. They also unanimously acknowledged that problems appear due to the framed curriculum and the rigid school system. It is our opinion that those who prepare the curriculum, legislation, and regulations should cooperate with the researchers in order to have a greater impact on educational practice. As discovered, a small number of innovations are being implemented in primary schools as well; however, these do not enable children to develop creativity or innovation, nor do they ensure the optimal quality of education, as seen by the principals.

The conclusion from the study showed that teachers' perceptions of their own effectiveness and innovativeness were greatly influenced by an innovative principal. Therefore, professional staff should undergo a great deal of additional training in the education system's restructuring process. However, the long term damage has already been caused by the current state of affairs: the economic crisis and cut-backs in the financing of teacher training.

The study also points to the existing tendency to go with the flow, since neither schools nor their personnel had any concrete accomplishments in terms of innovation, and were afraid to step out of the frame, to take a risk, which, ironically, are the very qualities needed for the development of an innovative school.

Based on the results of the research, we suggest a model innovative school, which should be developed in co-operation with experts from the national, local and educational level, in agreement and with the intent to create innovative and creative individuals, who will be able to face the challenges of modern society. At the national level this could be achieved by introducing appropriate innovation strategies, by making certain improvements in the curriculum, and by enabling additional training courses in innovation for the educational workforce. The responsibility of the school management is to ensure support, clear innovative vision and objectives, a professional atmosphere and culture as well as the professional training of employees, and to increase co-operation with the local environment and its business, scientific and parental organisations. Teachers are the ones who must enforce innovative teaching, encourage creativity in all students, and offer them their support and help with the realisation of new ideas. At the

same time, one must know how to overcome systematic, organisational, and personnel obstacles.

In spite of the great awareness of both principals and teachers about the importance of innovation and creativity in the secondary school system, and despite their efforts to implement these into the education process, sadly the level of their competence and motivation is too low to enhance significant improvements.

Our research has therefore proven that there is a small degree of innovation in the Slovene school system. Only one of the studied schools showed certain innovation achievements, whereas the other five schools were merely innovation followers. Therefore, the Slovenian innovation system has poorly evolved, both in economy as well as in education, as conducted from a comparison of this research to the research of economic development. The condition is far more alarming than presented in the statistics reports (Likar 2011). Based on the Summary Innovation Index, Slovenia falls into a group of innovation followers, and will remain there as long as our education system remains inadequate to equip the youth with knowledge, skills, competitiveness, and the new thinking needed to tackle modern society's challenges and its inevitable change.

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Matematična anksioznost in uspešnost pri matematiki

Znanstveni članek

UDK 37.016:51

KLJUČNE BESEDE: matematična anksioznost, učna uspešnost, učenci

POVZETEK – Matematično anksioznost opredeljujejo občutja napetosti in zaskrbljenosti v situacijah reševanja nalog, ki zahtevajo matematično znanje. Posameznik meni, da njegove zmožnosti ne dosegajo ravni zahtevanega znanja, in je zaskrbljen zaradi možne neuspešnosti. Avtorica sintezno predstavlja rezultate različnih študij, v katerih so bile proučevane značilnosti matematično anksioznih posameznikov in povezanost matematične anksioznosti z uspešnostjo pri matematiki, ter teoretske modele, ki pojasnjujejo omenjene povezanosti. Predstavljene so tudi ugotovitve raziskav o povezanosti matematične anksioznosti z vrsto in zahtevnostjo nalog ter značilnosti kognitivnega procesiranja anksioznih posameznikov. V zadnjem delu članka avtorica primerja matematično anksioznost slovenskih 15-letnikov z njihovimi vrstniki na ravni povprečja OECD ter povezanost matematične anksioznosti z matematično pismenostjo v raziskavi PISA 2012. V splošnem rezultati raziskave PISA 2012 kažejo, da so slovenski 15-letniki v primerjavi z vrstniki iz držav OECD bolj matematično anksiozni. Visoko matematično anksiozni 15-letniki v Sloveniji v povprečju dosegajo drugo (temeljno) raven od šestih ravni matematične pismenosti.

Scientific paper

UDC 37.016:51

KEYWORDS: mathematics anxiety, academic performance, students

ABSTRACT – Mathematical anxiety is defined by feelings of distress and worries in situations of solving tasks that require mathematical knowledge. An anxious individual has a low belief in his ability to achieve the required level of knowledge and is concerned about the possible failure. The author has synthesized the results of studies which explored the characteristics of mathematically anxious individuals and the relationship between mathematics' anxiety and mathematics' performance. She has also presented some findings on the relationship between mathematics' anxiety and the nature and complexity of the tasks, and the characteristics of cognitive processing of anxious individuals. In the last part of the article, the author compares levels of mathematics' anxiety of Slovenian 15-year-olds with their peers at the level of the OECD average and analysed the relationship between mathematics' anxiety and mathematical literacy as measured by PISA 2012. In general, the results of PISA 2012 showed that Slovenian 15-year-olds reported more mathematical anxiety compared to the average score of their peers from the OECD countries. On average, Slovenian highly mathematically anxious 15-year-olds reached the baseline Level 2 in the PISA mathematics' assessment.

1. Uvod

Sodobna družba je podatkovno in tehnološko usmerjena, zato je tudi cilj šolskih sistemov po vsem svetu, da izobrazijo učence na zadovoljivi ravni matematične pismenosti. Doseganje tega cilja je zahtevno, saj se v procesu pridobivanja matematične pismenosti skozi šolanje pojavljajo številne objektivne in psihološke ovire, ki negativno učinkujejo na uspešnost pri tem predmetu. Ena izmed objektivnih ovir je dejstvo,

da matematika spada v nabor zahtevnejših šolskih predmetov (še materinščina in tuj jezik), kjer je povprečna uspešnost učencev nižja od njihovega skupnega povprečnega uspeha (Flere, Klanjšek, Musil, Tavčar Kranjc in Kirbiš, 2009). V raziskavah avtorji tudi ugotavljajo upadanje uspešnosti pri matematiki med šolanjem, sploh na predmetni stopnji osnovnošolskega izobraževanja med 10. in 15. letom starosti (glej Martin, Anderson, Bobins, Way in Vellar, 2012; Puklek Levpušček in Zupančič, 2009), v primerjavi z osnovnošolsko povprečno uspešnostjo pri matematiki pa je ta na srednješolski ravni še bistveno nižja (Peklaj idr., 2009). Ena izmed poglavitnih psiholoških ovir pri učenju matematike je ta, da s starostjo učencev upada doživljanje matematike kot koristnega in pomembnega predmeta, prepričanja o lastnih sposobnostih pri matematiki pa postajajo manj optimistična ((Martin idr., 2012; Wigfield, Eccles, Mac Iver, Reuman in Midgley, 1991). Z vidika motivacijske teorije pričakovanja in vrednosti (Wigfield in Eccles, 2000) je takšno zaznavanje predmeta lahko problematično. Pričakovanja lastne učinkovitosti in uspešnosti pri učenju ter zaznana pomembnost in uporabnost učnih vsebin namreč predstavljajo pomembno motivacijsko silo, ki učence vodi k bolj aktivnemu učenju in posledično k višji učni uspešnosti. Četudi zaznana pomembnost matematike s starostjo učencev upada, pa so pričakovanja socialnega okolja (npr. staršev) in učenca glede uspešnosti pri matematiki lahko visoka, saj je ocena pri matematiki pomemben dejavnik vpisa na naslednjo stopnjo izobraževanja. V družbi tudi pogosto naletimo na prepričanje, da je matematika sama po sebi zahtevna in da k uspehu pri matematiki v večji meri pripomorejo sposobnosti kot prizadevnost in marljivost. Takšno prepričanje vodi v sklep, da so lahko pri matematiki dobri samo redki izbranci, kar dodatno zmanjšuje motivacijo za učenje pri tem predmetu. Prepričanja o visoki zahtevnosti in pomembnosti matematike za nadaljnjo izobraževalno pot ter nizko samozaupanje učenca, da je lahko pri matematiki uspešen, tako lahko vodijo v občutja napetosti in nelagodja, ko se učenec sooča z matematičnimi nalogami. Nasploh se kaže, da je uspešnost pri matematiki povezana s številnimi psihološkimi značilnosti učenca, kot so prepričanja o lastnih zmožnostih uspešnega učenja matematike, stališča o uporabnosti in koristnosti matematike ter stopnja matematične anksioznosti (Higbee in Thomas, 1999).

2. Značilnosti matematično anksioznih učencev

Matematično anksioznost označujejo občutja napetosti, zaskrbljenosti in strahu v situacijah, ki zahtevajo posameznikovo učinkovitost pri matematičnih nalogah (Ashcraft, 2002). Richardson in Suinn (1972) tudi dodajata, da se omenjena občutja napetosti in negotovosti pojavljajo pri uporabi števil in reševanju nalog, ki zahtevajo matematično znanje, ne le v šolskih, ampak tudi v vsakodnevnih situacijah.

Anksiozen učenec je prepričan, da njegove zmožnosti ne dosegajo ravni zahtevanega znanja pri predmetu, ter je zaskrbljen zaradi pričakovane neuspešnosti. Za visoko matematično anksiozne učence je značilna močna tendenca k izogibanju ma-

tematike, takšni učenci v manjši meri izbirajo predmete ali študije, ki so povezani z matematiko (Hembree, 1990), in imajo slabše ocene pri matematiki ter so slabše matematično pismeni (Ahmed, van der Werf, Kuyper in Minnaert, 2013; Hembree, 1990; Ma, 1999). V metaanalitični študiji na vzorcu 151 raziskav je avtor Hembree (1990) poročal o povprečni korelaciji r = –0,34 med matematično anksioznostjo in uspešnostjo učencev pri matematiki. Avtor je zaključil, da matematična anksioznost predstavlja resno oviro pri spoprijemanju z matematičnimi nalogami, ukrepi zmanjševanja anksioznosti, kot so kognitivna modifikacija napačnih prepričanj in krepitev zaupanja v svoje matematične sposobnosti ter sistematična desenzitizacija pa lahko pripomorejo k izboljšanju uspešnosti pri matematiki. V kasnejši metaanalitični študiji, ki je zajela samo raziskave z vzorci osnovnošolskih in srednješolskih učencev, je avtor Ma (1999) ugotovil, da ima povprečni učenec iz skupine z nizko matematično anksioznostjo višji rezultat na matematičnem testu kot 71% učencev v skupini z visoko matematično anksioznostjo. Matematično anksiozni učenci kažejo pomembno nižje računske zmožnosti na različnih področjih matematike, posledično imajo tudi nižje ocene pri matematiki, kar lahko njihovo anksioznost v prihodnjih situacijah reševanja nalog še zvišuje (Cates in Rhymer, 2003). Visoko matematično anksiozni učenci imajo tudi bolj negativna stališča do matematike (Martin idr., 2012) in negativna prepričanja o lastnih matematičnih sposobnostih (May, 2006), korelacije med matematično anksioznostjo in omenjenimi značilnostmi motivacije in prepričanj o sebi pa se gibljejo v intervalu med –0,47 in –0,82 (Ashcraft, 2002). Učenci, ki so matematično anksiozni, imajo tudi v večji meri izraženo splošno anksioznost kot potezo in stanje, testno anksioznost v obliki skrbi in emocionalnega neugodja v testnih situacijah ter strah pred negativnim socialnim vrednotenjem (Hembree, 1990).

Odnos med matematično anksioznostjo in uspešnostjo pri matematiki pojasnjujeta dva nasprotujoča si teoretska modela. *Interferenčni model* razlaga matematično anksioznost kot motnjo v priklicu matematičnega znanja in izkušenj (Wine, 1971). Anksiozni posamezniki namreč delijo svojo pozornost med osredotočenost na nalogo in osredotočenost na skrbi, telesne simptome in samokritične misli. Ker pozornost ni povsem usmerjena na dejavnosti v zvezi z nalogo, to povzroči slabše dosežke pri matematiki. Po drugi strani pa *deficitni model* razlaga matematično anksioznost kot posledico neuspehov pri matematiki v preteklosti. Neuspeh pri matematiki naj bi bil predvsem posledica slabih učnih navad in neuspešnih strategij pri pisanju testa in ne matematične anksioznosti (Tobias, 1985). Oba modela torej različno pojmujeta matematično anksioznost; interferenčni model jo opredeljuje predvsem kot dejavnik (vzrok) neuspeha pri matematiki, deficitni model pa kot posledico preteklih neuspehov pri matematiki, medtem ko vzroke za neuspehe išče drugje. Verjetno pri odnosu med matematično anksioznostjo in uspešnostjo ne gre za enosmeren vpliv, ampak pojava sovariirata oziroma vplivata drug na drugega. Dispozicijske značilnosti učenca (anksioznost kot del osebnostne strukture) usmerjajo miselno procesiranje in vedenje učenca v situacijah ukvarjanja z matematiko (pozornost na vsiljive misli, obremenjenost s časovnimi omejitvami testne situacije, večja osredotočenost na neuspeh kot uspeh, večje zahteve po strukturiranosti in rutinskosti nalog, izogibanje soočanju s

težjimi nalogami, kjer je uspeh pri reševanju nepredvidljiv). Po drugi strani nižja uspešnost (ki je lahko produkt anksioznosti, neustreznih učnih strategij ter drugih značilnosti miselnega procesiranja) podkrepi anksiozne negativne misli in emocionalne ter fiziološke reakcije (napetost, nemir, povišan srčni utrip, potenje …). Tako se simptomi anksioznosti pojavijo tudi v prihodnjih podobnih situacijah, se generalizirajo na različna področja ukvarjanja s števili in matematičnimi nalogami, lahko pa se pojavijo že zgolj ob razmišljanju o matematiki.

Ugotovitve raziskav kažejo, da je matematična anksioznost povezana s spolom – višja je pri dekletih kot fantih (Goetz, Bieg, Lüdtke, Pekrun in Hall, 2013; Hembree, 1990; Hunt, 1985). Omenjeno razliko lahko povezujemo z razlikami po spolu v prepričanjih o lastnih zmožnostih učenja in uspešnosti pri matematiki. V nekaterih raziskavah namreč ugotavljajo, da je zaznana samoučinkovitost na področju matematike nižja pri dekletih kot fantih (Goetz idr., 2013; Pajares in Miller, 1994). Goetz je s sodelavci v študiji odkril, da je anksioznost kot osebnostna poteza res v večji meri prisotna pri dekletih kot fantih; tudi pri tistih dekletih, ki se v matematičnih dosežkih niso razlikovala od fantov. Ko pa so dekleta poročala o anksioznosti pri pouku matematike in med pisanjem testa matematike (torej v dejanskih situacijah), se v stopnji anksioznosti niso razlikovala od fantov. Avtorji pripisujejo omenjene razlike v anksioznosti kot osebnostni potezi in stanju prav netočnim samoprepričanjem deklet o lastnih matematičnih zmožnostih. Četudi so lahko v konkretnih situacijah primerljivo ali celo bolj uspešna od fantov pri matematiki, jih njihovo nezaupanje v lastne matematične zmožnosti "prepričuje" v to, da so bolj anksiozne, posledično pa se zato dekleta tudi v manjši meri odločajo za bolj matematično usmerjene študije. Nekateri avtorji (npr. Zettle in Houghton, 1998) pripisujejo nižjo samoučinkovitost pri matematiki ter višjo matematično anksioznost pri dekletih kot fantih tudi preprostemu dejstvu, da so dekleta v večji meri nagnjena k razkrivanju podatkov o sebi kot fantje ter prepričanju fantov, da je doživljanje anksioznosti zanje socialno nesprejemljivo. Bolj negativna prepričanja o sebi pri matematiki pa so lahko pri dekletih tudi posledica splošnega mnenja v družbi, da matematika ni tipično področje, na katerem bi se dekleta lahko enako ali bolje dokazovala kot fantje. Prav nasprotno: matematika velja za tipično "moško" področje (May, 2006). Mednarodne raziskave znanja (npr. PISA, TIMSS) sicer kažejo nekoliko boljšo matematično pismenost pri fantih kot dekletih v mnogih državah, vendar se omenjena razlika ni potrdila na slovenskih vzorcih osmošolcev in dijakov (Japelj Pavešić, Svetlik in Kozina, 2012; Štraus, Šterman Ivančič in Štigl, 2013). Če analiziramo razlike v povprečnih vrednostih zaključenih ocen pri matematiki, pa lahko celo ugotovimo, da so vsaj v zadnjem triletju osnovne šole ter srednji šoli dekleta bolj uspešna kot fantje (Flere idr., 2009; Peklaj, Kalin, Pečjak, Valenčič Zuljan in Puklek Levpušček, 2012; Puklek Levpušček in Zupančič, 2009).

Zanimivo je tudi vprašanje, kateri so poglavitni dejavniki tesnobnosti in nelagodja ob reševanju matematičnih problemov s perspektive učečih se posameznikov. Študentje so v raziskavi Jacksona in Leffingwella (1999) konsistentno navajali učitelja kot tistega, ki je v preteklosti najbolj vplival na njihovo doživljanje in stališča do matematike. Kot slabe izkušnje z učiteljem so omenjali predvsem učiteljeve slabšalne

opazke in negativno vedenje do učencev ter učiteljevo neobčutljivost za razumevanje snovi pri učencih. Kot pomemben dejavnik se je izkazala tudi učna oblika, ki jo uporablja učitelj matematike. Visoko anksiozni študentje so bili bolj uspešni, kadar je učitelj uporabljal frontalne učne oblike z metodo sistematične razlage, demonstracije primerov in utrjevanja snovi z reševanjem novih nalog. Študentje, ki niso imeli težav z anksioznostjo, pa so dosegali boljše uspehe v skupinah, kjer je učitelj uporabljal bolj konstruktivistične pristope k pouku matematike, to je metode z lastnim odkrivanjem in problemsko učenje (Clute, 1989). Učiteljev način vodenja razreda in komunikacije z učenci ter učne oblike in metode poučevanja matematike se torej kažejo kot pomembni dejavniki, ki vplivajo na razvoj doživljanja matematične anksioznosti.

3. Matematična anksioznost ter vrsta in zahtevnost nalog

Učinki anksioznosti se kažejo glede na vrsto in zahtevnost matematičnih nalog. Ashcraft (2002) ugotavlja, da učinkov anksioznosti ni bilo pri nalogah, ki so vsebovale preproste matematične naloge s celimi števili. Ko pa so udeleženci reševali naloge z ulomki, odstotki, razstavljanjem ter enačbe z neznankami, se je pokazala precejšnja povezava med matematično anksioznostjo in točnostjo reševanja. Ashcraft ugotavlja, da ima matematična anksioznost majhne učinke na reševanje nalog s prištevanjem enomestnih števil in množenjem. Pokazalo pa se je, da matematično anksiozni udeleženci raziskave naredijo več napak pri reševanju nalog, ki zahtevajo odgovor pravilno ali napačno (npr. $8+7=16$). Prav tako so se pri matematično anksioznih udeležencih pokazale težave pri seštevanju s prehodom čez desetico. Tako pri tovrstnih matematičnih operacijah porabijo več časa, kot če seštevajo in ne prehajajo čez desetico v primerjavi z matematično neanksioznimi posamezniki. Matematična anksioznost pa se ne povezuje le z vrsto in zahtevnostjo matematičnih nalog, ampak jo spodbujajo tudi socialne situacije pri pouku matematike, ko so učenci izpostavljeni s svojim znanjem. V raziskavi K. Newstead (1995) so učenci poročali, da so anksiozni predvsem v situacijah, ko jim učitelj matematike zastavi vprašanje, kadar tekmujejo v matematičnem kvizu, ko morajo pojasniti matematični problem oziroma rešitev sošolcu ali učitelju in ko jih nekdo opazuje med reševanjem naloge.

4. Matematična anksioznost in kognitivno procesiranje

Zanimivo je vprašanje, ali matematična anksioznost vpliva na mentalno procesiranje med reševanjem problemov. Različno kompleksne matematične naloge verjetno različno obremenjujejo delovni spomin, ki je odgovoren za zavestno učinkovito mentalno procesiranje. Ashcraft in Kirk (2001) sta izvedla eksperiment,v katerem so naloge vsebovale seštevanje z enomestnimi in dvomestnimi števili, polovica nalog pa

je zahtevala računanje s prehodom čez desetico. Udeleženci v eksperimentalni skupini so imeli dvojno nalogo: primarna naloga je bila reševanje matematične naloge (na pamet), njihova sekundarna naloga pa je bila, da so si morali zapomniti naključne črke (to je bila naloga, ki je dodatno obremenila delovni spomin). Pred primarno nalogo so bili predstavljeni nizi dveh ali šestih črk, po reševanju matematične naloge pa so udeleženci morali obnoviti črke v zaporedju. Če so naloge vsebovale prehod čez desetico, so se napake pri reševanju nalog v večji meri pojavile pri bolj kot manj matematično anksioznih udeležencih. To je bilo posebej očitno, če je bila sekundarna naloga težja (zapomnitev šestih črk v zaporedju). Pri računih s prehodom (7 + 9, 28 + 17) so visoko matematično anksiozni naredili 40 odstotkov napak (ob zapomnitvi šestih črk), nizko matematično anksiozni pa 20 odstotkov. Pri kontrolni skupini (kjer sekundarne naloge ni bilo) so bila razmerja v napakah 16 odstotkov in 8 odstotkov. Razlike v delovnem spominu med visoko in nizko matematično anksioznimi udeleženci so proučevali tudi z obsegom neposrednega pomnjenja. Če so delovni spomin (obseg neposrednega pomnjenja) preverjali z besednimi nalogami, se skupine niso razlikovale. Razlike (v korist nizko matematično anksioznih) pa so nastajale pri preverjanju delovnega spomina z aritmetičnimi nalogami.

Opisane rezultate eksperimenta lahko razložimo s pomočjo modela učinkovitosti procesiranja (angl. "processing efficiency theory", Eysenck in Calvo, 1992). Anksioznost ovira delovni spomin, ker anksiozni posamezniki usmerjajo pozornost na vsiljive misli in skrbi ter manj na nalogo. Vsiljive misli in skrbi torej "izrabljajo" določen del pozornosti, ki jo posameznik potrebuje za učinkovito reševanje naloge. V primeru matematične anksioznosti te misli verjetno vsebujejo zaposlenost z lastnim negativnim odnosom do matematike, nizkim samozaupanjem, v primeru časovnih omejitev reševanja naloge pa tudi z miselnim obremenjevanjem, koliko časa je še na razpolago. Usmerjanje mišljenja na vsiljive misli deluje kot sekundarna naloga v eksperimentu – odvrača pozornost od reševanja naloge. Uspešnost pri matematični nalogi je torej v veliki meri odvisna od stopnje zahtevane udeležbe delovnega spomina pri reševanju naloge. Na primer rutinske aritmetične naloge ne zahtevajo veliko procesiranja delovnega spomina, zato je pri njihovem reševanju učinek matematične anksioznosti minimalen. Če pa imamo naloge s prehodom čez desetico, posojanjem, zaporedjem operacij oziroma reševanjem naloge korak za korakom (npr. zahtevno deljenje z večmestnimi števili, kompleksne besedilne naloge) – torej z nalogami, ki zahtevajo precejšnjo udeležbo delovnega spomina – je učinek matematične anksioznosti pomemben.

5. Matematična anksioznost in matematična pismenost v raziskavi PISA 2012

Mednarodna raziskava znanja PISA je projekt primerjanja znanja 15-letnikov v državah OECD in članicah partnericah. Od leta 2000 poteka vsaka tri leta in vključuje preverjanje matematične, naravoslovne in bralne pismenosti. V raziskavi PISA 2012

je bilo poudarjeno področje merjenja matematična pismenost, kar pomeni, da so udeleženci reševali dve tretjini nalog s področja matematike. Matematična pismenost je v raziskavi opredeljena kot "zmožnost analiziranja, utemeljevanja in učinkovitega sporočanja svojih zamisli in rezultatov pri oblikovanju, reševanju in interpretaciji matematičnih problemov v različnih situacijah" (Štraus idr., 2013, str. 11). Lestvica matematičnih dosežkov je razdeljena v šest težavnostnih ravni glede na kompetence (znanja, spretnosti), ki so v ozadju dosežkov. Raziskava PISA 2012 je bila izvedena na reprezentativnem vzorcu 15-letnikov iz 65 držav (N = 510 000). V Sloveniji je sodelovalo 8.405 15-letnikov (večino vzorca predstavljajo dijaki in dijakinje vseh slovenskih srednješolskih izobraževalnih programov, učenci in učenke 24 osnovnih šol ter udeleženci ene ustanove za izobraževanje odraslih). Slovenski 15-letniki so v raziskavi PISA 2012 dosegli enak rezultat kot leta 2009, ko matematična pismenost ni bila poudarjeno podočje merjenja. Dosežek 501 točk je statistično pomembno višji od povprečja OECD (494 točk) (Štraus idr., 2013). 80 odstotkov slovenskih15-letnikov dosega raven temeljnih matematičnih kompetenc (druga raven), največji delež jih dosega tretjo raven (24%), najvišjo raven (šesto raven) pa dosega 3 odstotke slovenskih 15-letnikov. Glede na matematične procese, ki so jih uporabljali pri reševanju nalog, so slovenski 15-letniki dosegli najboljše rezultate pri nalogah, ki so zahtevale uporabo matematičnih konceptov, dejstev, postopkov in sklepanj, med matematičnimi vsebinami pa so najbolje reševali naloge na področju *Liki in telesa* ter *Količine*, slabše pa naloge na področju *Spremenljivke in odnosi* ter *Verjetnost in delo s podatki*. Slovenska dekleta se v povprečnem matematičnem dosežku niso pomembno razlikovala od fantov (OECD, 2013; Štraus idr., 2013).

V raziskavi PISA 2012 so 15-letniki po dvournem reševanju nalog izpolnjevali tudi vprašalnik (30 min.), ki vsebuje vprašanja o pogojih, v katerih živijo udeleženci raziskave, učnih navadah, uporabi informacijsko-komunikacijske tehnologije (IKT), odnosu do učenja ter zavzetosti oziroma motivaciji za učenje in nadaljnje izobraževanje. Med drugim vprašalnik meri tudi osebna prepričanja na področju matematike: matematično samoučinkovitost (prepričanja mladostnikov, da zmorejo učinkovito reševati matematične probleme in premagovati težave, ki pri tem nastajajo), matematično samopodobo (zaupanje v svoje matematične kompetence) ter matematično anksioznost.

V nadaljevanju predstavljamo rezultate slovenskih 15-letnikov na področju matematične anksioznosti ter njene povezanosti z matematično pismenostjo v primerjavi s povprečjem rezultatov 15-letnikov vseh OECD držav, vključenih v študijo. Omenjene rezultate povzemamo po poročilu OECD (2013): *PISA 2012 Results: Ready to learn. Students' engagement, drive and self-beliefs. Volume III. PISA: OECD Publishing.*

Matematično anksioznost so v raziskavi PISA 2012 ugotavljali s pomočjo petih trditev, ki se nanašajo na doživljanje zaskrbljenosti, napetosti in nemoči pri pouku matematike, v situacijah reševanja matematičnih problemov in ocenjevanja znanja pri matematiki. Omenjenih pet trditev je združenih v *Indeks zaskrbljenosti glede matematike*, ki je standardiziran indeks na ravni držav OECD s povprečjem 0 in standardnim odklonom 1. Pozitivne vrednosti indeksa pomenijo, da doživljajo 15-letniki

neke države v povprečju višjo matematično anksioznost, kot jo v povprečju doživljajo 15-letniki iz držav OECD, vključenih v študijo. Negativne vrednosti indeksa pa pomenijo, da doživljajo 15-letniki neke države v povprečju nižjo matematično anksioznost, kot jo v povprečju doživljajo 15-letniki iz držav OECD, vključenih v študijo. Slovenski 15-letniki so v primerjavi z vrstniki iz držav OECD v povprečju nekoliko bolj matematično anksiozni (vrednost Indeksa zaskrbljenosti glede matematike je 0,07), nadpovprečna vrednost Indeksa zaskrbljenosti glede matematike je značilna tako za dekleta na ravni OECD povprečja (0,14) kot za slovenska dekleta (0,15). Doživljanje matematične anksioznosti je pri slovenskih fantih višje (–0,01), kot je to ugotovljeno za povprečnega fanta OECD držav (–0,15).

V tabeli 1 so predstavljeni odstotki odgovorov 15-letnikov na trditve o doživljanju matematične anksioznosti. Primerjali smo rezultate slovenskih 15-letnikov s povprečnim rezultatom OECD držav (celoten vzorec ter dekleta in fante posebej). V splošnem se kaže, da se matematična anksioznost (tako na ravni povprečja OECD kot pri slovenskih 15-letnikih) najbolj izraža v zaskrbljenosti glede pričakovane zahtevnosti pouka matematike in možnosti slabe ocene pri predmetu. Približno 60 odstotkov vključenih 15-letnikov je tako odgovorilo, da se popolnoma strinjajo oziroma strinjajo s trditvijo, da jih pogosto skrbi, da bo pouk matematike zanje zahteven. Še nekoliko višji je odstotek tistih, ki se popolnoma strinjajo oziroma strinjajo s trditvijo, da jih skrbi možnost slabe ocene pri matematiki. Približno 30 odstotkov 15-letnikov (tako na ravni povprečja OECD kot v slovenskem vzorcu) pa poroča, da so napeti, ko morajo narediti matematično nalogo in se počutijo nemočne, ko rešujejo matematični problem. Prav tako približno 30 odstotkov 15-letnikov na ravni povprečja OECD držav poroča, da so živčni pri reševanju matematičnih problemov, pri slovenskih 15-letnikih pa je ta odstotek še višji. Na ravni povprečja OECD držav dekleta poročajo o višji ravni doživljanja matematične anksioznosti na vseh trditvah Indeksa zaskrbljenosti glede matematike kot fantje. V Sloveniji se statistično pomembne razlike po spolu pojavljajo pri treh trditvah: dekleta v večji meri kot fante skrbi, da bo pouk matematike zanje zahteven in da bodo pri matematiki dobile slabo oceno. Prav tako se v večji meri počutijo nemočne, ko rešujejo matematični problem kot fantje (OECD, 2013, str. 312). Iz rezultatov lahko sklepamo, da je doživljanje anksioznosti pri matematiki dokaj močno prisotno pri mladostnikih po vsem svetu, v Sloveniji pa je to doživljanje še močneje izraženo. Mladostniki zlasti pogosto anticipirajo možne negativne posledice, ki se lahko zgodijo pri pouku matematike (npr. pričakovana zahtevnost snovi, ki posledično lahko pomeni nerazumevanje snovi in manj učinkovito sledenje pouku) ter negativne posledice ocenjevanja znanja pri predmetu (tj. slaba ocena). Manj pa je pri mladostnikih prisotno emocionalno neugodje v dejanskih situacijah reševanja matematičnih problemov. Kot je bilo ugotovljeno že v preteklih raziskavah na nereprezentativnih nacionalnih vzorcih, tudi PISA 2012 kaže na močnejšo izraženost anksioznosti pri matematiki pri dekletih kot fantih v vseh OECD državah, razen Turčije (povprečna standardizirana vrednost razlike je bila –0,39). V slovenskem kontekstu je ta razlika nižja (standardizirana vrednost razlike je –0,17), vendar vseeno zaskrbljujoča. V matematični pismenosti se namreč slovenska dekleta pomembno ne razlikujejo od fantov, hkrati pa kar 70

odstotkov slovenskih 15-letnic skrbi, da bodo dobile slabo oceno pri matematiki. Prav tako so slovenska dekleta manj motivirana za učenje matematike, imajo bolj negativna prepričanja o lastnih zmožnostih na področju matematike, v prihodnosti pa imajo v manjši meri namen ukvarjati se z matematiko kot fantje (Štraus idr., 2013).

Tabela 1: Odgovori udeležencev raziskave PISA 2012 na trditve o doživljanju matematične anksioznosti (v odstotkih)

	Pogosto me skrbi, da bo pouk matematike zame zahteven.	*Ko moram narediti matematično domačo nalogo, postanem zelo napet/-a.*	*Pri reševanju matematičnih problemov postanem živčen/-na.*	*Ko rešujem matematičen problem, se počutim nemočen/-na.*	*Skrbi me, da bom pri matematiki dobil/-a slabe ocene.*
OECD povprečje (vsi)	59,5	32,7	30,6	29,8	61,4
Slovenija (vsi)	61,3	32,9	38,1	30,1	65,3
OECD povprečje (dekleta)	65,3	35,4	34,3	34,6	67,2
Slovenija (dekleta)	64,7	32,6	39,1	32,7	70,0
OECD povprečje (fantje)	53,7	29,9	26,9	25,2	55,6
Slovenija (fantje)	58,0	33,2	37,0	27,6	60,6

Opomba: V tabeli so prikazani odstotki 15-letnikov, ki so na trditve odgovorili s popolnoma se strinjam ali strinjam se.

Matematična anksioznost in matematična pismenost sta pomembno povezani (v negativni smeri). Na povprečni ravni držav OECD ena enota višje vrednosti Indeksa zaskrbljenosti glede matematike pomeni 34 točk nižji rezultat na testu matematične pismenosti, kar ustreza dodatnemu letu šolanja. V Sloveniji je ta razlika nižja: ena enota višje vrednosti Indeksa zaskrbljenosti glede matematike pomeni 27 točk manj na testu matematične pismenosti (OECD, 2013).

Tabela 2: Povprečni matematični dosežek 15-letnikov, ki se nahajajo v posameznih kvartilih rezultatov Indeksa zaskrbljenosti glede matematike

	1. kvartil	*2. kvartil*	*3. kvartil*	*4. kvartil*
OECD povprečje	542 (0,08)	507 (0,7)	482 (0,7)	456 (0,7)
Slovenija	541 (4,1)	512 (5,3)	495 (4,6)	470 (3,3)

Opomba: V oklepaju so prikazane standardne napake.

Tabela 2 prikazuje povprečno vrednost matematičnih dosežkov 15-letnikov v državah OECD in Sloveniji glede na višino Indeksa zaskrbljenosti glede matematike. Kot je razvidno, matematični dosežek upada od 1. do 4. kvartila rezultatov Indeksa zaskrbljenosti glede matematike. Povprečni matematični dosežek 15-letnikov z najnižjimi rezultati na Indeksu zaskrbljenosti glede matematike (1. kvartil) je 542 točk – povprečje OECD in 541 točk – Slovenija. Omenjen matematični dosežek predstavlja visok dosežek tretje ravni matematične pismenosti (spodnja meja četrte ravni je 545 točk). Povprečni matematični dosežek 15-letnikov z najvišjimi rezultati na Indeksu zaskrbljenosti glede matematike (4. kvartil) je 456 točk – povprečje OECD in 470 točk – Slovenija. Omenjena matematična dosežka predstavljata dosežek druge (temeljne) ravni matematične pismenosti. Iz tega lahko sklepamo, da so bili visoko matematično anksiozni 15-letniki pri reševanju matematičnih nalog v PISA 2012 v povprečju omejeni predvsem na neposredno sklepanje iz situacij in kontekstov, uporabo enega vira informacij in ene vrste predstavitve, uporabo osnovnih algoritmov in formul ter dobesedno interpretacijo rezultatov. Razlike v matematičnih dosežkih med nizko in visoko matematično anksioznimi 15-letniki so na ravni povprečja OECD višje kot v Sloveniji (razlika med 1. in 4. kvartilom mladostnikov glede na njihovo izraženost matematične anksioznosti je 86 točk na ravni povprečja OECD in 71 točk v Sloveniji). Prav tako je odstotek variabilnosti matematičnih dosežkov, ki jo lahko pojasnimo z matematično anksioznostjo višja na ravni držav OECD (14%) kot v Sloveniji (6%). Treba pa je opozoriti, da gre pri odnosu med matematično anksioznostjo in matematično pismenostjo zgolj za korelacijsko povezanost, sklepanje o vzročno-posledičnih odnosih pa sama narava študije PISA 2012 ne omogoča. Prav tako kot nelagodje in zaskrbljenost v situacijah reševanja matematičnih nalog lahko vpliva na raven matematičnih dosežkov, lahko govorimo tudi o obratni zvezi. Mladostniki, ki so slabše matematično pismeni, imajo več izkušenj z negativnimi povratnimi informacijami o svoji uspešnosti, prav tako se tudi dejansko soočajo z nalogami, ki so zanje (pre)zahtevne. Zaradi omenjenih neuspehov ter slabih neposrednih izkušenj v situacijah spoprijemanja z matematičnimi pojmi in nalogami se lahko krepi tudi doživljanje anksioznosti.

6. Sklep

Matematična anksioznost je vrsta anksioznosti v učnih situacijah, ki je razmeroma pogosto prisotna pri učencih. Učenci lahko zaznavajo matematiko kot predmet, ki je zanje zahteven in pri katerem je možnost uspešnosti manj verjetna, povprečna uspešnost pri matematiki pa je tudi dejansko nižja kot pri večini drugih učnih predmetov in se zmanjšuje skozi leta šolanja. Posledično se tako pri pouku matematike in ocenjevanju znanja pojavijo napetosti in skrbi v obliki testno nerelavantnih misli, ki ovirajo osredotočenost pozornosti, sploh na kompleksnejše matematične naloge. Dodatno oviro lahko predstavljajo učiteljev pretirano strog način vodenja razreda,

neustrezna komunikacija z učenci in učne metode, ki zahtevajo aktivno udeležbo pri konstrukciji matematičnega znanja. Tradicionalne učne metode, ki vključujejo predstavitev snovi, demonstracijo s primeri in utrjevanje snovi z matematičnimi vajami, so za anksiozne učence "varnejše", saj dajejo jasno strukturo in vodila pri učenju. Kljub temu pa v razredu ne gre zanemariti tudi problemsko zasnovanih učnih metod, ki vključujejo samostojno odkrivanje matematičnih pravil in zakonitosti ter reševanje matematičnih problemov, ki ne zahtevajo le rutinske uporabe naučenega postopka. Vsekakor pa je treba pri uvajanju takšnih aktivnosti v razredu biti pozoren tudi na anksiozne učence in jim skozi posamezne korake problemskega učenja nuditi oporo in sprotne povratne informacije. Rezultati raziskave PISA 2012 tudi nakazujejo, da so slovenski 15-letniki kljub nadpovprečnim rezultatom v matematični pismenosti glede na povprečje OECD držav nadpovprečno matematično anksiozni. V prihodnje bi zato bilo smiselno raziskati, kje so vzroki za omenjeno diskrepantnost med doživljanjem matematike in uspešnostjo pri tem predmetu.

Melita Puklek Levpušček, Ph.D.

Mathematics' anxiety and mathematics' performance

In the modern world, mathematics has been recognized as a fundamental science domain that underpins research, development, and innovation in many areas of society. Therefore, the objective of school systems all over the world is to educate students at a satisfactory level of numeracy. Reaching this goal is challenging, because the process of acquiring mathematical literacy during the school years interferes with many objective and psychological barriers that adversely affect the performance in mathematics. One of the objective obstacles is the fact that mathematics belongs to a set of school subjects (with their mother language and foreign language), where the average student performance is lower than their overall average performance (Flere, Klanjšek, Musil, Tavčar Kranjc, & Kirbiš, 2009). The authors also found a declining performance in mathematics during school, especially from 10 to 15 years of age (see Martin, Anderson, Bobins, Way, & Vellar, 2012; Puklek Levpušček & Zupančič, 2009). Accordingly, there is empirical evidence that the perception of mathematics as a useful and valued subject as well as students' beliefs about their own abilities in mathematics decline with age (Martin et al., 2012; Wigfield, Eccles, Mac Iver, Reuman, & Midgley, 1991). Expectations about one's own efficiency in learning and perceived importance and usefulness of learning contents represent significant motivational forces that lead students to active engagement in learning and, consequently, to a higher academic achievement (Wigfield & Eccles, 2000). Anxiety may arise when a student perceives the importance of mathematics for his/her future educational path, but believes in the high complexity of mathematics and holds negative self-perceptions about his/her own personal resources to successfully learn mathematics. Mathematical anxiety is characterized by feelings

of tension, distress and worries in situations that require individual's performance in mathematical tasks (Ashcraft, 2002). An anxious student thinks that he/she will not be able to achieve the required level of knowledge in the subject and is concerned about possible failures. Furthermore, highly mathematically anxious students have a strong tendency to avoid mathematics; they choose the courses or studies that are related to mathematics to a lesser extent (Hembree, 1990) and have lower levels of mathematical literacy (Ahmed, van der Werf, Kuyper, & Minnaert, 2013; Hembree, 1990; Ma, 1999). Students with higher levels of mathematics anxiety also have more negative attitudes toward mathematics (Martin et al., 2012) and negative beliefs about their own mathematical abilities (May, 2006). Research has mostly confirmed a negative correlation between mathematical anxiety and mathematical performance. In his meta-analytic study, Hembree (1990) reported an average correlation of r = –0.34 between mathematical anxiety and performance in mathematics. In a later meta-analysis, which included only research with samples of primary- and secondary school students, Ma (1999) found that the average student in the group with low mathematics anxiety had a higher score on the mathematics test than 71% of the students in the group with high mathematics anxiety. Two contrasting theoretical models explain the relationship between mathematics anxiety and performance in mathematics. An interference model explains the mathematical anxiety as a disturbance of the recall of prior mathematics' knowledge and experience (Wine, 1971). Anxious individuals divide their attention between their focus on a task and their focus on self-care, physical symptoms, and self-critical thoughts. Because attention is not entirely focused on activities related to the task, this causes poor performance in mathematics. In the deficits' model, Tobias (1985) regarded mathematics anxiety as a consequence of poor mathematics performance in the past and believed that poor performance causes high anxiety. Failure in mathematics happens mainly due to poor learning habits and unsuccessful test strategies and not mathematics anxiety.

Research findings show that mathematical anxiety is higher in girls than boys (Goetz, Bieg, Lüdtke, Pekrun, & Hall, 2013; Hembree, 1990; Hunt, 1985). This difference can be attributed to gender difference in beliefs about one's own learning abilities and performance in mathematics. Some studies have found that perceived self-efficacy in mathematics is lower in girls than boys (Goetz et al., 2013; Pajares and Miller, 1994). More negative self-beliefs in mathematics may be a result of a general opinion in society that mathematics is not a typical domain in which girls can achieve the same level or even get better results than boys. International studies in mathematical literacy (PISA, TIMSS) have shown slightly better mathematical literacy among boys than girls in many countries, but this difference was not confirmed in Slovenian samples of eighth grade students and 15-year-olds (Japelj Pavešić, Svetlik, & Kozina, 2012; Štraus, Šterman Ivančič, & Štigl, 2013). There is also evidence that, at least in the last three years of elementary school, Slovenian girls had higher average grades in mathematics than boys (Flere et al., 2009; Peklaj, Kalin, Pečjak, Valenčič Zuljan, & Puklek Levpušček, 2012; Puklek Levpušček & Zupančič, 2009).

Anxiety interferes with the working memory capacities because anxious individuals focus their attention on intrusive thoughts and concerns and less on the task in hand.

Task-irrelevant thoughts and worries therefore "exploit" a certain part of the attention that an individual needs to effectively tackle the task (Eysenck & Calvo, 1992). In the case of mathematics anxiety, these thoughts are concentrated on preoccupations with one's own negative attitudes towards mathematics, low self-confidence, time constraints while solving tasks etc. Performance in mathematics largely depends on the level of required participation of ongoing working memory processes in solving tasks. The effect of mathematics anxiety is important when tasks require a high level of working memory involvement.

The Programme for International Student Assessment (PISA) is a worldwide study by the Organisation for Economic Co-operation and Development (OECD). It measures 15-year-old students' scholastic performance in mathematics, science, and reading. PISA 2012 had a particular focus on mathematics. The students also filled in a questionnaire that, among others, measured the students' engagement with and at school, their drive and motivation to succeed, and the beliefs they held about themselves as mathematics learners: the extent to which students believed in their own ability to solve specific mathematical tasks, students' beliefs in their own mathematics abilities, and feelings of helplessness and stress when dealing with mathematics. Student responses about their feelings of stress associated with anticipating mathematical tasks, anticipating their mathematics performance, and while attempting to solve mathematics' problems were used to identify the students' specific level of anxiety towards mathematics and to construct an index of mathematics' anxiety (OECD, 2013). The results showed that anxiety in mathematics was fairly strongly present in adolescents around the world, while in Slovenia it was even more expressed. Girls showed a higher mathematics' anxiety than boys in all OECD countries except Turkey (standardized mean difference value was –0.39). In the Slovenian context, this difference is lower (–0.17), but still worrisome. In mathematical literacy, Slovenian girls did not differ from boys. Still, 70% of the Slovenian 15-year-old girls worry that they will receive a bad grade in mathematics. Also, Slovenian girls are less motivated to learn mathematics, they have more negative beliefs about their own abilities in mathematics, and showed less desire to deal with mathematics in their future than boys (Štraus et al., 2013).

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Klavdija Jug, dr. Majda Krajnc

Vnos IKT in e-preverjanja znanja pri predmetu kemija

Znanstveni članek

UDK 37.091.26:54:004

KLJUČNE BESEDE: IKT, e-učenje, e-učno okolje, e-preverjanje znanja, Moodle, kemija

POVZETEK – IKT omogoča netradicionalni, elektronski način dela in tako vnaša v učne vsebine inovativnost in pestrost ter bogati poučevanje in motivira učenje. Kadar vnašamo v učni proces novitete, je pomembno, da jih vnašamo počasi, saj novosti povzročajo dodatno delo in stres tako učitelju kot učencu. V prispevku bo prikazana raziskava in rezultati uporabe e-orodij, ki omogočajo e-učenje. V ta namen sta bila uporabljena e-učno okolje Moodle in dejavnost kviz, ki omogoča elektronsko preverjanje znanja. Raziskava je potekala na Osnovni šoli Šmarje pri Jelšah pri predmetu kemija. Poudarek je bil na pripravi e-nalog različnih tipov, ki zadostijo vsem ravnem znanja. Priprava nalog je v prvem letu zahtevala veliko učiteljevega truda, dela in časa, a vse to se obrestuje pri nadaljnjem delu. V raziskavo sta bila vključena dva deveta razreda. E-preverjanje znanja je potekalo trikrat, to je po vsakem učnem sklopu. Svoje mnenje o novem načinu preverjanja znanja so učenci podali v vprašalniku na koncu šolskega leta. Rezultati kažejo, da tak način preverjanja znanja učenci sprejemajo, kljub temu pa pogrešajo nekatere aktivnosti, ki so jih navajeni pri tradicionalnem preverjanju.

Scientific paper

UDC 37.091.26:54:004

KEYWORDS: ICT, e-learning, e-learning environment, e-assessment of knowledge, Moodle, chemistry

ABSTRACT – ICT is intended for incorporation within the traditional work programmes because it introduces innovations into the teaching content such as innovative methods that enrich the teaching, and motivate learning. This paper presents the results of research into using e-tools. The Moodle e-learning environment and an activity quiz that allows for the electronic assessment of knowledge were used for this purpose. This research was held at the Šmarje pri Jelšah Primary School regarding the subject of chemistry. The focus was on preparing different types of electronic tasks that would meet all levels of knowledge. During the first year the preparation of e-tasks required a lot of effort, work, and time, which were remunerated in their future work. Two ninth grade classes were included in the research. The e-assessment of knowledge was held three times i.e. after each learning stage. The pupils gave their opinions about e-learning by means of a questionnaire at the end of the school year. The results showed that they accepted such a mode of working. However, they did miss some activities they were accustomed to at the traditional examinations.

1. Uvod

Tehnološki izumi dvajsetega stoletja so vnesli v naša življenja korenite spremembe, nekateri so posegli celo v naše družabno življenje. Pri tem so mišljene razne oblike informacijsko-komunikacijske tehnologije (IKT), ki so dosegle izredni razvoj in razmah v zadnjih desetih letih. Dejstvo je, da IKT posega tudi v izobraževalni proces, v katerega vnaša inovativnost in možnost širjenja znanja učenca in učitelja. IKT omogoča vseživljenjsko učenje in nas hkrati postavlja pred odgovorno nalogo, kako

uporabiti ponujeno koristno, saj smo uporabniki vse generacije od najbolj občutljive, to je otrok v osnovnih šolah, kjer se šele razvija njihova osebnost, sposobnosti in veščine pomembne za življenje, do upokojencev.

IKT je elektronski medij, ki predstavlja za človeštvo izziv, kot ga je pred stoletji papir, ko je postal nov medij za prenos znanja, učenje, komunikacijo ipd. Izzive je treba sprejeti, saj se tako naučimo nekaj novega in pri tem smo ustvarjalni. IKT omogoča e-učenje, v katerega so lahko vpeti učenci, starši in učitelji. Zato je izrednega pomena pravilna informiranost in izobraževanje o njeni uporabi in izvajanju e-učenja.

V svetu potekajo številne razprave in projekti o uporabi IKT v učnem procesu ter elektronskega načina učenja (e-učenje), ki nam ga omogoča tehnologija. V letih 2008 in 2009 je potekala raziskava STEPS, financirana s strani Evropske komisije, v katero je bilo vpetih 27 držav EU ter Liechtenstein, Islandija in Norveška. Osnovna naloga je bila ugotoviti vpliv IKT na delo v osnovnih šolah (STEPS, 2009). Ugotovili so, da je prioritetna naloga zagotoviti kakovostno IKT, ki bo omogočila učiteljem podporo pri e-poučevanju in doseganju izobraževalnih ciljev. Pri tem je ključnega pomena finančna podpora ministrstev za šolstvo. V mnogih državah seznanjajo v osnovnih šolah starše o e-učenju preko spletnih strani. Zgledni primer je osnovna šola McKinney iz Dundroda v Veliki Britaniji (McKinney Primary School, 2012). V nekaterih šolah vključujejo e-učenje v vsebine predmetnikov (Primary School Curriculum, 1999). V Hong Kongu sta v raziskavi o vnosu in uporabi IKT v osnovnih šolah bili vpeti dve starostno različni skupini učiteljev in ravnateljev (Lee, 2006). Ugotovili so, da je pri vnosu IKT v učni proces treba neprestano izobraževanje, podpora ravnateljev, veliko časa in navdušenja. Kot ovire so navedli neprimerno opremljenost učilnic, neizobraženost učiteljev ter neprimerno strojno in programsko opremo. Podobna raziskava je potekala v zadnjih letih tudi na Hrvaškem (Blažič, Rončević, 2009). V Romuniji že prikazujejo prve rezultate organiziranega poučevanja učiteljev osnovnih in srednjih šol o vnosu in uporabi IKT v poučevanje (Gorghiu in drugi, 2012). Ugotovili so, da IKT omogoča boljše razumevanje predmetnih vsebin, povečanje motivacije za učenje ter boljšo povezanost med teorijo in prakso, kar pomeni, da je privlačna za učence.

O stanju in trendih uporabe IKT v slovenskih osnovnih šolah je pisal Gerlič (2011). V obdobju 2008–2013 je v Sloveniji potekal projekt E-šolstvo, ki ga je razpisalo in finančno podprlo Ministrstvo za izobraževanje, znanost in šport. V projektu sta bila združena dva projekta: e-kompetentni učitelj in e-podpora. V sklopu obeh projektov so potekala organizirana izobraževanja ravnateljev, učiteljev in računalnikarjev osnovnih in srednjih šol (Bilten: Utrip projekta e-šolstvo, 2013).

Dosedanje raziskave in izkušnje kažejo, da je treba IKT in e-učenje vnašati v učni proces počasi in s sistematičnim delom (Krajnc, 2009). Namreč zgodi se lahko, da krenemo po napačni poti in naredimo več škode kot koristi, na to opozarja tudi M. Etherington (Etherington, 2008). Poudarja, da e-učenju in IKT pripisujemo prevelik pomen, saj glede na končni učni cilj, to je, da mora učenec usvojiti določena znanja, ni razlike med tradicionalnim in e-učenjem. Tehnologija naj bo samo orodje, ki ga uporabljamo za dosego istega cilja (Etherington, 2008).

E-učenje v učnem procesu uspešno poteka preko e-učnih okolij (virtualnih učnih okolij, spletnih učilnic). Danes so na voljo e-učna okolja kot na primer Blackboard, Webassign, WebCT ipd. Najbolj znano e-učno okolje Moodle je dosegljivo brezplačno vsem uporabnikom po svetu. Preko e-učnih okolij poteka izmenjava podatkov in informacij med učencem in učiteljem, ponujenih jim je veliko dejavnosti, ki lahko nadomestijo ali obogatijo klasične. Ena takih je na primer elektronski način preverjanja znanja, ki omogoča učiteljem sprotno (formativno) preverjanje znanja po predelanem sklopu snovi oziroma končno (sumativno) preverjanje znanja celotne učne snovi (Sewell in drugi, 2010). Povratne informacije o usvojenem znanju so hitre, dopolnjujejo jih lahko razlage (odzivi) o učni snovi.

V Sloveniji se je e-preverjanje znanja pričelo pred desetletjem pojavljati v visokošolskih ustanovah (Krajnc, 2008), v srednjih šolah pa v zadnjih letih (Krajnc in drugi, 2012; Kralj, 2012), predvsem pri družboslovnih predmetih. Odprte so možnosti e-preverjanja znanja pri naravoslovnih predmetih, katerih zahtevnost vsebin včasih ni primerna za tak način dela, a so ponekod že vidni rezultati (Krajnc, 2012; Jug in drugi, 2013).

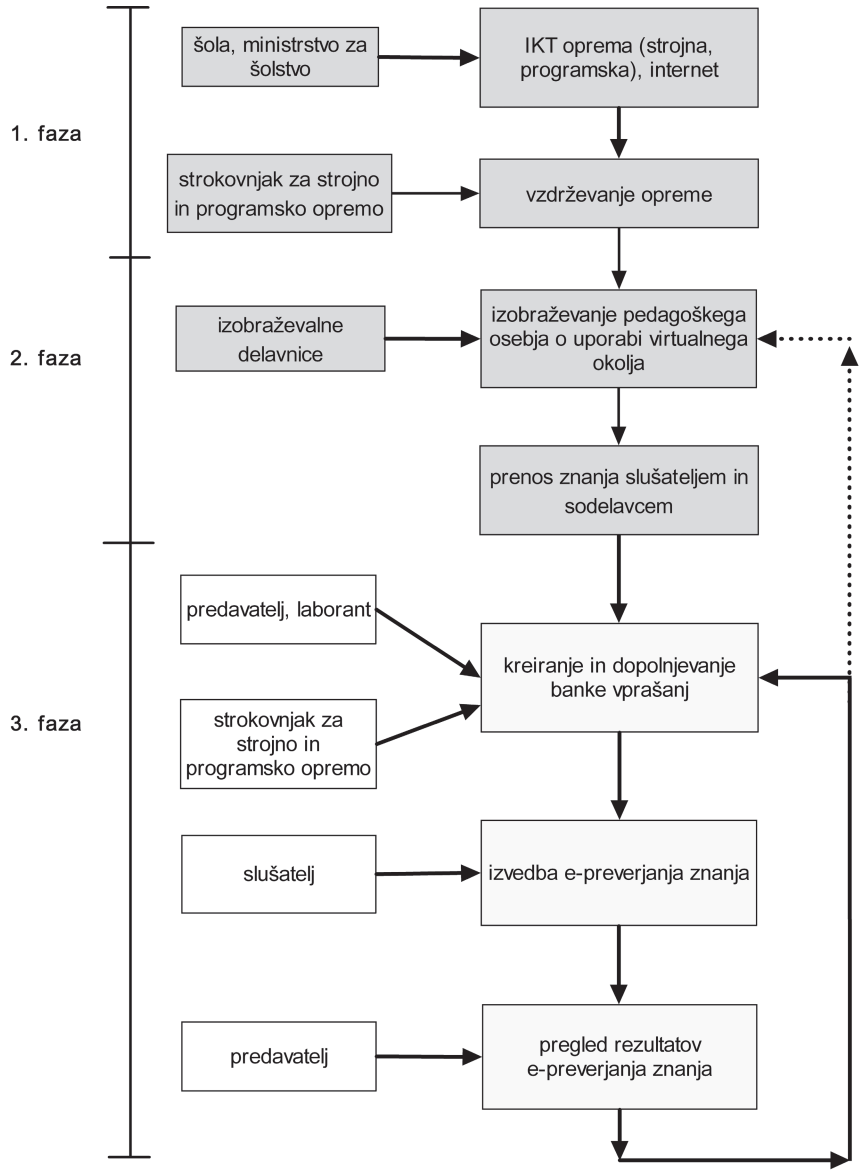
Mlade generacije sprejemajo nova orodja in jih želijo uporabljati, zato bo treba veliko dela, truda in časa pri uvajanju le-teh. Pri tem je mišljeno sodelovanje učiteljev, izmenjava izkušenj ter nenehno izobraževanje na področjih e-orodij in e-učenja.

V prispevku je predstavljen vnos IKT, e-učnega okolja in e-učenja v Osnovni šoli Šmarje pri Jelšah pri predmetu kemija kot alternative tradicionalnemu načinu dela. Prikazana je sistematična pot dela in začetne ovire, na katere velikokrat pozabljamo, a se pojavijo pri uporabi novih tehnologij. Poseben poudarek je na pripravah in izvedbi e-preverjanja znanja, to je pripravi e-nalog in izvedbi e-testov. Na koncu so prikazani rezultati dela ter odzivi učencev, ki so nastali na osnovi vprašalnika, ki so ga učenci izpolnili ob koncu šolskega leta. Glede na rezultate raziskave in pridobljene izkušnje so v zaključku podani predlogi za prihodnost.

2. Sistematični pristop k e-izobraževanju

Raziskave in izkušnje kažejo, da je pri e-učenju potrebno sistematično delo, ki je porazdeljeno na skupino ljudi in ne na posameznika. Slika 1 prikazuje grafično sistematični pristop uporabe IKT, e-učnih okolij in e-dejavnosti v učnem procesu. V *prvi fazi* je poudarjena nabava računalniške opreme ter njeno vzdrževanje, kjer igra ključno vlogo vodstvo šole, ki mora imeti razumevanje za nabavo novih orodij in način dela, ter ministrstvo za šolstvo, ki finančno podpre prizadevanja. Treba je zaposliti strokovnjaka/računalnikarja, ki nabavljeno opremo (strojno in programsko) vzdržuje. Računalnikar je del skupine, ki izvaja e-izobraževanje.

Slika 1: Sistematičen pristop uporabe IKT in e-učenja



V *drugi fazi* je pomembno spoznavanje programske opreme (e-učnih okolij, multimedijskih, interaktivnih e-gradiv …), ki jo učitelj uporablja v učne namene. V tej fazi je pomembno neprestano izobraževanje učiteljev, laborantov in računalnikarjev. Skupina se poveča in mora delovati homogeno, če želi doseči dobre rezultate dela.

Učitelj kot neposredni izvajalec e-učenja mora pridobljena znanja ustrezno prenašati na učence in sodelavce.

V *tretji fazi* e-učenje postane poglobljeno, saj učitelj prične uporabljati posamezne dejavnosti, ki jih učno okolje ponuja. Tu sta pomembna dva dejavnika: a) dobro poznavanje in razumevanje e-orodja ter b) strokovno znanje določenega področja. Ta faza zahteva neprestano kritično razmišljanje in presojo, ki omogočata kakovostno izvedbo e-učenja. Sodelovanje članov skupine (računalnikar, laborant, učitelj) je posebej pomembno, ko pričnemo uporabljati novo dejavnost v e-učnem okolju.

Vse naštete faze so med seboj povezane. Če jih izvajamo v pravilnem vrstnem redu, je delo lažje in bolj učinkovito.

3. Uvajanje e-učenja pri predmetu kemija

V šolskem letu 2011/2012 je bila na osnovni šoli v Šmarju pri Jelšah omogočena uporaba elektronskega učnega okolja Moodle. Uporabo je podprlo Ministrstvo za šolstvo, znanost in šport Republike Slovenije. Ker ima računalniško učilnico z internetno povezavo, je bilo učno okolje tako na voljo vsem zaposlenim. Za vzdrževanje računalniške opreme je odgovoren računalnikar, ki nas je seznanil z osnovami uporabe e-učnega okolja. Ker smo imeli izpolnjene osnovne pogoje (*1. in 2. fazo*) za izvedbo e-učenja, smo pričeli razmišljati o vnosu IKT v učni proces, saj elektronski medij vnaša dinamičnost in možnost usvajanja novih znanj.

V prvem letu smo e-učno okolje uporabljali zgolj za posredovanje informacij, e-učnih gradiv in spletnih povezav, ki so bile koristne pri učenju. V e-učno okolje so se vključevali le nekateri učenci, v glavnem tisti, ki so želeli dodatno gradivo za učenje, utrjevanje in širjenje znanja. V naslednjem šolskem letu pa smo pri predmetu kemija pričeli uporabljati dejavnost kviz (*3. faza*), ki je na voljo v e-učnem okolju in je primeren za preverjanje učenčevega znanja. Do tega časa je preverjanje znanja potekalo le klasično, to je z ustnim izpraševanjem ali pisnim preverjanjem pred vsakim pisnim preizkusom.

E-preverjanje znanja pri predmetu kemija

Za kakovostno e-preverjanje znanja je treba kreirati banko nalog različnih težavnosti. Strokovnjaki, ki imajo izkušnje z e-preverjanjem znanja, poudarjajo, da mora banko vprašanj kreirati skupina ljudi: predavatelj/učitelj, asistent/laborant ter strokovnjaka za strojno in programsko opremo (Hartog in ostali, 2008), kar omogoča kakovostno in učinkovito delo. Na osnovi banke nalog predavatelj sestavi e-teste za preverjanje znanja, ki jih izvaja slušatelj, predavatelj pa pregleda in oceni rezultate. V preverjanje znanja je treba vključiti nekaj lažjih in težjih nalog ter določiti za to potreben čas reševanja. Praktično pravilo pravi, da mora imeti učenec na razpolago vsaj trikrat več časa za reševanje kot učitelj (Marentič in drugi, 2002).

Naloge, ki jih sestavimo za e-preverjanje v e-učnem okolju, so lahko različnih tipov, in sicer: esejske (subjektivnega tipa) in odprtega ter zaprtega (objektivnega) tipa. Naloge odprtega tipa so po navadi kratke in jasno postavljene. V to skupino štejemo naloge s kratkimi odgovori in dopolnjevanjem. K nalogam zaprtega tipa štejemo naloge izbirnega tipa in ujemanja odgovorov.

Z nalogami odprtega tipa preverjamo poznavanje dejstev, pojmov, pravil, zakonitosti in delno razumevanje vsebine (torej nižjo raven znanja), z nalogami zaprtega tipa ugotavljamo znanje, razumevanje in uporabo (nižjo in srednjo raven znanja), medtem ko z esejskimi nalogami posežemo na višjo raven znanja (analiza, sinteza, vrednotenje) (Marentič in drugi, 2002).

V e-preverjanje znanja na Osnovni šoli Šmarje pri Jelšah sta pri predmetu kemija bila vključena dva oddelka devetega razreda od štirih, to je 9. A in 9. D razred. Oba razreda sta bila po znanju kemije povprečna in enakovredna, 9. B je bil boljši od ostalih, medtem ko je bil 9. C po znanju kemije malo slabši. V teh dveh razredih smo znanje preverjali tradicionalno, to je s pisnim preverjanjem znanja.

Zaradi velikega števila učencev je potekalo e-preverjanje v dveh računalniških učilnicah hkrati pod nadzorom laborantke in učiteljice in je trajalo skoraj vso šolsko uro, saj je bilo treba premostiti tehnične probleme, ki se pojavijo pri takem delu. Veliko učencev je na primer pozabilo uporabniško ime in geslo, nekaj jih je bilo nespretnih pri uporabi e-testa, čeprav so imeli pred tem na voljo vzorčni primer e-testa, ki so ga lahko izvajali od doma.

V celotnem šolskem letu smo izvedli tri e-preverjanja znanja iz različnih vsebin. Vsak e-test je trajal 20 minut, po zaključku in oddaji so učenci lahko pregledali rezultate, oceno, ki so jo dosegli, ter odzive pri nalogah, na osnovi katerih so utrjevali svoje znanje. E-preverjanje znanja je potekalo pred vsakim pisnim preizkusom znanja. S takim načinom smo učencem ne samo približali vsebino in možnost preverjanja usvojenega znanja, temveč je učitelj dobil širši vpogled v obravnavano učno vsebino in njeno razumevanje pri učencih. Tako je pred pisnim preizkusom bilo mogoče še utrjevati snov, ki ni bila dovolj usvojena.

Uvajanje e-preverjanja znanja je zahtevalo v prvem letu veliko časa in truda. Za pripravo enega e-testa smo porabili tudi do sedem ur. Prav zaradi tega učitelji velikokrat prenehajo s takim načinom dela, saj jim poleg drugih obveznosti predstavlja preveliko breme. Vendar se trud obrestuje v naslednjih letih, ko banko z nalogami še samo dopolnjujemo in izgrajujemo.

V šolskem letu 2012/2013 smo pri predmetu kemija v e-banko nalog vnesli 101 nalogo različnih tipov (7 esejskih, 15 izbirnih z enim pravilnim odgovorom, 8 izbirnih z več pravilnimi odgovori, 6 tipa pravilno/narobe, 44 tipa kratek odgovor, 8 tipa dopolnjevanje, 8 tipa ujemanje, 4 naključno ujemanje kratkih odgovorov in 1 številčna naloga), ki so zajemala vsebine o ogljikovodikih, kislinah, bazah, soleh ter organskih kisikovih spojinah, ki so v učnem načrtu v devetem letu osnovne šole. Veliko vprašanj je vsebovalo slike in grafe, pri vsakem so bili dodani odzivi pri odgovorih (Jug in drugi, 2013).

Tabela 1: Izvajanje e-preverjanja znanja v dveh oddelkih devetega razreda

Razred	*Št. učencev*	*Št. vprašanj*	*Število in tipi vprašanj*	*Povprečna ocena e-testa*
1. e-test: OGLJIKOVODIKI				
9. A	24	16	1 esejsko 5 izbirni z enim pravilnim odgovorom 2 izbirni z več pravilnimi odgovori 2 ujemanje 1 pravilno/nepravilno 3 kratek odgovor 2 dopolnjevanje	3,7
9. D	20	12	1 esejsko 4 izbirni z enim pravilnim odgovorom 1 izbirni z več pravilnimi odgovori 2 pravilno/nepravilno 1 ujemanje 2 kratek odgovor 1 dopolnjevanje	4,0
2. e-test: KISLINE, BAZE IN SOLI				
9. A	21	12	1 esejsko 1 številčno 3 izbirni z enim pravilnim odgovorom 1 izbirni z več pravilnimi odgovori 1 pravilno/nepravilno 3 ujemanje 2 dopolnjevanje	3,2
9. D	19	12	1 esejsko 1 številčno 3 izbirni z enim pravilnim odgovorom 1 izbirni z več pravilnimi odgovori 1 pravilno/nepravilno 3 ujemanje 2 dopolnjevanje	3,5
3. e-test: ORGANSKE KISIKOVE SPOJINE				
9. A	25	12	1 esejsko 1 kratek odgovor 2 izbirni z enim pravilnim odgovorom 3 izbirni z več pravilnimi odgovori 1 pravilno/nepravilno 3 ujemanje 1 dopolnjevanje	2,9
9. D	20	9	2 esejsko 2 izbirni z enim pravilnim odgovorom 2 ujemanje 2 kratek odgovor 1 dopolnjevanje	2,5

Po oddaji e-testa je učenec takoj dobil povratno informacijo o oddanem izdelku: oceno, vpogled v celotni e-test z označenimi odgovori ter odzive na izbrane odgovore. Učitelj je dobil vpogled v posameznikov izdelek, v rezultat oziroma doseženo oceno celotnega razreda ter analizo rezultatov posameznih vprašanj. Po izvedbi e-testov smo vedno pogledali, katere naloge so bile najslabše rešene in katere cilje so te naloge vsebovale. Te smo pred pisnim preizkusom znanja še dodatno utrjevali.

Tabela 1 prikazuje število učencev, ki so pristopili k vsakemu e-preverjanju znanja v izbranih razredih ter število in tipe nalog. Razvidno je, da je k vsakemu e-preverjanju pristopilo različno število učencev. Vzrok je bil v izostanku učencev zaradi bolezni ali drugih opravičenih razlogov. Ker je e-preverjanje znanja potekalo v različnih časovnih terminih, so učenci paralelnih razredov reševali različne e-teste. S tem smo se izognili morebitnemu goljufanju. V e-testu so bile zajete naloge za preverjanje vseh ravneh znanja. Iz tabele je razvidno, da se je število nalog v paralelkah razlikovalo pri prvem in tretjem e-testu. Vzrok je bil v omejenem številu nalog v obstoječi banki, zato je bilo težko številčno izbrati kombinacije nalog enakih težavnosti.

Zadnji stolpec tabele 1 prikazuje povprečno oceno e-testov v 9. A in 9. D razredu, tabela 2 pa načine preverjanja znanja v vseh devetih razredih ter povprečno oceno pisnega preizkusa znanja. Iz podatkov lahko ugotovimo, da je:

- najboljši rezultat dosežen pri prvem e-testu,
- najslabši rezultat dosežen pri tretjem e-testu,
- pri vsakem naslednjem e-testu dosežena slabša ocena,
- bil prvi e-test lažji od drugih, saj je povprečna ocena le pri tem e-testu višja od pisnega preizkusa, ki je sledil,
- kakovost znanja med razredi ostala enaka (vrstni red od najboljšega do najslabšega uspeha: 9. B, 9. A, 9. D in 9. C).

Upad ocene pri vsakem naslednjem e-preverjanju (od 3,7 do 2,9 v 9. A in od 4 do 2,5 v 9. D) bi lahko pripisali:

- težji učni vsebini,
- nezadostnemu učenju in
- težavnosti vprašanj.

Tabela 2: Prikaz načinov preverjanja znanja ter povprečne ocene pisnega preizkusa znanja pri predmetu kemija v devetih razredih

Razred	*Prvo preverjanje*	*Prvi pisni preizkus*	*Drugo preverjanje*	*Drugi pisni preizkus*	*Tretje preverjanje*	*Tretji pisni preizkus*
9. A	elektronsko	3,3	elektronsko	3,6	elektronsko	3,1
9. B	pisno	3,9	pisno	3,6	pisno	3,3
9. C	pisno	3,2	pisno	3,4	pisno	2,9
9. D	elektronsko	3,2	elektronsko	3,6	elektronsko	3,0

4. Odziv učencev na e-učenje in e-preverjanje znanja

Eden od razlogov vnosa e-učenja oziroma e-preverjanja znanja v 9. razredu osnovne šole pri predmetu kemija je bil ugotoviti, kako bodo učenci sprejeli nove pripomočke pri učenju. Učencem, ki so sodelovali pri e-preverjanju znanja, smo na koncu šolskega leta sestavili vprašalnik, v katerem so lahko izrazili svoja mnenja o novem načinu učenja. Sodelovalo je 44 učencev, 20 fantov in 24 deklet.

Iz rezultatov anketnega vprašalnika lahko ugotovimo, da:

- si polovica učencev (48%) tudi v prihodnje želi preverjanja znanja preko e-učnega okolja, več kot tretjina pa le občasno; šest učencev (14%) si takega načina preverjanja znanja ne želi;
- 48 odstotkov učencem najbolj ustreza preverjanje znanja z računalniškimi orodji, 20 odstotkov si jih želi pisno preverjanje ter ena tretjina ustno preverjanje znanja,
- je 46 odstotkov učencev mnenja, da imajo pri preverjanju znanja najmanj treme pri e-preverjanju, 36 odstotkov pri pisnem preverjanju in 18 odstotkov pri ustnem preverjanju znanja,
- pri e-preverjanju znanja učencem najbolj ustrezajo vprašanja izbirnega tipa ter najmanj esejski tipi vprašanj,
- je pri primerjavi ocene pri predmetu kemija v tem in prejšnjem šolskem letu več kot polovica učencev dosegla približno enake ocene, 32 odstotkov učencev ugotavlja izboljšanje ocene in 14 odstotkov poslabšanje ocene.

Iz rezultatov lahko razberemo, da dekletom (10 učenk) in fantom (11 učencev) ustreza e-preverjanje znanja, razloge za to trditev so podali v tretjem vprašanju vprašalnika.

Eden pravi: "Nekatere je strah pred vsemi učenci. Lahko se bolj zbereš, imaš več časa za razmišljanje, če katerega odgovora ne znaš, lahko greš dalje in se kasneje vrneš na isto vprašanje."

Nekdo drug ugotavlja: "Ni me tako strah kot pred tablo."

Odgovor nekega učenca je: "Je bolj zanimivo."

Naslednji pravi: "Je bolj pregledno."

Kljub temu pa si tretjina učencev (4 fantje in 5 deklet) želi pisno preverjanja znanja. Pravijo, da si na list lahko zapišejo kakšno formulo, račun, kaj zbrišejo. Nekatere učence naloge na računalniku zmedejo in se jim zdijo zapletene.

Učenci, ki se bolj nagibajo k ustnemu izpraševanju, so povedali, da jim učitelj da namig, če se jim zaplete, in jim je lažje odgovarjati. Prav tako navajajo, da pri ustnem preverjanju ni časovne omejitve, kar ustreza bolj "počasnim" učencem.

Pri četrtem vprašanju so učenci pisali, kaj so pogrešali pri e-preverjanju znanja. Veliko jih je napisalo, da so imeli premalo časa in so pogrešali lažja vprašanja. Eden izmed njih je zapisal, da pogreša e-preverjanje znanja tudi pri drugih predmetih.

5. Sklep

IKT nas danes obkroža povsod in posega tudi v učni proces. E-orodja, ki omogočajo netradicionalni način poučevanja in učenja, vnašajo inovativnost in obogatijo vsebine, ki jih učitelj podaja učencu, s tem pa mu omogoča boljše razumevanje. Ena glavnih aktivnosti v učnem procesu je preverjanje učenčevega znanja, ki lahko poteka tradicionalno (pisno, ustno) ali netradicionalno (elektronsko). E-preverjanje znanja lahko poteka kadarkoli in koderkoli ter tako omogoča svobodo pri učenju, medtem ko tradicionalno preverjanje poteka izključno v učilnici ob določenih terminih. Kadar se odločimo za elektronski način preverjanja znanja, je potrebno sistematično delo, saj so pri tem potrebne nove veščine in znanja, ki predstavljajo učitelju dodatno obremenitev. Pri kreiranju e-nalog je pomembno, da dobro obvlada učno vsebino ter ga uporaba e-orodij veseli, saj bo lahko le v tem primeru pripravil kakovostne e-teste. Pri e-preverjanju znanja dobita tako učenec kot učitelj takojšnjo povratno informacijo o usvojenem znanju, kar dodatno pripomorejo odzivi pri vseh odgovorih. Raziskava, ki je potekala na Osnovni šoli Šmarje pri Jelšah pri predmetu kemija, je pokazala, da e-preverjanje znanja ni bistveno vplivalo na kakovost znanja, saj so učenci pri pisnem preizkusu znanja ne glede na vrsto preverjanja znanja (ustno, pisno, elektronsko) obdržali enako raven znanja, kot je pokazala učiteljeva ocena na začetku šolskega leta. Polovica učencev, ki je sodelovala v raziskavi, odobrava elektronski način preverjanja znanja, pri čemer navajajo boljšo zbranost pri izbiri odgovorov, preglednost vprašanj ter manj psihičnega napora.

V prihodnjem šolskem letu načrtujemo povečanje števila nalog v e-banki in vnos e-preverjanja znanja v vse paralelke devetega razreda pri predmetu kemija. Pri delu bomo uporabili še e-učno dejavnost domača naloga, s katero bodo lahko učenci sprotno preverjali svoje znanje. Ker je raziskava šele začetnega značaja, bo potrebnega še veliko napora in izkušenj, preden bo nov način dela sprejet tako, da bosta zadovoljna učitelj in učenec.

Klavdija Jug, Majda Krajnc, Ph.D.

Introduction of ICT and e-assessment of knowledge regarding chemistry

The technological inventions of the twentieth century have entered into our everyday lives introducing radical changes, informative communication technology, ICT, even into our social lives. Within the educational process it enables innovations and possibilities for extending students' and teachers knowledge. It provides lifelong learning whilst at the same time challenging us with the responsibilities of utilising what it has to offer. ICT is an electronic medium that presents a challenge for the human race, as did paper centuries ago, when it became the new medium for the transfer of knowl-

edge, learning, and communication. It enables e-learning and is therefore of the utmost importance to come to terms with the advantages and disadvantages of using it.

Research and experience have shown that during e-learning it is necessary to work systematically when it is being used amongst a group of people rather than an individual. It should include three stages. During the first stage purchasing the computer equipment is highlighted, together with its maintenance. It is for this reason that it is necessary to hire a computer expert who will maintain the e-tools. The computer expert is part of the group who carry out e-learning during the second stage when it is crucial to learn about the e-tools so that the teacher can use them for learning purposes. This is constantly important during the period of education as the e-learning group expands to include the teacher, assistant, and computer expert, who must work homogenously. In such a case, good results will be reached in the future. During the third stage the e-learning becomes in-depth. The teacher starts to use different activities within the e-learning environments. In addition to having a good knowledge about e-tools, it is very important to become experts in specific professional areas. The cooperation of the group members is particularly important when new activities start to appear. All the stages are interconnected and if used in the correct sequence, the work is easier and more effective.

At the Šmarje pri Jelšah Primary School during the school year 2011/2012 an electronic learning environment was established thus enabling the usage of Moodle. The school had a computer room with the necessary internet connection so that an e-learning environment was already accessible to all the teaching staff. The computer expert at this stage concentrated on maintaining the tools and explaining their usages. During that first year, Moodle was used purely for the transmission of information, e-learning materials, and web links. The e-learning environment was only being used by certain students, mainly those who wanted additional material for learning, consolidation, and the dissemination of knowledge. In the second year, in regard to chemistry, usage of the activity quiz commenced as suitable for checking learners' knowledge. Until that point, the assessment of knowledge had been done traditionally, i.e. by oral questioning or written examination before each written test.

Two ninth year classes were included within the e-assessment of knowledge i.e. the 9 A and 9 D classes. Due to the larger number of pupils, it was held in two computer classrooms simultaneously under the supervision of the teacher and an assistant. It took almost the whole lesson because it was necessary to overcome some technical problems. For example, several pupils had forgotten their usernames and passwords. Some of them were incompetent at using the e-test, even though they had had a previously available sample e-test that they could have run at home.

Throughout the school year three e-assessments of knowledge were carried-out, each lasting 20 minutes. After finishing, the pupils could immediately review the results and respond to the tasks, on the basis of which they consolidated their knowledge. By using such a method, the subject content was quickly supplied to the pupils, the teacher obtained a broader insight into the teaching content and its understanding by the pupils, and it was possible to consolidate any subject content that was unclear before the written testing.

The introduction of e-assessment regarding knowledge required a lot of time and effort during the first year. In order to prepare one e-test, we spent up to 7 hours. That's why teachers often stopped using this method of working because, in addition to other obligations, it represents too much of a burden. However, this initial effort pays off over the next few years when e-bank tasks only just need to be updated and completed with newer ones. During the school year 2012/2013, 101 e-tasks of different types, which covered all levels of knowledge, were entered into the e-bank and consisted of contents regarding hydrocarbons, acids, bases, salts, and organic oxygen compounds.

The results from the research showed that the best results were achieved in the first e-test and the worst in the third one, and for each subsequent e-test more inferior marks were obtained. It was also obvious that the first e-test was easier than the others because the average mark was higher than the written test that followed. The declining ratings at each subsequent e-assessment could be attributed to the harder lesson contents, insufficient learning, and the difficulties of the questions.

At the end of the school year, the pupils filled-in questionnaires in which they expressed their opinions on this new mode of learning. The questionnaire was made-up of 7 questions of which there were two essay types and residual multiple-choice types. It was discovered from the results of the questionnaires that half of the pupils were comfortable with the assessment of knowledge using e-tools and also wanted such modes of work in the future, more than one third only occasionally, and the rest did not want to use such a mode of work. Others preferred written and oral examinations. Almost half of the pupils believed that they were under less stress during e-assessments of knowledge, 36% during written examinations, and 18% during oral examinations. For e-assessment of knowledge the pupils preferred multiple-choice questions and did not like the essay-type questions. The pupils thought that when comparing their marks for chemistry between this and the previous school year, that they achieved roughly the same mark (54%), improved their mark (32%), and reduced their mark (14%).

The research showed that e-assessment did not affect the quality of knowledge significantly. In all four ninth year classes the same level of knowledge was maintained as for the written tests as the year before regardless of the type of examination (orally, in writing, electronically) before them. In the upcoming school year, we plan to increase the number of tasks within the e-bank and introduce e-assessment of knowledge for chemistry into all of the ninth year classes. Additionally, we will start to use e-learning activity homework for continuously assessing knowledge. Bearing in mind that this research is only in its infancy, it will take a lot of effort and experience before this new mode of learning takes place under circumstances where teachers and pupils are completely satisfied.

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Opravičevanje šest do deset let starih otrok pri predmetu šport

Znanstveni članek

UDK 373.3-052:796:37.091.52

KLJUČNE BESEDE: opravičevanje, športna vzgoja, starši, prvo in drugo vzgojno-izobraževalno obdobje

POVZETEK – Cilj raziskave je bil analizirati opravičevanje učencev in učenk pri športni vzgoji. Z vprašalnikom, ki so ga zaradi mladosti otrok izpolnili starši, smo ugotavljali delež otrok z zdravniškim opravičilom, razloge za zdravniško opravičilo, vrsto (delno, popolno) in trajanje (krajše, daljše obdobje) zdravniškega opravičila ter razloge za opravičevanje otrok. Prav tako smo želeli ugotoviti, ali starši sami napišejo otroku opravičilo za športno vzgojo, kako pogosto to storijo in kakšne razloge navedejo kot opravičilo. Vzorec je vključeval 685 staršev učencev 13 šol z območja celotne Slovenije, ki so obiskovali prvih pet razredov osnovne šole. Rezultati kažejo na to, da je zdravniško opravičenih učencev malo. Prevladujejo opravičila do enega meseca, največ pa jih je izdanih zaradi poškodb otrok. Največ je delnih opravičil (otrok je opravičen samo dela športne vadbe). Starši otrokom prvega in drugega triletja načeloma ne pišejo opravičil za športno vzgojo. Če ga napišejo, je le to povezano z zdravstvenim stanjem otroka. Več opravičil starši napišejo deklicam kot dečkom.

Scientific paper

UDC 373.3-052:796:37.091.52

KEYWORDS: excusing, physical education, parents, first and second triennium

ABSTRACT – The aim of the research was to analyse pupils' excuses for not wanting to participate in physical education. Because of the age of the children the questionnaire was filled in by their parents. We tried to find out how many pupils had a medical excuse for not participating in physical education. We also wanted to find out the reasons for excusing physical education and also how much and in what way the pupils of the first and second triennium of primary school made excuses for physical education. We also tried to find out if parents wrote some excuses for their children, how often did they write some kind of excuse and what were the reasons for not participating in physical education. There were 685 parents that participated in the research (13 primary schools from Slovenia, pupils from the 1st to the 5th grade). The results showed that there were very few pupils who had a medical excuse for participating in physical education. Most of the excuses were up to one month and most of them were because of injuries to the pupils. A lot of excuses were just partial (the child was not allowed to participate in some contents of the physical education). Parents of the pupils generally did not write excuses for the pupils. But if they did, they were related to the health status of the child. More excuses were written for girls than for boys.

1. Uvod

Gibanje je otrokova naravna potreba, ki jo odrasli zaradi različnih razlogov hote ali nehote pogosto omejujemo. Vendar pa ima gibanje na otroka tako pozitivne vplive, da bi ga morali spodbujati in ne zavirati. Gibanje pozitivno vpliva na razvoj telesa (kosti, mišice), zadovoljstvo s telesnim videzom, samopodobo, samozavest,

samostojnost, boljšo kognitivno učinkovitost, boljšo pozornost, zdravje, socialne interakcije, razvoj socialnih veščin, emocionalni razvoj otroka, moralni razvoj otroka, zmanjša se tveganje za razvoj rizičnih oblik vedenja (kajenje, alkohol, droge), razvija se zdrav, aktiven življenjski slog (Haug, 2008; Planinšec in Fošnarič, 2006; Shephard, 1997; Sibley in Etnier, 2003; Brettschnider in Naul, 2004; Ewing, Gano-Overway, Branta in Seefeldt, 2002; Goran, Reynolds in Lindquist, 1999; Berčič, 2010).

Da bi dosegli pozitivne učinke, ki jih ima gibalna/športna aktivnost, bi moral biti otrok zmerno intenzivno aktiven vsaj 60 minut dnevno vse dni v tednu (Pate in sod., 2005; Saris in sod., 2003; WHO, 2010; Strong, Malina, Blimke, Daniels, Dishman in Gutin, 2005). Vendar pa rezultati raziskav kažejo, da so otroci aktivni neprimerno manj od priporočenega (Jeriček, Lavtar in Pokrajac, 2007; Škof, 2007; Stergar, 1998).

Družina je prvi socialni sistem, v katerem otrok živi. Zato ima zelo pomemben vpliv tudi na otrokovo gibalno/športno aktivnost. Nanj vpliva z možnostmi, ki mu jih ponuja (oprema, finančna podpora, prevozi …), s podporo in spodbujanjem (vključevanje v različne športne dejavnosti), najbolj in najpomembneje pa z lastnim zgledom in zdravim, aktivnim življenjskim slogom. Raziskave kažejo na pozitiven vpliv starševske podpore na ukvarjanje otrok s športom (Trost s sod., 2003; Welk, Wood in Morss, 2003). Podpora staršev je za gibalno/športno aktivnost otrok izrednega pomena, in sicer tako v smislu čustvene podpore, podpore v smislu zgleda, vzora ter kot materialni vidik podpore (Dolenc, Pišot, 2010). Otroci športno aktivnih staršev so glede na rezultate raziskav tudi sami bolj športno aktivni kot otroci staršev, ki so gibalno/športno neaktivni (Doupona Topič in Kajtna, 2011; Kohl in Hobbs, 1998; Zajec, 2009; Gustafson in Rhodes, 2006; Davison, Cutting in Birch, 2003; Kropej in Videmšek, 2002).

Žal pa so današnji starši do otrok prepogosto preveč zaščitniški (Šimunič, Pišot, Planinšec, 2010). V želji po otrokovem čim večjem udobju starši pogosto delajo napake, ki so za otroka dolgoročno škodljive ("umikanje" z igrišč v varno zavetje domačega dvorišča ali stanovanja, kjer otrok nima možnosti različnih socialnih interakcij, pridobivanja različnih gibalnih izkušenj …), dopuščajo, da se otrok izmika neprijetnim situacijam, ki za otroka niso škodljive ipd.

Tako neposredno na otrokovo gibalno/športno aktivnost starši vplivajo tudi z dovoljevanjem opravičevanja pri športni vzgoji, ki je za veliko otrok dandanes edina organizirana oblika športne aktivnosti. Starši imajo lahko zelo velik vpliv na to, da se bo otrok pri športni vzgoji opravičil, četudi mu zdravstveno stanje sodelovanje pri športni vzgoji dovoljuje.

2. Problem in cilji

Zaradi zdravstvenih razlogov je učenec lahko oproščen sodelovanja pri določenih urah pouka in drugih dejavnostih šole, starši pa morajo v tem primeru razredniku predložiti mnenje in navodilo zdravstvene službe (15. člen Pravilnika …, 2004). Starši

pa včasih otroku napišejo opravičilo tudi sami, ko menijo, da otrok zaradi različnih razlogov ne bi mogel sodelovati pri športni vadbi.

Zato so bili cilji raziskave preučiti:

- kakšen je delež otrok z zdravniškim opravičilom,
- razloge za zdravniško opravičilo,
- vrsto (delno, popolno) in trajanje (krajše, daljše obdobje) zdravniškega opravičila.

Prav tako smo želeli ugotoviti:

- ali starši sami napišejo otroku opravičilo za športno vzgojo,
- kako pogosto to storijo in
- kakšne razloge navedejo kot opravičilo.

Hipoteze

Glede na postavljene cilje smo postavili naslednje hipoteze:

- H1: Predvidevamo, da je delež učencev z zdravniškim opravičilom nižji od dveh odstotkov.
- H2: Med zdravniškimi opravičili prevladujejo opravičila za krajše časovno obdobje.
- H3: Najpogostejši razlog zdravniškega opravičila je prebolela bolezen otroka.
- H4: Najpogostejši razlog za opravičilo, ki ga napišejo starši, je prebolela bolezen otroka.

3. Metode dela

Vzorec

V vzorec so bili vključeni starši (685 oseb) učencev 13 šol z območja celotne Slovenije. 454 staršev (66,4%) je imelo otroke v prvem triletju in 230 (33,6%) v drugem triletju. 321 (47,7%) staršev je imelo otroka moškega spola in 352 (52,3%) ženskega spola. Razlog za vključitev staršev v vzorec je v starosti otrok, saj učenci prvega triletja (starost šest do osem let) sami še ne zmorejo odgovarjati na zastavljena vprašanja.

Šole so bile izbrane tako, da smo naključno izbrali eno izmed osnovnih šol v Sloveniji, nato pa vsako naslednjo dvajseto šolo. Na šole, kjer so privolili v sodelovanje, smo za starše učencev poslali vprašalnike. V vzorec smo vključili vse starše, katerih otroci so obiskovali posamezno šolo, upoštevali pa odgovore tistih staršev, ki so izpolnjene vprašalnike tudi vrnili.

Vzorec spremenljivk

Vprašalnik je vseboval 16 vprašanj zaprtega tipa. Vprašalnik je razdeljen na štiri tematske sklope:

- osnovni podatki o otroku,
- poznavanje vpliva športne vadbe na otrokov razvoj in zdravje,
- zdravniška opravičenost ter
- ostalo opravičevanje.

Zbiranje podatkov

Zbiranje podatkov je potekalo v času rednega pouka v mesecih oktobru, novembru in prvi polovici decembra 2012. Vprašalnik je bil posredovan učencem, ki so ga odnesli staršem ter najkasneje po tednu dni izpolnjenega vrnili razredniku.

Metode obdelave podatkov

Podatki so bili obdelani s statističnim paketom SPSS (Statistical Package for Social Sciences inc., Chicago IL, različica 18). Uporabili smo podprogram Frequencis za izračun absolutnih in relativnih frekvenc odgovorov.

4. Rezultati in razprava

Rezultati so prikazani v tabelah v logičnem zaporedju. Legenda za vse tabele v nadaljevanju je sledeča:

- Vsi – odgovori staršev vseh učencev, vključenih v vzorec,
- Dečki – odgovori staršev dečkov,
- Deklice – odgovori staršev deklic,
- 1. Triletje – odgovori staršev učencev, ki so obiskovali 1., 2. ali 3. razred,
- 2. Triletje – odgovori staršev učencev, ki so obiskovali 4. ali 5. razred.

Ne glede na spol otroka in razred (triletje), ki ga obiskuje, lahko ugotovimo, da je bilo v trenutku anketiranja zdravniško opravičenih manj kot 4 odstotke učencev (tabela 1). *Zato prvo hipotezo (Predvidevamo, da je delež učencev z zdravniškim opravičilom nižji od 2 odstotkov) zavračamo, saj je delež zdravniško opravičenih učencev večinoma višji od 2 odstotkov*. V primerjavi z rezultati raziskave (Kolar, 2010) so odstotki zdravniško opravičenih učencev našega vzorca višji. Opozoriti pa je treba, da rezultatov ne moremo neposredno primerjati, saj je Kolarjeva analizirala evidenco opravičil, ki so jih izdali splošni zdravniki. V naši raziskavi pa so bila upoštevana tako opravičila, ki so jih izdali splošni zdravniki in specialisti. Drugih primerljivih podatkov nimamo, saj so bile podobne analize do sedaj narejene le na vzorcih učencev zadnjega triletja osnovne šole in na srednješolcih.

Tabela 1: Zdravniško opravičeni učenci

		Učenci, ki imajo zdravniško opravičilo	*Učenci, ki nimajo zdravniškega opravičila*	*Manjkajoča vrednost*	*Skupaj*
Vsi	f	21	662	2	685
	f%	3,1	96,9		100
Dečki	f	12	208	1	221
	f%	3,8	96,2		100
Deklice	f	9	342	1	352
	f%	2,6	97,4		100
1. Triletje	f	8	444	2	454
	f%	1,8	98,2		100
2. Triletje	f	12	218	0	230
	f%	5,2	94,8		100

Tabela 2: Razlog za zdravniško opravičilo

		Kronične bolezni	*Hujše poškodbe*	*Akutne bolezni*	*Drugo*
Vsi	f	4	6	5	6
	f%	19	28,6	23,8	28,6
Dečki	f	4	4	2	3
	f%	30,8	30,8	15,4	23,1
Deklice	f	0	2	3	3
	f%	0	25	37,5	37,5
1. Triletje	f	1	1	3	3
	f%	12,5	12,5	37,5	37,5
2. Triletje	f	3	4	2	3
	f%	25	33,3	16,7	25

Največ opravičil je bilo izdanih zaradi poškodb otrok (glej tabelo 2). *Tako tretjo hipotezo (Najpogostejši razlog zdravniškega opravičila je prebolela bolezen otroka) zaradi odgovorov, ki so relativno enakomerno razporejeni med odgovori "kronične bolezni, "poškodbe", "akutne bolezni" in "drugo", zavračamo*. Pričakovali smo sicer, da bo glavnina opravičil izdanih zaradi bolezni dihal (akutne bolezni), ki so najpogostejši razlog (24%) za obisk osebnega zdravnika v starostni skupini otrok in

mladostnikov od 7. do 19. leta. Vendar pa otroci zaradi poškodb osebnega zdravnika najpogosteje obiščejo prav v starostnem obdobju od 7. do 14. leta, in sicer so leta 2002 beležili 34,6-odstotni obisk dečkov in 23,4-odstotni obisk deklic (Borštnar, 2005). To obdobje je obdobje, ko so otroci bolj izpostavljeni velikim fiziološkim spremembam telesa, hkrati pa še nimajo dovolj ustreznih gibalnih/športnih znanj in izkušenj, kar ob hkratnem precenjevanju lastnih sposobnosti neizogibno vodi do poškodb (Emery, 2005; Abernethy in MacAuley, 2003; Lidqvist, Timpka in Bjurulf, 1996).

Tabela 3: Časovno obdobje opravičenosti

		Vse šolsko leto	*3–6 mesecev*	*1–3 mesece*	*Manj kot 1 mesec*
Vsi	f	5	0	3	12
	f%	25	0	15	60
Dečki	f	3	0	1	8
	f%	25	0	8,3	66,7
Deklice	f	2	0	2	4
	f%	25	0	25	50
1. Triletje	f	3	0	2	2
	f%	42,9	0	28,6	28,6
2. Triletje	f	2	0	1	9
	f%	16,7	0	8,3	75

V nadaljevanju so bili analizirani samo odgovori staršev, katerih otroci (skupaj 20 otrok) so imeli v času anketiranja zdravniško opravičilo. Pričakovano prevladujejo opravičila, izdana za obdobje do enega meseca, saj smo predvidevali, da večina otrok ni dolgotrajno bolnih. *Zato lahko tudi potrdimo drugo hipotezo (Med zdravniškimi opravičili prevladujejo opravičila za krajše časovno obdobje)*. Med učenci osnovnih šol je bilo v šolskem letu 2006/2007 dolgotrajno bolnih 0,25 odstotka otrok (Ložar, 2008), med predšolskimi otroki, ki obiskujejo vrtec, pa je bilo v šolskem letu 2011/2012 dolgotrajno bolnih otrok 0,14 odstotka (Ložar, 2012). Rezultati so zopet nasprotni rezultatom Kolarjeve (2010), saj v njeni raziskavi prevladujejo celoletna opravičila (77,6% vseh opravičil), medtem ko je bilo učencem, vključenim v naš vzorec, izdanih le 25 odstotkov celoletnih opravičil. Ponovno pa rezultati niso neposredno primerljivi zaradi različnega načina zbiranja podatkov. Primerjava s podatki Zavoda RS za statistiko in Zavoda RS za šolstvo in šport (Kovač, 1995) kažejo, da je bil delež učencev s celoletnimi opravičili v začetku devetdesetih let prejšnjega stoletja višji (1% osnovnošolcev) kot je v naši raziskavi (0,73%).

Tabela 4: Vrsta zdravniškega opravičila

		Popolnoma opravičen	*Delno opravičen*
Vsi	f	10	11
	f%	47,6	52,4
Dečki	f	4	8
	f%	33,3	66,7
Deklice	f	6	3
	f%	66,7	33,3
1. Triletje	f	5	3
	f%	62,5	37,5
2. Triletje	f	5	7
	f%	41,7	58,3

Glede na vrsto opravičila (delno, popolno) je nekoliko več delnih opravičil, kar pomeni, da so učenci opravičeni le nekaterih vsebin oziroma vadijo po prilagojenem programu. Tovrstna opravičila naj bi vsebovala tudi navodilo zdravstvene službe o prilagoditvah vadbe (Jurak in Kovač, 2010). Učenci, ki imajo delno opravičilo, lahko namreč sodelujejo pri športnovzgojnem procesu pri vseh dejavnostih, ki jih dovoljuje njihovo zdravstveno stanje. Poleg tega lahko aktivno sodelujejo kot pomočniki pri vadbi (sodniki, merilci, pomoč pri pripravi, pospravljanju rekvizitov, orodij) in se na različne načine seznanjajo s teoretičnimi vsebinami športne vzgoje. Nikakor pa nobena vrsta opravičila (popolno, delno) otroka ne opravičuje sodelovanja pri športni vzgoji, opravičuje ga le sodelovanja pri športni vadbi.

Tabela 5: Pogostost pisanja opravičil staršev

		Nikoli	*1–2x letno*	*3–5x letno*	*6–10x letno*	*Več kot 10x letno*
Vsi	f	390	229	36	1	1
	f%	59,4	34,9	5,5	0,2	0,2
Dečki	f	182	105	16	1	1
	f%	59,7	34,4	5,2	0,3	0,3
Deklice	f	202	119	19	0	0
	f%	59,4	35	5,6	0	0
1. Triletje	f	269	140	28	0	1
	f%	61,4	32	6,4	0	0,2
2. Triletje	f	121	89	8	1	0
	f%	55,3	40,6	3,7	0,5	0

Rezultati raziskave (Štemberger in Krpač, 2009) kažejo, da je v povprečju le 18,8 odstotka zdravniških opravičil, ki so jih izdali splošni zdravniki, vsebovalo tudi navodila za vadbo oziroma prilagoditev le-te. Med opravičili, ki so jih izdali zdravniki specialisti, opravičil z navodili za prilagoditev vadbe ni bilo. Podatkov o morebitnih navodilih za prilagoditev vadbe nimamo, saj starši niso bili pozorni na vsebino opravičila.

Poleg zdravnika otroku za športno vzgojo opravičilo napišejo tudi starši. Največji delež staršev pa otrokom v šolskem letu nikoli ni napisalo opravičila za športno vzgojo. Drug najpogostejši odgovor je prav tako pričakovan, in sicer so starši svojim otrokom v šolskem letu napisali do največ dve opravičili. Rezultate si lahko razlagamo tako, da otroci v tem obdobju še radi sodelujejo pri športni vzgoji oziroma je športna vzgoja najbolj priljubljen šolski predmet (Jurak, Kovač, Strel in Starc, 2005; Jurak, Kovač in Strel, 2002), zato večinoma niti ne prosijo za opravičilo. Domnevamo, da starši večino opravičil otrokom napišejo takrat, ko se otrok v šolo vrača po preboleli bolezni, zaradi katere ni bil potreben obisk zdravnika.

Tabela 6: Najpogostejši razlogi opravičila, ki ga napišejo starši

		Slabo počutje, glavobol	*Poškodba*	*Bolezen*	*Prebolela bolezen*	*Drugo*
Vsi	f	55	146	162	147	7
	f%	8,4	22,2	24,7	22,4	1,1
Dečki	f	20	70	88	72	3
	f%	6,6	23	26,8	23,6	1
Deklice	f	35	73	73	72	4
	f%	10,3	21,5	21,5	21,5	1,2
1. Triletje	f	32	93	107	102	4
	f%	7,3	21,2	24,4	23,3	0,9
2. Triletje	f	23	53	55	45	3
	f%	10,5	24,2	25,1	20,5	1,4

Razlogi za opravičilo, ki ga napišejo starši, si sledijo v naslednjem vrstnem redu

- bolezen (prehladna obolenja, otroci obiskujejo pouk),
- prebolela bolezen,
- poškodbe (zaradi katerih otrok ni obiskal zdravnika),
- slabo počutje.

Zato četrto hipotezo zavračamo (Najpogostejši razlog za opravičilo, ki ga napišejo starši, je prebolela bolezen otroka).

Rezultati so podobni rezultatom nekaterih drugih raziskav (Jurak in Kovač, 2011; Jurak, Kovač, Strel in Starc, 2005), čeprav jih neposredno ne moremo primerjati.

Starše smo namreč spraševali, zakaj oni napišejo opravičilo, v drugih raziskavah pa so avtorji ugotavljali, zakaj se učenci oziroma dijaki opravičijo pri športni vzgoji.

Tabela 7: Ali starši otroku napišejo opravičilo, če ta ne želi sodelovati pri športno vzgoji

		Da	*Včasih*	*Ne*
Vsi	f	6	13	632
	f%	0,9	2	97,1
Dečki	f	0	8	294
	f%	0	2,6	97,4
Deklice	f	6	5	326
	f%	1,8	1,5	96,7
1. Triletje	f	4	12	418
	f%	0,9	2,8	96,3
2. Triletje	f	2	1	214
	f%	0,9	0,5	98,6

Predvidevamo, da je eden glavnih razlogov, zakaj učenci ne dobijo opravičila staršev, če ne bi želeli sodelovati pri športni vzgoji ta, da zanj niti ne prosijo. Se pa že kažejo zametki kasnejšega pogostejšega opravičevanja med dekleti in hkrati manjšega ukvarjanja s športom, saj se med spoloma kažejo statistično značilne razlike, in sicer zaradi večjega deleža opravičil, ki jih starši napišejo deklicam ($p = 0.040$). Razlik med triletji ($p = 0.140$) ni.

5. Sklep

Rezultati kažejo na to, da je zdravniško opravičenih učencev malo. Prevladujejo opravičila do enega meseca, največ pa je izdanih zaradi poškodb otrok. Največ je delnih opravičil (otrok je opravičen samo dela športne vadbe). Starši otrokom prvega in drugega triletja načeloma ne pišejo opravičil za športno vzgojo. Če opravičilo napišejo, je le-to povezano z zdravstvenim stanjem otroka. Več opravičil starši napišejo deklicam kot dečkom.

Gibalna aktivnost otrok s starostjo upada (Drev, 2010; Strel, Završnik, Pišot, Zurc in Kropej, 2005; Strel, Kovač in Jurak, 2007, Strel, Starc, Leskošek, Jurak in Kovač, 2010; Škof, 2007), zato je zelo pomembno, da že z vzgojo v družini začrtamo trdne temelje zdravega življenjskega sloga, kamor sodi tudi redna in ustrezna gibalna/špor-

tna aktivnost. Žal je danes za mnogo otrok športna vzgoja edina (organizirana) oblika športne aktivnosti, zato bi morali doseči, da bi bilo opravičenih otrok čim manj. Veliko lahko na tem področju naredijo starši s tem, da ne podpirajo opravičevanja otrok (jim ne napišejo opravičil) ali pa le v izjemnih primerih in v dogovoru z učiteljem. Ker so razlike med starši v dojemanju in razumevanju pomena redne gibalne/športne aktivnosti zelo velike, velike pa so tudi razlike v rednem ukvarjanju s športno aktivnostjo, bi bilo smiselno starše o pomenu gibanja in rednega sodelovanja pri športnovzgojnem procesu dodatno izobraževati. Tu se kaže nujnost sodelovanja zdravnikov in učiteljev pri osveščanju staršev. Pogovori s starši so izjemnega pomena, saj neupravičeno opravičevanje otrok dolgoročno spodbuja gibalno/športno neaktivnost otrok in mladostnikov, kar se kot še posebej kritično kaže v obdobju adolescence.

Rezultatov raziskave zaradi pomanjkanja podobnih raziskav na obravnavani starostni skupini sicer ne moremo primerjati z drugimi. Prav tako rezultatov ne moremo posploševati, saj je vzorec premajhen. Zaključimo pa lahko, da trenutno stanje na področju opravičevanja otrok, starih od 6 do 10 let, ni problematično in se giblje v okviru pričakovanega. Kljub temu pa je treba posebno pozornost nameniti staršem deklic, saj se v tem obdobju že kažejo prvi zametki kasnejšega pogostejšega opravičevanja in zmanjšanja količine gibalne/športne aktivnosti deklet.

Vesna Štemberger, Ph.D.

Writing excuse notes for six- to ten-year old pupils for physical education

Exercise has a positive impact on body development, for our satisfaction with our body, for our self image, self-confidence, for a better cognitive efficiency, for more attention, health, better social interaction, for better development of our social skills, better child's emotional development, for the child's moral development, it lowers the risk of developing any bad behaviour and it gives us support to develop a healthy and active life style. To achieve positive effects with exercise, every child should have some moderate intensive activity for at least 60min a day every day of the week. But the results of researches show that children were far less active than was recommended. The first social system that a child lives in is its family. That is why the family has a very important impact on a child's exercising activity. The impact is made through the family's capabilities (equipment, financial support, rides…), through support and encouragement (inclusion into different sport's activities) and mostly by their own examples of a healthy and active life style.

Parents also have a direct impact on a child's activeness when they give the child an excuse letter so the child can skip physical education. They also have a large influence on their child's possibility to excuse them from physical education, even if the child's state of health allows that child to participate in physical education.

Problems and goals. Because of a health condition a child can be excused from physical education and other activities in the school if the parents present a medical opinion to the child's class teacher. Sometimes, parents write the excuse letter themselves, when they think that a child cannot participate in physical education because of various reasons.

The goals of the research where to examine:

- *the share of children with an excuse letter from a doctor;*
- *reasons for the excuse letter;*
- *the kind (full or partly) and duration (short or longer period of time) of the excuse letter from the doctor;*
- *if parents write the excuse letter themselves;*
- *how often they use an excuse letter;*
- *what are the reasons for the excuse letter.*

Hypothesis. Taking the goals into account we have set up the next hypothesis:

- *We assume that the share of children with an excuse letter from a doctor is lower than 2%;*
- *Among the excuse letters, the ones for a shorter amount of time prevail;*
- *The most frequent reason for an excuse letter from a doctor is that the child has just got over the illness;*
- *The most frequent reason for an excuse letter from the parents is that the child has just got over the illness.*

Method of work. For our sample we included the parents (685) from pupils from 13 schools from all over Slovenia. 454 parents (66.4%) had their children in the first three grades and 230 (33.6%) in the second three grades. 321 (47.7%) parents had a male child and 352 (52.3%) had a female child. The questionnaire included 16 questions. It was divided into 4 sections:

- *The child's personal data;*
- *Knowledge about how exercise impacts the child's development and health;*
- *Letters of excuse written by a doctor and last but not least;*
- *Letters of excuse not written by a doctor.*

Gathering the data took place during the school classes in October, November and in first half of December in 2012. Pupils took the questionnaire to their parents and brought it back in a week to their class teacher.

The data was processed using the SPSS software program (Statistical Package for Social Sciences inc., Chicago IL, version 18). We also used a software program called Frequencies for calculating the absolute and relative frequencies of the answers.

Results and discussion. Regardless of the child's sex or in which grade the child was in, we can establish that in the time when the research took place less than 4% of the pupils were excused with an excuse letter from a doctor. That is why we can reject the first

hypothesis (the share of children with an excuse letter from a doctor was lower than 2%) because the share of children with an excuse letter from a doctor was higher than 2%.

The biggest reason for being excused was the child's injury. Thus we can also reject the third hypothesis (The most frequent reason for an excuse letter from a doctor was that a child just got over an illness), because the answers are relatively distributed among 4 answers: chronic disease, injury, acute disease and other. We expected that the majority of the excuse letters would be due to acute disease, like breathing illnesses which was the highest reason (24%) for children aged from 7 to 19 to see a doctor. But for children aged from 7 to 14 the biggest reason to see a doctor was some kind of an injury.

Further, we only analyzed the answers from parents whose child was excused in the time of the research. As we suspected, the number of partly excused pupils was higher, meaning less long-term injuries. That is why we can confirm the second hypothesis (among the excuse letters the ones for a shorter amount of time prevailed).

Looking at the excuse letters, we can see that there were a little more partial excuse letters than full excuse letters, meaning, that pupils can participate in some exercises or they can exercise following an adapted programme. This adapted programme should be included in these kinds of excuse letters (Jurak & Kovač, 2010). Namely, pupils that are only partially excused can participate in exercises in which their health state allows them to. But there is no reason for an excuse that a child cannot attend physical education, as this kind of excuse only allows the pupil to not participate in exercises.

Beside doctors, parents can also write an excuse letter. Parents who have never written an excuse letter are in the majority. The second biggest share has parents who wrote two excuse letters at the most. We assume that parents usually write an excuse letter when a child is returning to school after he/she has got over an illness that was not that serious so they did not have to see the doctor for it.

Causes for an excuse note written by parents follow in this order:

- *illness (cold, child is going to classes);*
- *getting over an illness;*
- *injuries (but a child did not visit the doctor because of it);*
- *feeling ill.*

And that is why we reject the fourth hypothesis (The most frequent reason for an excuse letter from parents is that a child has just got over the illness).

Conclusion. The results show that the share of pupils with an excuse letter from a doctor is very low.

Excuse letters because of injuries with a duration of up to a month prevail. The biggest shares have partial excuse letters. Parents that have children in school classes from one to six, usually don't write excuse letters for them. If they do write it, it is usually connected with the child's health condition. Girls are excused more often than boys.

For many children, physical education is the only organized activity they have, so we should make it a goal to bring down the number of excuse letters as low as possible. Parents are the ones that can contribute a lot on this field, by not supporting unneces-

sary excuses and writing an excuse letter only in special cases in agreement with the class teacher. It would be very wise to educate parents about the importance of exercise, because among parents there are big differences in the perception and understanding of the importance of exercise in a child's life.

Because there are not enough researches like this within this age group we cannot compare the results. We also cannot generalize the the findings of the results because our research sample is too small. But we can conclude that attendance in some form of physical education when the pupils are aged from 6 to 10 years is in range of what we had expected. In spite of that we have to assign special attention to the parents of girls, because around these periods girls are starting to use more and more excuses to not attend the exercises and are thus lowering their amount of daily exercise activities.

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Potrebe in zanimanje učencev za izbor okoljskih vsebin pri pouku

Znanstveni članek

UDK 37.016:51

KLJUČNE BESEDE: okoljske zahteve, okoljska vzgoja, okoljska vprašanja, učenci

POVZETEK – Predmet te študije so potrebe in zanimanje učencev in učiteljev kot odločujočega merila za izbiro ekološke vsebine pri pouku narave in družbe, kar ni le praktično uporabno, temveč ima tudi teoretično in širšo družbeno vrednost in pomen. Z raziskavo nismo želeli le teoretično opozoriti na pomen ugotavljanja okoljskih potreb in interesov, temveč tudi praktično prispevati k okrepitvi izobraževalne dejavnosti v šolah, predvsem okoljske vzgoje in izobraževanja. Namen raziskave je bil zagotoviti pogoje za izdelavo ustreznih programov za učne predmete v osnovni šoli, in to ne samo narave in družbe, kjer so bile že zastopane okoljske vsebine. Med drugim je cilj te raziskave ugotoviti temeljne okoljske potrebe in interese osnovnošolcev, to pa je odvisno spola, starosti in uspeha anketirancev. Raziskava je pokazala, da je to zelo aktualna tema, ki pa je odvisna od več dejavnikov, med katerimi zaseda posebno mesto, kot je bilo že omenjeno, izviren pristop k modeliranju programa okoljske vzgoje in izobraževanja.

Scientific paper

UDC 37.016:51

KEYWORDS: Ecological needs, ecological education, ecological contents, students

ABSTRACT – The topic of this research are the needs and interests of students and teachers as the determining criteria for the choice of ecological contents in teaching. Not only is this applicable in practice, it also has theoretical and a wider social importance and value. The objective of the research was not only to theoretically emphasize the importance of determining ecological needs and interests, but also to intensify pedagogical activities in schools. The purpose of the research was to provide conditions to draft suitable curricula with ecological contents for elementary school subjects, not only Science and Social Studies. Additionally, the goal of this research is to determine basic ecological needs and interests of elementary school students and to functionally link these results to the gender, age and achievements of the subjects. The research has shown this topic is very current and is influenced by numerous factors, especially by an original approach to adapting the programme for ecological education.

1. Uvod

Ubrzano uništavanje prirode naterali su čoveka da se zamisli nad svojom budućnošću. Nekontrolisano korišćenje neobnovljivih izvora energije, uvećavanje ljudske populacije do kontigenta kad Planeta postaje pretesna, a količine hrane nedovoljne, su činjenice koje obavezuju čoveka da uskladi ne samo potrebe već, pre svega, svoje životne aktivnosti sa prirodom, tj. da se prema njoj odgovornije odnosi. Zbog nemarnog i okrutnog čovekovog odnosa prema prirodi sa Planete su nestale, i sve ubrzanije nestaju, mnoge biljne i životinjske vrste.

Opasnosti su znači poznate, na njih misleći umovi intenzivno upozoravaju, naročito u poslednjih pola veka, ali to nije dovoljno. Potrebno je preduzeti niz mera u gotovo svim oblastima ljudskog delovanja da se one ne samo otklone, nego i da se preventivno deluje kako se ne bi ni pojavljivale. Saznanja o opasnostima sama po sebi nisu dovoljna, jer je neophodna promena odnosa prema životnoj sredini. Čovek je od davnina uviđao značaj životne sredine kao izvora sopstvenog života, zato je neophodno uskladiti čovekove potrebe sa granicom izdržljivosti prirode.

Iako postoje velike razlike u ugruženosti prirodne sredine među zemljama sveta, nužno je da čovečanstvo preduzme usklađene mere da se očuvanje životne sredine radikalno unapredi. Promene prema ekološkoj sredini moraju započeti od najmlađih – dece i omladine. Potrebno je menjati način mišljenja, formirati ekološku svest i pozitivne stavove prema očuvanju životne sredine i njenom stalnom unapređivanju. Dakle, nije dovoljno biti samo svestan neke opasnosti nego treba biti i savestan pa se ponašati u skladu sa zahtevima organizma, i njegovim potrebama, a da pritom ne ugrožavamo prirodu.

Potrebe prerastaju, gotovo da se izjednačavaju sa interesovanjima, a ova vode ka vrednostima, dakle i ka ekološkim vrednostima. Jedan od značajnih faktora u razvoju i oplemenjivanju ljudskih potreba jeste organizovanost i ekološka oplemenjenost sredine u kojoj učenici žive i rade. Sve ovo najozbiljnije upozorava ovu generaciju da se daleko odgovornije odnosi i prema sebi i prema potomcima. Odgovornost školskih ustanova povećava se činjenicom da one utiču na mlade u fazi njihovog najintenzivnijeg razvoja u vreme kad se formiraju njihove potrebe, interesovanja i vrednosti.

Iako se ekologija kao nauka afirmisala tek polovinom 20. veka, njeni koreni sežu u antičku civilizaciju. O čistoti prirode pisali su starogrčki filozofi: Demokrit, Platon, Aristotel, Teofrast. Aristotel je još u IV veku pre naše ere pisao o neraskidivoj vezi čoveka i prirode. Zapisao je da čoveka okružuju priroda i arhitektura i da je arhitektura dopuna prirode. Ova Aristotelova misao ima savremenu aktuelnost. Darvin je za svoju evolucionističku teoriju mogao naći ideje baš kod Demokrita, jer je ovaj isticao da se bića i životinjske vrste stalno menjaju i da manje sposobna nestaju, a sposobna opstaju. Iz ovoga nedvosmisleno izlazi da su Demokritova razmišljanja dobra osnova za zasnivanje ekologije.

Složenica ekologija je izvorno grčki termin u kome prvi deo (eko) potiče od reči eikos što označava dom, domaćinstvo, stanište, a drugi deo (logija) označava nauku. Ako se doslovno prevede ekologija je nauka o ljudskim staništima. Danas, međutim, ekologiju niko tako ne definiše. Termin ekologija je doživeo veliku genezu, značenja su mu se bogatila i razuđivala pa zato danas nije lako naći pravu, potpunu i preciznu definiciju.

Iako se pojmovnom određivanju ekologije različito pristupa, u gotovo svim definicijama se naglašava da se pod ovom naukom podrazumeva odnos živih bića i sredine u kojoj žive.

Najšire je ekologiju definisao Kiselev ističući da se ona bavi proučavanjem zakonomernosti života u konkretnim sredinma. Polazeći od analize definicija ekologije, D. Ž. Marković ističe da su osnovni elementi svake od njih živa bića, sredina (okolina), međusobni uticaj živih bića u sredini i odnos živih bića i sredine. Zato on određuje ekologiju kao nauku čiji je predmet proučavanja odnos živih bića prema sredini u kojoj žive, njihov međusobni odnos u sredini i uticaj sredine na živa bića. (Marković, 2005, str. 30). Iz svega navedenog izlazi da je ekologija multidisciplinarna nauka koja se bavi proučavanjem odnosa živih organizama i njihove sredine.

Potreba kao pojam uvedena je u psihologiju I didaktiku radi potpunijeg opisivanja fizioloških i psiholoških karakteristika ličnosti. Taj termin je vrlo dinamičan i koristi se u različitim naukama. Najveći broj autora prihvata definiciju kojom se potrebe označavaju kao unutrašnje sile, pokretači čovekovog delovanja. No, odmah treba reći da se u svakoj nauci taj pojam određuje skladno prirodi konkretne nauke.

Erih From ističe da potrebe izviru iz čovekove egzistencije. On kaže da postoji pet glavnih ljudskih potreba: potreba za povezanošću, za prevazilaženjem, za ukorenjenošću, za identitetom i potreba za okvirom orijentacije i verovanja. From uvek postavlja potrebe u antinomijama. Tako on kaže da je prevazilaženje – stvaralaštvo nasuprot destruktivnosti. Čovek može sebe prevazići stvaranjem ili uništavanjem. (From, 1963, str. 204).

Društvo u širem smislu, neposredno okruženje, sredina, utiču na formiranje pojedinačnih potreba, naročito onih univerzalnih, opšteljudskih koje su trajnijeg karaktera, ali i onih koje nisu tako trajne i koje su podložnije menjanju u svakodnevnom životu i u interakciji sa okolinom. Na razvoj i zadovoljavanje potreba bitno utiču sociokulturni uslovi porodice i neposredne sredine. Porodica i škola su obavezne da se protiv takvih uticaja bore sadržajima i aktivnostima koji mlade upućuju ka čestitim potrebama i vrednostima, razvijaju kod njih ljubav prema pravoj umetnosti, podstiču stvaralačke sposobnosti, zainteresovanost da zaštite neposrednu životnu sredinu i sl.

Interesovanja su u neposrednoj vezi sa motivacijom, ali su kao pojam širi od pojma motivi. Definišu se kao usmerenost ka određenim sadržajima i kao spremnost pojedinca da se tim sadržajima bavi. D. Krstić kaže da je motivacija specifičnija i da ima manje više određen cilj, a da interesovanja nisu strogo definisana i da proizlaze iz celokupne strukture ličnosti. Statistički gledano, postoji pozitivna korelacija između sposobnosti i interesovanja za oblasti u kojima postojeće sposobnosti mogu da dođu do izražaja (Krstić, 1996, str. 257).

Definicija data u Političkoj enciklopediji (u njoj se koristi termin interes, a ne interesovanja) suštinski je vrlo bliska Rotovoj, ali je konkretnija i potpunija. U njoj se ističe da izraz interes izražava određen aktivan odnos čoveka prema nekoj stvari, drugom licu ili izvesnoj ideji, udeo, učešće čoveka u nečemu ili značaj, važnost, vrednost, korist za čoveka iz toga odnosa. Iz onoga što smo prethodno rekli o motivima i sada o interesovanjima jasno se vidi da je granica između ta dva pojma prilično tanka. Motiv pokreće na akciju, a interesovanja su spremnost za bavljenje određenim aktivnostima i uz to subjektu akcije pričinjavaju zadovoljstvo (Blažič, 2003). No, nas

ovde ne interesuje teorijska rasprava i razgraničavanje tih pojmova nego motivacija i interesovanje učenika za ekološku problematiku.

2. Metodologija

Predmet istraživanja

Izbor sadržaja ekološkog obrazovanja i vaspitanja i modelovanje adekvatnih programa nastave determinisan je mnogim faktorima (razvoj nauke, tehnike, društva) među kojima su potrebe i interesovanja učenika. Društvene potrebe su jedna od determinanti. Naime, u programu ekološkog obrazovanja i vaspitanja učenika uključuju se oni sadržaji, odnosno vrednosti, koje društvo očekuje da učenici usvoje. Potrebe društva i potrebe interesovanja učenika su u mnogo čemu slične, ali nisu identične. Sadržaji koji su izraz društvenih potreba učenici usvajaju i ti sadržaji postaju potrebe učenika. Vaspitanje i obrazovanje je u osnovi razvijanja potreba učenika. Usvojeni sadržaji nisu (ili ne bi trebalo da budu) neutralne vrednosti.

Složenoj problematici izbora sadržaja ekološkog vaspitanja učenika pristupamo sa aspekta utvrđivanja ekoloških potreba i interesovanja u cilju modelovanja adekvatnijih programa u nastavi u mlađim razredima osnovne škole, u kojima bi bili zastupljeni i ekološki sadržaji. Prema tome, predmet naše teme bio je istraživanje ekoloških potreba i interesovanja učenika za modelovanje ekoloških sadržaja u nastavi.

Cilj i zadaci istraživanja

Namena ovog istraživanja bila je da se obezbede uslovi za izradu adekvatnih programa nastavnih predmeta prirodnih i društvenih nauka u mlađim razredima osnovne škole u kojima bi bili zastupljeni ekološki sadržaji.

Cilj istraživanja bio je da se utvrde osnovne ekološke potrebe i interesovanja učenika osnovne škole i ovi rezultati dovedu u funkcionalnu vezu sa polom, i uspehom učenika, zatim, da se utvrdi da li postoji povezanost između ekoloških potreba i interesovanja, kao zavisnih varijabli i pomenutih faktora (pol, uspeh), kao nezavisnih varijabli i u kom stepenu ta povezanost se ispoljava.

U okviru ovako formulisanog cilja istraživanja dobijeni nalazi, metodološki elaborirani rezultati i operativne projekcije sistematizovane su po određenim stratumima – kako bi poslužili u modelovanju adekvatnih programa u kojima bi bili zastupljeni ekološki sadržaji i time obezbedili bolje osnove efikasnijoj organizaciji ekološkog vaspitanja učenika u školi.

Prvi zadatak se odnosi na utvrđivanje osnovnih ekoloških potreba i interesovanja učenika u osnovnoj školi prema varijabli pol i opšti uspeh ispitanika.

Drugi zadatak podrazumeva istraživanje stavova i mišljenja učitelja o sadržajima koje treba zastupati u programima prirode i društva u mlađim razredima u totalu i prema varijabli radno iskustvo i stepen stručne spreme ispitanika.

Metode i organizacija istraživanja

U izboru adekvatnih metoda za realizaciju istraživačkih zadataka i verifikaciju postavljenih hipoteza, prethodno smo ostvarili uvid u radove u kojima se pored opštih metodoloških problema raspravlja i o metodologiji istraživanja interesovanja učenika.

U realizaciji postavljenog cilja i istraživačkih zadataka, a koji se odnose na utvrđivanje strukture i nivoa razvijenosti određenih ekoloških potreba i interesovanja, prema dobijenim i drugim karakteristikama i varijablama, odabrali smo kao najpogodniju deskriptivnu metodu za analiziranje i izvođenje određenih zaključaka na osnovu prikupljenih i sređenih podataka. Problematika istraživanja ekoloških potreba i interesovanja učenika uticala je na izbor adekvatnih instrumenata istraživanja.

Imajući u vidu predmet i zadatke istraživanja, opredelili smo se za stratifikovano slučajni uzorak koji najviše odgovara prirodi predmeta i zadacima ovog istraživanja. Njime smo omogućili zastupljenost određenih podgrupa populacije čime naš uzorak po osnovnim varijablama (pol i opšti uspeh), liči na osnovni skup iz kojeg je izveden. Uzorak ovog istraživanja prelazi 20% osnovnog skupa iz kojeg je uzet. S obzirom da pouzdanost rezultata zavisi od drugog korena veličine uzorka, osim izbora procentualno većeg uzorka ispitanika, njegovoj pouzdanosti i reprezentativnosti smo doprineli i putem stratifikovanja po polu i opštem uspehu ispitanika. Skalom o ekološkim potrebama i interesovanjima učenika i stavovima i mišljenjima učitelja bilo je obuhvaćeno 260 učenika četvrtog razreda i 130 učitelja zaposlenih u osnovnim školama u vranjskoj Opštini.

3. Rezultati i interpretacija

U želji da se obezbede uslovi za izradu adekvatnih programa nastavnog predmeta Priroda i društvo u kojima bi bili zastupljeni ekološki sadržaji, pristupili smo istraživanju u nameri da saznamo kakve su, pre svega, ekološke potrebe i interesovanja učenika mlađih razreda osnovne škole.

Istraživanje ekoloških potreba i interesovanja učenika u cilju izbora sadržaja, modelovanju programa prirode i društva, ima praktičnu, teorijsku i širu društvenu vrednost i značaj. Sama problematika istraživanja ekoloških potreba i interesovanja učenika uticala je na izbor adekvatnih instrumenata za istraživanje koje je obavljeno početkom 2010 godine.

Namera je, znači, bila da saznamo za koje ekološke sadržaje su zainteresovani učenici kako bi se osposobili za očuvanje prirode i neposredne životne sredine i u kojoj su meri spremni da se uključe u akcije zaštite prirode.

Na osnovu istraživanja dobijeni su rezultati koji ukazuju da ispitanici nisu podjednako zainteresovani za sve aktivnosti koje podržavaju zdravu ekološku sredinu.

Tabela 1: Zainteresovanost učenika za upoznavanje ekoloških problema

Zainteresovanost za upoznavanje ekoloških problema	*X*	*SD*	*Cv*	*N*
Za upoznavanje funkcije aerofiltera	3,73	1,28	34,38	532
Kako se vrši kontrola vazduha?	4,12	1,11	26,96	533
Šta je atmosferska prašina i koja je njena štetnost?	4,08	1,10	26,97	532
Ko učestvuje u zagađivanju vazduha?	4,25	1,03	24,32	528
Kako atmosferske padavine pročišćavuju vazduh?	4,19	1,04	24,73	532
Kako se vrši prirodno prečišćavanje vazduha?	4,25	1,04	24,51	534
Kako se zaštititi od bolesti azbestoze?	4,19	1,17	27,87	530
Šta utiče na degradaciju ekosistema?	3,95	1,12	28,25	529
Upoznavanje šta je ekoklima?	4,06	1,17	28,79	526
Kako se uspostavlja ekoravnoteža?	4,07	1,10	27,11	525
Šta je erozija i šta ubrzava njeno nastajanje?	4,16	1,10	26,51	528
Kako se vrši hemijsko prečišćavanje otpadnih voda?	4,19	1,09	25,95	534
Šta izaziva katastrofalne smene u prirodi?	4,23	1,07	25,37	535
Upoznavanje suštine katalističkog postupka zaštite vazduha?	3,92	1,21	30,82	529
Šta su kisele kiše i kako one nastaju?	4,24	1,06	24,90	533
Kakva može biti zagađenost voda i ko su zagađivači?	4,26	1,03	24,25	534
Šta su: kontaminacija atmosfere, zemljišta, vode?	4,13	1,13	27,29	535
Prosečna zainteresovanost za upoznavanje ekoloških problema	4,11	0,79	19,19	541

U okviru ovog pitanja (tabela 1) učenicima je ponuđeno sedamnaest različitih ekoloških problema, čije poznavanje bi verovatno omogućilo lakše prepoznavanje zagađivača vazduha i vode, kao i neposredne životne sredine i prirode uopšte.

Nije slučajno da su ispitanici najviše zainteresovani da saznaju: ko učestvuje u zagađenju vazduha i kako se vrši njegovo prirodno prečišćavanje (4,25), kakva može biti zagađenost voda, ko su zagađivači (4,26), i šta su kisele kiše i kako one nastaju (4,24).

Na osnovu zainteresovanosti učenika, za ove ekološke probleme, može se videti u kojoj meri su vazduh i voda zagađeni i koliko je to opasno po ljudsko zdravlje.

Dobijeni rezultati mogu poslužiti sastavljačima programa iz prirode i društva, ekologije, biologije, hemije i drugih predmeta da ekološke probleme, za koje su se učenici opredelili, ugrade u programe osnovne škole.

Prosečna zainteresovanost je najveća, kako smo već pomenuli, za pitanje – kakva može biti zagađenost voda i ko su zagađivači, ali je veoma slična i za pitanja: ko učestvuje u zagađenju vazduha i kako se vrši prirodno prečišćavanje vazduha. Prosečna zainteresovanost za ova pitanja statistički je značajno veća, sa maksimalnim nivoom značajnosti, u odnosu na zainteresovanost za upoznavanje funkcije aerofiltara, šta utiče na degradaciju ekosistema i upoznavanje suštine katalističkog postupka zaštite vazduha.

Prosečna zainteresovanost za upoznavanje ekoloških problema nešto je izraženija kod učenica, ali ne i statistički značajno. Učenice su zainteresovanije za većinu pojedinačnih ekoloških problema, ali su statistički zainteresovanije samo po pitanjima: kako se zaštititi od bolesti azbestoze i kakva može biti zagađenost voda i ko su zagađivači?

Analizirajući odgovore ispitanika potvrđena je pomoćna hipoteza da nema statistički značajnih razlika u ekološkim potrebama i interesovanjima ispitanika prema varijabli pol ispitanika. Doduše, uočavaju se i neke neznatne razlike, jer se najveći broj ispitivanih dečaka interesuje – šta su kisele kiše i kako one nastaju, a najveći broj devojčica interesuje – kakva može biti zagađenost voda.

Najveća zainteresovanost ispoljena je za uređivanje parkova u sredini u kojoj žive (4,45), a najmanja za prikupljanje otpadaka oko kanala, reka i izvora (3,56). Ova dva odgovora govore o uticaju vaspitnih faktora na ekološko vaspitanje učenika. Ako su osnovni vaspitni faktori porodica, škola i društvena zajednica, onda nije slučajno da nam parkovi izgledaju kako izgledaju, što su školska dvorišta neuređena i što su kanali, reke i izvori pretvoreni u deponije smeća. Zato ne iznenađuje podatak što se ispitivani učenici ne izjašnjavaju u većem broju da žele da učestvuju u čišćenju dvorišta škola, kanala, reka i izvora od raznih otpadaka, jer smatraju da sve to treba da izgleda onako kako izgleda.

Odgovori ispitanika su znatno više doprineli pozitivnoj korelaciji zainteresovanosti učenika za ekološke probleme u odnosu na njihov uspeh i potvrdili da postoje statistički značajne razlike zainteresovanosti za ekološke potrebe i interesovanja ispitanika, prema varijabli uspeh učenika.

Jedan od zadataka ovog istraživanja bio je i upoznavanje sa mišljenjima učitelja o ekološkim sadržajima koje treba ugraditi u programe ekološkog vaspitanja i obrazovanja, polazeći od pretpostavke da učitelji visoko cene neophodnost uvođenja novih ekoloških sadržaja u nastavne programe.

Najveći značaj, u proseku, dodeljen je sadržajima: koji su osnovni zagađivači vazduha i kako ih treba otklanjati i upoznavanje posledica nemarnog odnosa čoveka prema prirodi. Prvi sadržaj je statistički značajniji u odnosu na ostale kao što su: šta su i kako nastaju kisele kiše, šta je staklena bašta, šta je uzrok cvetanja mora, domaće i međunarodne oraganizacije koje se bave zaštitom životne sredine, neke druge aktivnosti, koji su mehanički zagađivači vode i osnovne karakteristike i štetnosti radioaktivnog otpada. Osim u pogledu poslednja tri navedena sadržaja, u pogledu svih ostalih ponuđenih, učitelji su pokazali izuzetnu homogenost u procenama njihovog značaja.

Tabela 2: Stepen značaja sadržaja koje bi trebalo uvesti u programe ekološkog vaspitanja učenika

Sadržaji koje bi trebalo uvesti u programe ekološkog vaspitanja učenika	*X*	*SD*	*Cv*	*N*
Upoznavanje posledica nemarnog odnosa čoveka prema prirodi	4,51	0,79	17,41	127
Aktivnosti vezane za zaštitu čovekove sredine	4,42	0,87	19,79	128
Koristi od pošumljavanja ogoljenih površina	4,20	0,93	22,01	128
Šta su i kako nastaju kisele kiše?	3,67	1,08	29,47	126
Šta je staklena bašta, uzroci i posledice vezane za nju?	3,90	1,09	27,92	129
Koje su posledice oštećenja ozonskog omotača?	4,29	0,94	21,86	129
Koje su opasnosti od nuklearnih elektrana?	4,20	1,04	24,69	128
Koje su preventivne mere za suzbijanje šumskih požara?	4,35	0,87	19,95	127
Koje su opasne kancerogene materije?	4,27	1,03	23,99	128
Koji su osnovni zagađivači vazduha i kako ih treba otklanjati?	4,57	0,75	16,46	127
Koje su štetne posledice od prevelike buke?	4,23	0,79	18,59	128
Šta je uzrok pojave tzv. "cvetanja mora"?	3,43	1,24	36,13	125
Koja su štetna zračenja u domaćinstvu i kako ih ublažiti?	4,31	0,81	18,80	128
Koji je vek plastične ambalaže i kako se treba ponašati pri njenom uklanjanju?	4,45	0,81	18,25	128
Kolike su rezerve slatke vode i gde se nalaze njene najveće rezerve?	4,17	0,93	22,20	127
Koji su hemijski zagađivači?	4,20	0,93	22,01	128
Koji su mehanički zagađivači vode?	4,12	0,99	24,12	128
Osnovne karakteristike i štetnosti radioaktivnog otpada	4,09	1,09	26,62	128
Organizacije koje postoje u svetu i bave se zaštitom čovekove sredine	3,50	1,11	31,80	127
Organizacije koje postoje u Vašem mestu i bave se zaštitom životne sredine	3,63	1,21	33,38	128
Neke druge aktivnosti. Koje?	3,21	1,18	36,74	24
Prosečan značaj	4,12	0,67	16,19	129

Ovi odgovori su utoliko značajniji jer ukazuju na zainteresovanost učitelja za modelovanjem programa ekološkog vaspitanja. Pažnja ispitanika je fokusirana najviše na dva problema, na vazduh i neposrednu životnu sredinu. Ustvari pošli su od problema koji su najaktuelniji. Vazduh je toliko zagađen, priroda i neposredna životna sredina su previše ugroženi, da je poslednji trenutak kada treba nešto preduzeti da se dalje ugrožavanje životne sredine zaustavi.

Ipak, odgovori ispitanika se razlikuju po značaju ekoloških sadržaja koje bi trebalo uvesti u pojedine predmete u osnovnoj školi. Interesantno je da su ispitivane učiteljice samo u četiri slučaja ukazale na veći značaj za pojedine ekološke sadržaje

u odnosu na njihove kolege. Naime, one smatraju da je neophodno da se učenici upoznaju sa štetnim posledicama od prevelike buke, koje su posledice oštećenja ozonskog omotača, šta je staklena bašta, uzroci i posledice vezane za nju i koristi od pošumljavanja ogolelih površina. Na drugoj strani ispitivani muškarci, od 20 ponuđenih odgovora za 14 su se izjasnili da su značajni da se unesu u programe ekološkog vaspitanja. Iako je potvrđena pretpostavka da nema značajnih razlika u odnosu na pol ispitanika, postoji značajna razlika u samoj strukturi odgovora.

Pretpostavka da ima statistički značajnih razlika u stavovima ispitanika, prema sačinjenoj listi programa ekološkog vaspitanja učenika, u odnosu na varijablu radno iskustvo učitelja, u istraživanju je potvrđena. Ispitivani učitelji između 10 i 30 godina radnog staža, iskazuju veći stepen značaja za skoro sve ponuđene ekološke sadržaje za koje smatraju da su neophodni učenicima osnovne škole. Ova grupa ispitivanih učitelja, više nego ostali, smatra da je neophodno da se učenici upoznaju: sa osnovnim zagađivačima vazduha i kako ih treba otkloniti, koje su preventivne mere za suzbijanje šumskih požara, koja su štetna zračenja u domaćinstvima i kako ih ublažiti, koji je vek plastične ambalaže i kako se uklanja, i koje su posledice oštećenja ozonskog omotača.

Osim za nekoliko novih sadržaja, datih u tabeli, za sve ostale sadržaje veći značaj ponaosob, a i prosečni ukupni značaj, dali su ispitanici sa visokom školskom spremom u odnosu na ispitanike sa višom školskom spremom.

Odgovori na pitanje – koje ekološke sadržaje bi trebalo uvesti u programe ekološkog vaspitanja, u velikoj meri su u korelaciji u odnosu na radno iskustvo i školsku spremu ispitanika. Verovatno razlog za ovakvu korelaciju leži u činjenici da u grupi ispitanika sa preko 30 godina radnog staža ima najviše nastavnika sa višom školskom spremom. U vreme njihovog redovnog školovanja učiteljski fakulteti, na kojima su se izučavali predmeti iz ekologije, nisu još bili formirani, a kasnije, verovatno, zbog većeg broja godina radnog staža, nisu bili zainteresovani da se dalje usavršavaju.

Preovladava mišljenje, kod većine autora, da se ekološki sadržaji ne mogu uspešno realizovati samo pomoću jednog predmeta, već u okviru svih osnovnoškolskih predmeta. Istovremeno, ekološki sadržaji se mogu realizovati, ne samo teorijski već i praktično, u okviru mnogih sekcija, slobodnih aktivnosti u školi, društvima mesne zajednice, ekološkim patrolama, sekcijama za propagiranje zdrave ekološke sredine, sekcijama za ozelenjavanje površina i drugo. Skoro u svakoj osnovnoj školi postoje ekološke sekcije koje kroz različite vrste ekoloških aktivnosti upoznaju učenike sa ekološkim sadržajima.

To ipak nije dovoljno, zato je neophodno u postojeće programe ugrađivati one ekološke sadržaje koji će omogućiti učenicima da, u okviru nastave, u neposrednoj stvarnosti, posmatraju određene pojave, ali je daleko značajnije da oni aktivno učestvuju u menjanju te stvarnosti. Ne mogu se pojedini ekološki sadržaji i aktivnosti realizovati samo teorijski, već je neophodno omogućiti učenicima da se praktično uključe u njihovu realizaciju.

Dobijeni rezultati nam ukazuju da prilikom izrade programa odeljenskih zajednica i slobodnih aktivnosti učitelji planiraju ekološke sadržaje, ali je evidentno da u okviru nastave prirode i društva i ostalih programa prirodnih predmeta nema dovoljno ekoloških sadržaja. Zato je obaveza učitelja da, gde god je to moguće, kompeziraju nedostatak ekoloških sadržaja u programima, tako što inkorporiraju određene ekološke sadržaje u nastavne jedinice mnogih predmeta.

4. Zaključak

U ovom istraživanju interesovale su nas, ekološke potrebe na koje utiče, sjedne strane, sredina sa svojim ciljnim podsticajima, ali i sam čovek koji tu sredinu obogaćuje novim oblicima i sadržajima. Mnoge potrebe su, dakle, rezultat interakcije u kojoj čovek, svesnim uticajem, menjanjem i obogaćivanjem sredine u kojoj žvi, utiče na razvoj novih potreba i vrednosti, ne samo ekoloških, kao i na usavršavanje postojećih, dajući im sve potpuniji ljudski smisao.

Na osnovu analiza programskih sadržaja, koji se izučavaju u mlađim razredima osnovne škole, može se zaključiti da su sadržaji obrazovanja za zaštitu životne sredine nedovoljno zatupljeni u njima.

U samom radu je insistirano ne samo na saznanju o povezanosti čoveka i prirode, vezano za zaštitu neposredne životne sredine, već i na osposobljenosti učenika da uočavaju razne stvari, pojave u neposrednoj okolini, koje ugrožavaju prirodu i zdravlje ljudi. Pored mišljenja učenika, posebno smo obratili pažnju na stavove i mišljenje učitelja o ekološkom vaspitanju i obrazovanju učenika, posebno kada se radi o zastupljenosti ekoloških sadržaja o zaštiti neposredne životne sredine u osnovnoškolskim predmetima, i o stepenu njihove zastupljenosti.

Naročito je insistirano na uticaje pojedinih vidova pedagoškog rada na ekološko vaspitanje u školi, na stavove i mišljenja učitelja o prioritetu zastupljenosti pojedinih ekoloških sadržaja u nastavnim programima, kao i na didaktičko-metodičke postupke koje treba primeniti u realizaciji ekološkog vaspitanja učenika u školi.

Kako se i pretpostavljalo ekološki sadržaji nisu u dovoljnoj meri zastupljeni u programima i udžbenicima osnovne škole, što je istraživanje i potvrdilo. Najveći broj ispitivanih učenika smatra da su sadržaji o zaštiti i unapređenju životne sredine najviše zastupljeni u predmetima Prirode i društva i Svet oko nas, ali ne i u ostalim predmetima koji se izučavaju u osnovnoj školi.

Iako se istraživanje prvenstveno odnosilo na potrebe i interesovanja učenika i učitelja za modelovanje ekoloških sadržaja u nastavi, povremeno smo se doticali i drugih specifičnosti i osobenosti ekološkog vaspitanja.

Kako su u istraživanju glavna okosnica bili učenici i učitelji mi smo njihove stavove i mišljenja analizirali sa više aspekata.

Iako smo ovim istraživanjem obuhvatili jedan značajan segment pedagoškog rada – potrebe i interesovanja učenika i učitelja za modelovanje ekoloških sadržaja u okviru predmeta u osnovnoj školi, naše bi zadovoljstvo bilo veliko ukoliko bi rezultati ovog istraživanja pobudili nova interesovanja za dalja istraživanja iz ove oblasti.

Ljiljana Mitić, Ph.D.

Choice of ecological contents for curricula according to students' needs and interests

Due to the current world economic and financial crisis, we are afraid that the future of the world will still be conditioned by economics and finance, whereas ecology will remain on the margin of economic cycles. The World Economic Forum held at the end of March 2009 was devoted to ending the world economic crisis and overshadowed many current ecological topics, especially climate changes threatening to endanger the Planet.

This all serves as a warning to this generation to act more responsibly, not only towards nature in general, but also towards their immediate environment. Several international assemblies have warned about the necessity to establish curricula in schools to educate students on the protection and enhancement of the environment. This is particularly true for pre-school children and students up to the fourth grade because this is the age of the most intense development when their permanent needs, interests and values are formed.

When dealing with the complex issue of choosing the ecological education contents and adapting suitable programmes for Science and Social Studies and other subjects where possible, we have decided to research the ecological needs and interests of students since this is a new and fairly original approach to the adaptation of curricula. In certain studies, experts emphasize that the main objective of education is, among others, to develop students' ecological needs and interests.

Ecological education is very current as a pedagogical and ecological issue. Changes in education also occur through changes in students' positions in every stage of teaching.

Young people, and not exclusively young people, can choose some interests related to the environment; they can have needs for clean water or clean air, but this cannot be only their choice and their desire, but a much more complex issue. This complexity is also reflected in the overlap between the needs and desires with the interests of a specific society. On one hand, there is a need for clean air, on the other – there is an interest to build a profitable factory, but this will cause air pollution in the immediate environment.

For this reason it is necessary, according to most authors, for the changes towards the environment to start with the youngest – children and youth. Therefore, dilemmas on

what the best age to start with ecological education is, at the start of school or later, are false because children need to be educated on ecology within the family, in pre-school, elementary and secondary schools and at university.

One of the most impressive, authoritative and furthest reaching ecological assemblies was held in Rio de Janeiro in 1992 and the result of it was Agenda 21. A number of ambitious tasks was set and, in order to accomplish them, everyone needed to be prepared, starting from the youngest age. This grand assembly welcomed 176 presidents and prime ministers. Ecological education was set as the most important obligation because the starting idea was that, in order to form ecological awareness and build responsible relationships towards nature and the environment, a constant and systematic influence throughout the process of education was necessary. This process would be aiming to instill both theoretical and practical knowledge into students, so that they could apply it in their own environment.

Wherever possible, it is especially necessary to insert ecological content into all teaching units within classes taken in lower grades of elementary school.

With this research, we wanted to show theoretically the importance of determining ecological needs and the interests of students and teachers, but also to make a practical contribution to the intensifying of pedagogical activities in schools, especially of ecological education.

By researching to what extent the students are interested to learn about ecological issues, the results showed that the subjects were especially interested in issues concerning the protection of the environment and nature in general. Most of them wanted to learn who pollutes the air, water and soil, what acid rains are and what causes them.

Although the subjects were interested to learn about ecological issues in general, our tested fourth graders especially wanted to learn about air control, what causes ecosystems to degrade and how air can be naturally purified.

One of the tasks of this research was to learn about teachers' opinions on ecological contents which should be used to adapt curricula of certain subjects in elementary school, because it is known that ecological contents cannot be interpreted within a single subject and only theoretically, but also in practice through extracurricular activities in school and out. The teachers were given a questionnaire in which they were given the opportunity to state which ecological contents should be incorporated into ecological education programmes and which specific didactic-methodological procedures should be applied in elementary school ecological education.

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Educational discussion as a teaching method in the system of university education

Znanstveni članek

UDK 378.6:37.091.3:005.573

KLJUČNE BESEDE: razprave, univerzitetno izobraževanje, kognitivni vidiki, etični vidiki, komunikacijske sposobnosti

POVZETEK – V prispevku je predstavljen teoretični okvir za razpravo kot učno metodo v sistemu univerzitetnega izobraževanja. Preučevali smo njene značilnosti in posebnosti, ki lahko prispevajo k učinkovitejši organizaciji izobraževalne dejavnosti s študenti, spodbujajo pa tudi razvoj njihovih sposobnosti, da povežejo svoje znanje in izkušnje ter jih uporabijo pri razumevanju in sprejemanju učnih vsebin. Cilj te teoretične raziskave je bil prikazati razvoj idej o uporabi razprave v izobraževalni dejavnosti in dokazati osnovne razvojne učinke te učne metode. Ugotovili smo naslednje: razprava ima v sistemu univerzitetnega izobraževanja pomembno mesto, saj razvija kognitivni potencial študentov; razprava v izobraževalni dejavnosti prispeva h konkretizaciji etične razsežnosti izobraževanja in vzgoje; z razpravo lahko spodbujamo razvoj komunikacijskih sposobnosti študentov.

Scientific paper

UDC 378.6:37.091.3:005.573

KEYWORDS: educational discussion, university education, cognitive aspects, ethical aspects, communicative competence

ABSTRACT – This paper presents a theoretical context of educational discussion as a teaching method in the system of university education. Its characteristics and specifics have been considered, that may contribute to the organization of more efficient educational activities with students, encourage the development of their ability to link knowledge with experience, and transfer it to the process of understanding and the adoption of educational content. The purpose of this theoretical study was to present the development of ideas for the implementation of educational discussion in educational activities and to determine the basic developmental effects of this teaching method. The conclusions were drawn from the following constatations: educational discussion in the system of university education has an important place and function in the development of students' cognitive potential, educational discussion in class activities contributes to the realization of the ethical dimensions of education, implementation of educational discussion encourages the development of the communicative competence of students.

1. Introduction

The phenomenon of education and upbringing, as a complex process of self-change, is based on the knowledge that has been built throughout the development of civilization and the possibilities of developing the potential of human nature. What connects these two dimensions is a method that acts as a mediator between the reception of existing and the creation of new knowledge and the development of the overall potential of every person. In addition to modern teaching methods that are the product of technological innovations, there are a number of traditional methods that

can successfully stimulate essential educational functions, in terms of encouraging and directing cognitive activities. One such method, which is historically linked to the beginnings of the fifteenth century and the development of which reaches the present day, is the *method of educational discussion*. Knowledge and skills on which the implementation of this method is based are contained in the classical, logical-rhetorical heritage, enriched by the rules and principles that are part of the modern, but in a sense *simplified rhetorical discipline* that originated in America in the early twentieth century, known as "*Public Speaking*". By combining the theoretical philosophical knowledge of the proper use of the law of logical thinking, rhetorical knowledge of valid and clear speech and practical rules for the organization of activities in terms of persuasive public speaking, this method has been able to stay recognized and developmentally encouraging in various fields of social action and in organized educational activities.

"Education is a process, and being educated is not a permanent state, but (except for forgetting) a continuous acquisition of knowledge and values that enable independent thinking" (Videnović, 2012, p. 26). However, what is evident nowadays is the educational reduction in which opinion is increasingly being replaced by memorized reproduction, truth gives way to information, and research to the passive reception of facts and fabricated answers. Accumulated knowledge and verbalism in the process of education is increasingly replacing the synthesized knowledge of individuals, which includes improving their intellectual functions, mastering learning techniques and the ability to transfer the acquired knowledge to new situations. In this context, education can be defined as the process in which individuals from an early age, initially in a simple, and then gradually in a more complex manner, organize their personal experience, judge it and acquire new knowledge based on it. As a segment of educational process, and as an organized cognitive activity, education is "closely linked to the processes of learning and teaching, or acquiring knowledge. Depending on whether knowledge is seen as sets of information that need to be quantitatively reproduced or the attention is drawn to the quality of information, level of processing, generality and systematization – one can talk about a classical or a modern approach to education" (Kamenov, 1999, p. 5). Certainly this approach to educational activities involves the use of teaching methods that allow the improvement of cognitive functions of individuals, cultivation of their emotions, development of communicative competence, its creative expression and creation. Quality education encourages individual resourcefulness and the ability to perceive the environment in one's own unique way, to be ready to learn through trial and error in a stimulating environment and thus find an original solution to the problem, and know how to adapt to circumstances of the conditions in which one learns and creates. In this way, a vague idea about the subject matter, different from the one that occurs as completed and well-thought-out, through further movement of the spirit turns into a reflex opinion that does not accept *the familiar as the known* (Hegel, 1979), but instead it undergoes complex thinking activities. To fulfil such a request it is necessary to discover the inner world by oneself, that is, the insight of one's own cognitive abilities. Given that knowledge cannot be transmitted from one consciousness to another, it requires conditions through the process of education in which the

process of converting the familiar into conceptual thinking contributes to individuals in the discovery of their own (lack of) knowledge ("one's own fulcrum"), which, in the process of learning, presents the first assumption of knowledge (Hegel, 1970, p. 23). The aforementioned enabling environment in educational activities involves the careful selection of teaching methods, which, in the system of teaching activities, can help those who actively learn to reveal the truth through their own conceptual power. One of these methods is organized and carefully conducted educational discussion. Before proceeding to the determination of its developmental aspects, the development of this concept in the philosophical and pedagogical context will be presented. It should be noted that educational discussion in literature is determined as a form of debating.

2. Educational discussion: developmental and theoretical determination

Although the roots of today's debate formats originate from ancient China, ancient Greece and ancient Rome, the historical development of this skill (as a teaching method) is related to the more recent period. The earliest inter-university debate in an English-speaking country was held in the early fifteenth century, between the students of Oxford and Cambridge. In the second half of the nineteenth century, in the United States, at the United States Military Academy (West Point) the *National Debate Tournament* was established, which was then organized all over United States. As an alternative to this programme in 1971, the CEDA programme was created (Cross Examination Debate Association), which promoted the cross-examination method, the method that is still highly accepted (Copeland, 1995).

For an adequate explication of the subject of this survey it is necessary to define the theoretical notion of educational discussion. Discussion or a debate is a form of reasoned confrontation of different opinions on the topic, governed by the rules, in which two sides with opposing views take part, one of which represents the affirmative thesis, and the other tries to deny it. There are several types of debate: applicable, applied, judicial, parliamentary, informal and educational. Their very names indicate the scope of their implementation.

Educational debates can be implemented in different models. Nowadays, student discussions generally use the *Karl Popper* (Popper Karl) model, which includes *cross-examination* (Popper, 2002). Regardless of the differences existing in different models, there are certain standards (rules) that apply to all educational debates:

- two sides (affirmative and negative) participate in a debate, with the same number of participants, trying to successfully defend their starting points;
- both sides have the same scheduled time for performance,
- the affirmative team, the one representing the positive view, speaks first and last,
- negative team challenges their arguments.

The purpose of the discussion is not to reach a unified solution, but to create an intellectual "conflict" (clash), so that through the battle of ideas and arguments, the other students from the audience have enough material (information) for deliberation (Popper, 1992).

The subject of the discussion can include a variety of topics (propositions, suggestions). In their selection one should take into account that they need to be problematic, i.e. debatable, to allow the confrontation of opposing views. Also, the topic of the debate must be current in order to prompt the attention of the audience who later gives its opinion and reviews. The topic is specified in the form of an assumption, and not in the form of a question or a dilemma. The assumption or resolution may be a scientific topic subject to the determination of its cognitive and evaluative character.

The most appropriate form of a debate in working with students is educational discussion, which is a specific form of exercise of thought and speech. In preparation for participation in a discussion, students collect and process diverse informational materials, abstracting and systematizing the content on which they base their views. Logically-based presentation allows them to defend their views and refute the views of others. They carefully listen to the presentations of their opponents, monitor the flow of their thoughts and words, try to realize and recognize certain flaws in the arguments, and then through eloquent speech, based on good arguments, they deliver an appealing and convincing performance (view).

Practice has shown that discussion in educational activities makes everyone mentally active; those who immediately (as teams) participate in the discussion and those who have the role of *judges*, i.e. those who evaluate the performance. This method is very effective in combination with the academic presentation of teachers. The quality of this presentation is determined by the knowledge of the teachers, their professional and communicative competence, as well as the quality of their preparation for the class. The premise of a successful presentation of teachers is their clear and distinct speech, rational conceptualization of views, a degree of persuasiveness and a responsible approach to work. The implementation of the method of educational discussion has the advantage in scientific fields that include polemic or adversarial questions, which abound with problematic issues, encourage the participants to responsibly deliberate and consider the problem. It is known that in the learning process one learns about 10% of the read content, and up to 70% of the spoken content (Magnesen, according to Dryden & Vos, 2004: p. 100), it is believed that the method of educational discussions can contribute to the development of higher order thinking skills and the popularization of education.

3. Developmental aspects of educational discussion

It has already been pointed out that educational discussion as a teaching method encourages individual development in various aspects. As for the system of university

education of prospective teachers, pre-school teachers and dormitory educators, the development of their cognitive abilities, moral values and communication skills is of particular importance. In this context, this paper will continue to deal with the realization of these three aspects of educational discussion. In order to properly understand their essence and importance they need to be reviewed complementary.

The cognitive aspect of educational discussion

It is evident in the process of university education that the problem of student learning lies in the literal memorization of teaching contents, usually from prepared notes, or text passages extracted from the overall context. Their presentation is mostly reproductive, mechanical, without the creative-thinking relation to the adopted content. The level of acquired knowledge is usually measured by the quantity of adopted facts, all the while neglecting the manner in which students adopt those facts, link them to the previously acquired knowledge in the domain of the same or related scientific field and the experiences that led them to new insights and conclusions. The fact that is being neglected is that learning and memory processes are closely linked and determine each other. In order to remember the educational content, but in a manner in which the acquired knowledge is applicable, one must first learn it, which involves changes in the quality of the cognitive potential of the learner, that are the result of experience and that determine the behaviour of individuals in the system of action (Radvansky, 2006). Therefore, the method of educational discussion represents a challenge for both teachers and students, in terms of understanding the limits of traditional teaching based on verbalism and reproductive knowledge, and in terms of possibilities of engagement in a new contemplative and cognitive experience.

The cognitive aspect of educational discussion is recognized in *critical thinking and logical argumentation*. Participants who enter into a discussion with views that are not firmly established, that are contradictory, with assumptions that are not theoretically based and conceptually clear, for which there is no reliable evidence, that are not based on adequate research material, risk being refuted by the opposing party after the first performance. The value of this method is the stimulation of *one's own understanding of things* and the discovery of the importance of the concept of logical order. It is in direct opposition to the passive adoption of material, memorization and reproduction, in which the listener is outside the reach of deeper intellectual contemplation.

The process of discussion allows participants to substantiate their predetermined views and the knowledge they possess with adequate arguments, as "a set of assumptions that a person establishes in an attempt to prove that another assumption is rationally acceptable" (Govier, 1988). They can do so by finding evidence that they assume the opposing party will not be able to easily refute and disprove, making their assumption rationally justified and acceptable. From this position they can realize the importance of *critical thinking* as a major spiritual force in challenging the sustainability of their own arguments and refuting the assumptions of the opposing side. Critical thinking is defined as "a careful and deliberate decision on whether to accept, reject

or avoid the final judgment regarding some assumption" (Brooke & Parker, 2001: p. 4). In a discussion as a type of institutionalized debate, critical thinking stands out in *self-assessment of the foundation of assumptions* on which the audience forms its evaluation.

Special value of educational discussion is implied in the role that the debaters take upon themselves, and that is a discussion in favour of those theses which are not part of their beliefs. In this way they are able to understand the views that they personally do not support, and give themselves a chance for a self-critical analysis of the views they have accepted as reliable and irrefutable. The purpose of a discussion is not to reassure the participants of the validity of their current view, nor to degrade it, but to point out the importance of an open, inquiring relationship with what is accepted as a valid assumption, so that the same, in an unfounded apologetic manner, would not assume the characteristics of dogma.

Educational discussion involves *cross-examination* as a particularly demanding and interesting form of this method, which is very important in testing the *ability of quick thinking response*. Specifically, in this part of a discussion, students can best realize their reasoning, how quickly they see relations, how skilled they are in answering questions in a short period of time, immediately, on principle *ex tempore*. This model of a debate shows how prepared the students are, when asked questions that they have no ready answers for, or to which they did not pay much attention at the opening of their presentation, to resort to the kind of improvised (impromptu) speech that requires the skill of quick, sharp speech with striking examples and strong explanations. For such a situation it is necessary to have *readiness for extempore presentation*, which, rather than the extensive content, requires a simple concept based on theses as fulcrums that will develop further during the discussion.

One of the essential gnoseological values of the skill of leading a discussion that contributes to the overall quality of education is *independent research study*. Training for debating skill requires in addition to compliance with certain rules in the procedural part of the performance of a discussion, a thorough and systematic research and study of the skills that relate to the topic. However, good preparation includes research, collection and processing of data, which are not strictly limited to the topic of a debate. Hence, in addition to the materials required for the conceptual formation of a given case, the participant (student), most often masters the knowledge in related fields that can be used for other research projects, educational activities and fields of knowledge. This approach allows the training of the *appropriate use of literature*, recognition of the essential in the available material, analysis of substantive issues, their proper interpretation and synthesis in the whole. Implementation of this method has allowed the determination of interdependence between the level of preparation of the debaters and the efficiency of their participation. It is assumed that students who are seriously committed to the topic of a discussion, whose preparations are thorough, and involve systematic, research study, will deliver a better argument, lead a better dialogue and find more convincing evidence for their views.

A very important part of the cognitive dimension of a discussion is *conceptualization* (Verderber, 1991), which gives participants the opportunity, adhering to certain rules of the written language, to avoid mistakes in their presentation. It involves extracting a topic and its definition, abstracting the main ideas, the scientific definition of basic concepts, making reasonable assumptions in a logical order which gives a systematic and consistent character to the presentation in general. The condition for a good conceptualization as preparatory work is determined by the level of knowledge which is preceded by thorough research activity, the good organization of thoughts that allows concise presentation of the main views in the allotted time, and well performed distribution of speech (outlining) (Samovar & Mills, 1992). An adequately prepared concept is the confirmation of the ability to summarize the studied material in a form which is constituted so that it represents a well-conceived theoretical framework, which lacks no firm positions nor is burdened by an unnecessary ballast of redundant facts.

Obviously, the cognitive aspect of educational discussion involves a teaching method that encourages the development of intellectual potentials. They provide high quality learning as an objective awareness of the subjects, phenomena or processes, and determine the value system of the individual (Table 1). It is important to jointly review the intellectual potentials, in order for the system of institutional education to encourage their development and recognize their complementarity.

Table 1: Cognitive skills as elements of the cognitive aspect of educational discussion

Cognitive aspects of educational discussion	Critical thinking and logical argumentation
	One's own understanding of things and discovery of the importance of logical order
	Self-assessment of the foundation of assumptions
	Realistic understanding of another's point of view, extending the cognitive limits by considering opposing viewpoints
	Willingness to change one's own point of view
	Quick thinking response during cross-examination
	Readiness for independent research study and extempore presentation
	Extraction of the topic and its definition
	Abstracting the main ideas
	Scientific determination of basic concepts
	Scientific and logical arguments of the assumptions
	Theoretical finding of compelling reasons
	Making reasonable assumptions in a logical sequence of statements
	Summarization of the studied material, more comprehensive approach to the problem
	Conceptualization
	Appropriate use of the literature, recognizing what is important, substantive
	Proper interpretation and summarization of the essential material
	Concise presentation of the main views in the allotted time

It is clear that the cognitive aspect of educational discussion integrates different thinking processes into a single system for the development of more complex cognitive structures and skills that contribute to more qualitative learning and development of individuals. In the system of university education of prospective teachers, pre-school teachers and dormitory educators, this teaching method encourages the development of their professional competencies for future professions and quality pedagogical work, in terms of training them to find, analyse, reflect, evaluate and transfer their knowledge (European Commission 2005; Kopas Vukašinović, 2011).

The ethical aspect of educational debate

One of the essential prerequisites of a good and successful academic debate is the *ability to listen to the counterpart*, which proved to be a very important factor in a discussion. Study *Are you listening?*, by American researchers Nichols and Stevens (Nichols & Stevens, 1957) showed that one listens to only 25% of what is being said. This level of attention to the counterpart, when applied in a debate, would show poor results, because its quality largely depends on what the other side says, whether to present their own assumptions or to refute the opponent's. Hence the result of the discussion largely depends on the power to carefully monitor the presentation and argumentation of another person. This is where the debaters are often hampered by their innate tendency to reject and devalue opinions that contradict their own, and by the lack of a tolerance for opposing views, which determines the quality of the communication culture.

Important elements of the ethical context of educational discussion are *respect for the counterparts with opposing views, and respect for different opinions*. These elements are the bearers of tolerance and fair treatment in a debate, which largely determine the level of the quality of communication relations. However, they can only have an external effect if not truly contributing to the comprehensive understanding of the topic. In order to achieve this it is necessary not only to respect and formally consider the knowledge of the opposite point of view, but also to be impartial and willing to correct one's own viewpoint. Very often there is an imbalance between the declaration of readiness for the flexibility of one's own views and the actual expansion of cognitive limits in consideration of opposing views. This shows that students, despite their efforts to be more open in dialogue, do not always illustrate sufficient willingness to change their own views and to understand the problem more comprehensively.

This phenomenon becomes clearer if one takes into account the information obtained by Schopenhauer (A. Schopenhauer), which is presented as part of his *Eristic Dialectic*. His opinions on logic and dialectic were presented in *Short Philosophical Essays* published in 1851, in two books *Parerga* and *Paralipomena*. He realized that "innate vanity, which is extremely sensitive when it comes to intellect, does not allow for what was initially said to be proven as wrong, and for what was said by the opponent as right" (Schopenhauer, 1997, p. 5). The tendency to hastily, without deliberation, present the wrong assumption, makes people stubborn and limited in their effort to prove that they were right. This shows that people are far more concerned

with their own views than with the truth. Schopenhauer has recognized this human need to constantly be right, as an *intellectual disability* and *moral misconduct*. This craftiness can now be more easily detected in a debate and rejected in the final judgment, if one starts from the fact that evidence should be based on the logical execution of arguments. That is why, if one really wants to defend one's own point of view, it is important to listen to the opponent's opinion, in order to avoid errors in interpretation or omissions in gathering of information (arguments). However, even *careful listening to the counterpart* without true cognitive reason can be put into the function of Sophistic rhetoric. The anthropological possibility of such reason exists, therefore the duty of the teacher is to awaken the interest in the truth, that should not succumb to the interest of vanity. Still, standing by one's assumption even when the opponent is proven right, could be justified by the participant's personal conviction that the assumption is valid and that the possibility of its refutation by the opposite side is a matter of the current lack of counter-arguments. Therefore, one usually does not give up on the initial assumption, even when one realizes it to be suspicious, but seeks more accurate evidence through dialogue. However, if a valid argument still fails to present itself, either because of intellectual weakness or due to the fraudulent nature of the assumption, and the participant still tries to remain right, then the logical-dialectical discussion turns into an *Eristic debate*. This is when the following rule presents itself: stand up to the opponent's argument, even if it appears to be valid, by the means provided by the *natural dialectic*.

In fact, contrary to logic that deals with the pure form of assumptions, whose rational laws cannot contradict the truth, dialectic is a skill that, through *theoretical finding of compelling arguments* (Aristotle, 2002), can separate the objective truth of the assumption from the view that is *considered true*. Dialectic, as the art of discussion, can *correct, validate and awaken new thoughts*, but such discussions require equal counterparts in *knowledge, intelligence and skills of leading a dialogue*. When one of the participants is missing one of these elements, the debate ceases to be a noble competition and turns into an Eristic argument (Eris – Greek goddess of strife and discord). Add to that the presence of the audience, which evaluates the performance of the participants, it is quite certain that the debaters are going to resort to this sort of skill, which enables them to mislead and confuse their counterparts using the tested means of attack and defence. This enables them to make their false assumptions appear as true, i.e. as *they are right*. Students who participate in a discussion should be familiar with this type of Eristic inclination in order to be able to recognize it, expose its lies, thwart its implementation and put their dialectical skills at the service of seeking the truth.

It has been pointed out that the development of a learners' potential is an essential prerequisite for quality university education. Knowledge acquired by students in the learning process has an educational function. Teachers are expected to educate, to set the limits of behaviour and encourage the building of moral values and attitudes (Avramović & Vujačić, 2010). Therefore, it is important for an educational debate as

a teaching method to realize its values that are developed in the context of its ethical aspects (Table 2).

Table 2: Moral values as elements of the ethical aspect of educational discussion

Ethical aspect of educational discussion	Culture of communication
	Respect for the counterpart with opposing views
	Respect for different opinions
	Tolerant and fair attitude in confrontation of opinions
	Respect
	Impartiality
	Respect for other people's knowledge, opinions, and opposing views
	Willingness to correct one's own view, flexibility of one's own views
	Moral rectitude
	Seeking the truth

It is important to jointly review the cognitive and ethical dimensions (aspects) of educational discussion in the context of preparing students for their future profession. Cognitive skills and ethical values which are developed through the implementation of this method in the work with students, intertwine and contribute to the qualitative realization of planned and determined outcomes in the system of modern university education.

The communicative aspect of educational discussion

When talking about the impact of educational discussions on the verbal skills of students, the highest priority should be given to its contribution to the development of *verbal communication skills*, the possibility of *improved verbal performance, clear verbal articulation* and the application of the rules of *suggestive and persuasive speech*.

The implementation of this method in educational activities provides students with the opportunity to directly apply their theoretical knowledge and verify it through various forms of participation in the activity. It is necessary for students to realize what makes a successful verbal performance so that, in addition to the development of these intellectual abilities and ethical values, they could develop communication skills and the ability of emotional expression as important components of verbal performance. One should not lose sight of the fact that it is not enough for the speaker to speak the truth, but to convince those he/she addresses of that truth (Plato, 2002). Therefore, communicative competencies of participants in educational discussion are identified in the domain of their emotional experience.

Educational discussion as a method gives best results in situations when applied to topics that are by nature open, debatable, which have not developed one-sided views, which have a hypothetical character. In such situations, the participants are expected to offer not only a scientific and logical point of view, but also the rhetorical-dialectical skill of *theoretical finding of the possible* (Aristotle, 2000). Participation in educational discussion allows students to test the strength of their own eloquence and convince themselves of the effective power of speech with rhetorical pathos (a sensitive and suggestive speech), which involves honest speech imbued with sublimated ecstasy and spiritual Eros, that must not turn into an artificial and false expression of emotions.

> *In rhetoric "pathos" refers to the manner of speech. Sensitive and suggestive speech has been regarded as not only an ancient imperative of persuasive speech, but it is still the most essential principle in writing of "Public Speaking" manuals. Of course, it should be distinguished from pathetic which refers to artificial, insincere sensitivity that the audience easily recognizes as a false expression of emotions.*

Based on personal experience, and by listening to others, students may feel attracted to suggestive speech resulting from mental equanimity and inner peace, and thus relieve anxiety and gain a higher degree of confidence. Linking theoretical knowledge and its implementation in the confrontation of different opinions in educational discussion contributes to a more experiential learning as a process that links education, activity (experiential learning) and aspects of personal development (Žorga, 2009). When it comes to the personal development of the individual, it is possible to examine the outcomes of educational discussion in relation to its cognitive, ethical and communicative aspects. It would be neither desirable nor reasonable to interpret them individually, and it is reasonable to monitor the effects of this teaching method by jointly reviewing the outcomes in relation to these aspects.

Table 3: Verbal skills as elements of the communicative aspect of educational discussion

Communicative aspect of educational discussion	Verbal communication skills
	Ability to listen to the counterpart (active and careful listening to the counterpart)
	Improved verbal performance
	Openness in dialogue (in relation to proposals, suggestions, and opinions of others)
	Clear verbal articulation
	Ability of suggestive and persuasive speech
	Good argumentation
	Well-organized distribution of speech (as a result of planned task scheduling)
	Rhetorical-dialectical skill of theoretical finding of the possible
	Sincere speech
	Eloquence
	Emotional experience of the said (learned)

It is clear that verbal communication in educational discussion encourages the development of specific communication skills and skills that in a sense direct emotions and contribute to the achievement of emotional maturity of the counterparts (Table 3).

These communication skills, which students have mastered through the structured educational discussion, are the basis of communication and professional competences of prospective teachers, pre-school teachers and dormitory educators.

4. Conclusion

In the system of university education, educational discussion involves a teaching method that contributes to the development of the cognitive potential of students; it realizes the ethical dimensions of education and encourages the development of communicative competence of students, in a function of their preparation for the future profession.

Participation in educational discussions is the kind of intellectual challenge that gives students the opportunity to compete in a specific implementation of knowledge, in the power of rational reasoning, quick and clever thinking, in reasoning abilities and the skill of offering convincing opinions. This teaching method requires support in the strength of personal opinion, demands the freedom of speech and responsibility for the spoken word and the defended view. It offers salvation from the passive acceptance of information as fabricated truths, protects against manipulation which usually influences a lazy mind, necessarily requires the engagement of thought and causes individuals to create their own point of view.

The knowledge acquired through the experience of a discussion contributes to the development of intellectual and speech potential, fosters and improves verbal communication and ultimately enables the appropriate response and participation in the protection of human values. Nowadays, when the presentation of information and its uncritical acceptance proves as an easy and comfortable way of superficial knowledge, the model of educational discussion proves to be the holder of the affirmation of the thinking potentials of students that can enrich the quality of education.

Dr. Emina Kopas Vukašinović, dr. Ružica Petrović

Razprava kot učna metoda v sistemu univerzitetnega izobraževanja

V prispevku je predstavljen teoretični okvir za razpravo kot učno metodo v sistemu univerzitetnega izobraževanja in vzgoje bodočih učiteljev, vzgojiteljev v vrtcih in vzgojiteljev v dijaških domovih. Preučevali smo njene značilnosti in posebnosti, ki lahko prispevajo k bolj učinkoviti organizaciji izobraževalnih dejavnosti s študenti, spodbujajo

razvoj njihovih sposobnosti, da povežejo svoje znanje in izkušnje ter jih uporabijo pri razumevanju in sprejemanju učnih vsebin.

Cilj te teoretične raziskave je bil prikazati razvoj idej o uporabi razprave v izobraževalni dejavnosti ter dokazati osnovne razvojne učinke te učne metode. V študiji smo uporabili deskriptivno metodo in postopek analize vsebine.

Izkušnje so pokazale, da razprava v izobraževalni dejavnosti zahteva miselno aktivnost vseh prisotnih, tistih, ki neposredno (kot ekipa) sodelujejo v razpravi, in tistih, ki so v vlogi sodnikov, tj. tistih, ki ocenjujejo njihov nastop. Ta metoda je zelo učinkovita v kombinaciji s predavanji visokošolskih učiteljev. Kakovost teh predavanj se določi glede na učiteljevo znanje, njegovo strokovno in komunikacijsko usposobljenost, pa tudi glede na kakovost njegove učne priprave. Predpogoj za uspešnost učiteljevega predavanja je njegov jasen in razumljiv govor, razumska zasnova stališč, visoka stopnja prepričljivosti in odgovoren pristop k delu.

Ko gre za osebni razvoj posameznika, je mogoče upoštevati rezultate razprave glede na kognitivni, etični in komunikacijski vidik. Kognitivni vidik razprave se prepozna v kritičnem mišljenju in logični argumentaciji. Vrednost te metode je tudi v spodbujanju samostojnega razumevanja stvari in odkrivanju pomena logičnega zaporedja pojmov. Ta metoda je ravno nasprotna pasivnemu sprejemanju snovi, pomnjenju in reprodukciji, kjer poslušalec ostaja izven dosega globlje intelektualne aktivnosti. Razprava vsebuje navzkrižno zaslišanje kot posebno zahtevno in zanimivo obliko te metode, ki pa je zelo pomembno za preverjanje sposobnosti hitre miselne reakcije.

Posebno izobraževalno vrednost v razpravi ima vloga, ki jo imajo razpravljalci, ko gre razprava v korist tudi tistih tez, ki niso sestavni del njihovih prepričanj. Tako so v položaju, ko so sposobni razumeti tudi tista stališča, ki jih osebno niso sprejeli, sebi pa dajo priložnost za samokritičen pregled tistih stališč, ki so jih sami sprejeli kot zanesljiva in neizpodbitna. Pomembni elementi etičnega okvira razprave sta spoštovanje sogovornika z nasprotnim stališčem in spoštovanje drugačnega mnenja. Ti elementi so nosilci strpnega in poštenega odnosa v razpravi, kar najpogosteje določa stopnjo kakovosti komunikacije.

Pomembno je, da pogledamo spoznavne in etične dimenzije (vidike) razprave v okviru priprave študentov na njihov bodoči poklic. Kognitivne sposobnosti in etične vrednote, ki se razvijajo z uporabo te metode pri delu s študenti, se prepletajo med seboj in tako prispevajo h kakovostnemu uresničevanju načrtovanih in s standardi določenih rezultatov v sistemu sodobnega univerzitetnega izobraževanja.

Ko govorimo o vplivu razprave na govorno sposobnost študentov, je treba največjo prednost dati njenemu prispevku k razvoju komunikacijskih spretnosti, sposobnosti sproščenejših govornih nastopov, jasni glasovni artikulaciji in uporabi sugestivnega in prepričljivega govora. Na podlagi lastnih izkušenj, pa tudi s poslušanjem drugih, lahko študenti začutijo privlačnost sugestivnega govora, ki je posledica duševne uravnovešenosti in notranjega miru, s čimer lahko razbremenijo svojo stisko in dosežejo višjo stopnjo samozaupanja.

Zaključimo lahko z naslednjimi ugotovitvami:

- *razprava ima v sistemu univerzitetnega izobraževanja pomembno mesto kot spodbujevalec razvoja kognitivnih potencialov pri študentih;*
- *razprava v izobraževalni dejavnosti prispeva h konkretizaciji etične razsežnosti izobraževanja in vzgoje;*
- *z razpravo je mogoče spodbuditi razvoj komunikacijskih kompetenc študentov pri pripravi na njihovo prihodnjo zaposlitev.*

Sodelovanje v razpravah je vrsta intelektualnega izziva, ki študentom ponuja možnost, da tekmujejo v konkretni uporabi znanja, sposobnosti racionalnega mišljenja, hitrega in domiselnega razmišljanja, v sposobnosti presoje in spretnosti prepričljive predstavitve svojega mnenja. Znanje, pridobljeno z izkušnjami v razpravi, prispeva k razvoju intelektualnih in govornih zmožnosti, spodbuja in krepi govorno komunikacijo in na koncu usposablja za ustrezen odziv in sodelovanje pri varstvu človekovih vrednot.

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Uses and motives for playing online video games – specificities of university students

Znanstveni članek

UDK 37.091.212.5:794-028.23

KLJUČNE BESEDE: spletne videoigre, študenti, čas igranja, pogostost igranja, virtualne skupnosti

POVZETEK – Dostopnost interneta na "skoraj na vsakem koraku" in njegova uporaba v študentskih kampusih omogoča nemoteno igranje spletnih videoiger, predvsem iger MMORPG. Priljubljenost teh iger med študenti kaže, da le-ti preživijo vse več časa za računalnikom. V teoretičnem delu tega prispevka so prikazane raziskave o spletnih videoigrah na različnih področjih človekovega delovanja. Poudarek je na igrah MMORPG (Massive Multi user Online Role Playing Games) med študentsko populacijo. V empiričnem delu članka pa so predstavljeni rezultati pilotne raziskave o spletnih videoigrah med študenti glede na spol na vzorcu 136 anketirancev. Rezultati so pokazali, da obstajajo statistično pomembne razlike med študenti in študentkami v igranju spletnih videoiger, ugotovljene pa so tudi statistično pomembne razlike v spremenljivkah o pogostosti igranja, času, porabljenem za igranje, številu virtualnih prijateljev, članstvu v določenih klanih, materialnih sredstvih, ki jih porabijo za igranje nekaterih spletnih videoiger, itd.

Scientific paper

UDC 37.091.212.5:794-028.23

KEYWORDS: online video games, students, time of playing, the frequency of playing, virtual communities.

ABSTRACT – The availability of the Internet to use it almost everywhere and the use of the same in college campuses allow uninterrupted playing online video games, especially MMORPG games. The popularity of online video games in the student population shows that students spend more and more time at the computer. In the theoretical part of the paper there are shown the research on online video games in different spheres of human activity. Emphasis is on MMORPG games in the student population. The empirical part of the paper presents the results of a pilot study on online video games in the student population between the sexes on a sample of 136 respondents. The results showed that there were statistically significant differences between male and female students in playing online video games. It found the variables on the frequency of playing online video games to be statistically significantly different, the time spent on playing, the number of virtual friends, membership in a particular clan, material resources spent on playing some online video games and more.

1. Introduction

Internet access is no longer a limiting factor and online video gaming is becoming more and more popular among an increasingly younger population, frequently continuing throughout secondary and university education. The positive and negative impacts of video games on the young generation have been discussed by numerous researchers in various fields of science. The results of a research published in 1995 by Griffiths and Hunt indicated that an individual plays video games primarily for fun, for competition or because their friends do so. Apart from entertainment, learning and

other positive characteristics of using videogames in various fields of an individual's life, dependence on computer games has reached global proportions. More and more frequent online video gaming, poor social competences and aggression and impulsivity of gamers are some of the possible risk factors leading to a pathological online video gaming addiction. Ferguson (2009)

Ferguson (2009) stated that the playing of aggressive video games is not so much harmful for an individual since it enhances the visual and spatial abilities of the individual. Moreover, video games can have important applications beyond entertainment, as certain video games can be applied in medicine. In her research Kato (2010) concluded that particular video games can be applied in health care improving the outcomes of treatment of various diseases. Kron, Gjerde, Sen, Fetters (2010) conducted a research of the playing of educational video games among medical students at the Universities of Michigan and Wisconsin. A majority (80%) believed that video games can have an educational value, 77% of the respondents would use a multiplayer online healthcare simulation in their own time, and 90% of the respondents agreed that video games could help them to develop skills of working and interacting with patients.

The results of a research involving 858 secondary school students (Bourgonjon, Valcke, Soetaerz, Schellens) show that students' preference for using video games in the learning process took into account the usefulness, ease of use, learning opportunities, and personal experience with video games.

Considering that numerous researches have demonstrated that game-based learning increases students' motivation (Kebritchi et al., 2010) and creative thinking (Eow and Ali, 2009), many parents, but also teachers, opposed their use. Researchers (Bourgonjon, Valcke, Soetaert, De Wever and Schellens, 2010) specified that the perception of parents on game-based learning was strongly influenced by what others gave as advice (e.g. school teachers and experts).

The most frequently played games today appear to be the MMORPG online video games (Massive Multi user Online Role Playing Games). Griffiths (2004) mentioned that these are designed to require increasing playing time to achieve higher levels and obtain more gold, weapons, skills, and power in a virtual world. At the highest level the players are required to join clans (guilds) to be able to continue playing the game, which often requires more than ten hours of continuous gaming. Some individuals have admitted to have been engaged in the gaming activity for more than seventy hours a week. Krotoski (2004) maintains that MMORPGs have been designed to encourage group interaction and involvement, flexibility and mastery. Numerous game players feel attached to a community (clan) and find new friends often resulting in significant and long-lasting friendships.

Utz (2000) maintains that virtual friendships and player types can be divided into four categories: role-players (interested in role-playing games), gamers (play for the game and adventure), virtuals (communicate in virtual environment with virtual friends) and sceptics (spend little time playing games and are neither members of nor do they identify with any teams). However, MMORPGs can be social games with high

percentages of gamers making strong and life-long friends and emotional relationships. This has been confirmed by Cole and Griffiths (2007) in a research conducted on a sample of 912 MMORPG gamers playing in highly socially interactive environments.

Zhong (2011) maintains that the collaboration in MMORPGs can instil community responsibility, give rise to the norms of reciprocity and nourish a common interest. These elements motivate gamers to take part in other virtual community activities. This study finds that frequent in-game social interactions and enjoyable social experience in MMORPGs are beneficial to the gamers' social networks in the virtual world.

A growing number of adolescents (Griffiths, 2004) sacrifice their education and also their sleep to play the game, which has had repercussions in other areas of their lives.

In their study of gender differences among adolescents who play computer games, Chou and Tsai (2007) found that male students spent more time playing computer games. Nevertheless, it must also be noted that the number of female students playing video games is increasing. Taylor (2003) gives the reasons compelling female students to engage in the world of online video gaming to be social interaction, status and mastery, team participation and exploration. According to a recent report of the Entertainment Software Association (ESA) for 2012, 53% of online video gamers are male with 47% of online video gamers being female. Joung and Ryu (2011) suggest that MMORPGs can become the place where players can develop their leadership skills and players may transfer such leadership skills to offline contexts. A study comprising a sample of 119 respondents enabled Zaheer and Griffiths (2008) to find that male respondents found it easier to converse online than offline. Ko et al. (2005) maintain that gaming addiction is more frequent in male gamers and is correlated with older age, lower self-esteem, and a lower dissatisfaction with daily life. Hsu, Wen and Wu (2009) found that the pathological use of MMORPG can affect students' lives and that five critical factors: curiosity, role-playing, belonging, obligation and reward can be used to predict MMORPG addiction.

One of the most played games in America in 2012 was the World of Warcraft with an average weekly playing time of 500 minutes per week. This is followed by League of Legends with 402 minutes of average playing per week and the Hanging Gardens of Babylon with 267 minutes of average playing per week. The most popular mobile phone games are: Draw Something Free, Words with Friends, and Angry Birds. Based on the above-described studies and finding out that an increasing number of students engage in online video games, this paper presents the results of a pilot study on the frequency and motives of playing online video games among students.

2. Problem and hypotheses

The objective of this study was to determine the frequency and motives for engaging in playing online video games among students with respect to their gender.

A hypothesis was proposed expecting statistically significant differences in the frequency of online video gaming between male and female students. The purpose of the study was to determine the difference between the genders in terms of time spent online video gaming, form of communication during and after online video gaming and the motives for engaging online video gaming. A hypothesis was proposed expecting statistically significant differences in the frequency of and motives for online video gaming between male and female students.

3. Methods

The sample of respondents consisted of students of integrated undergraduate and graduate university studies on teaching at the Department of Pre-School and Primary School Teaching of the Juraj Dobrila University of Pula and students at the Professional Study of Entrepreneurship of the Polytechnic of Rijeka. The sample had 136 respondents, of which 61 were female and 75 were male students.

The questionnaire was created by the authors of this paper. The study was carried out in Pula and Rijeka in 2012. The survey was anonymous. Students were assessed on the basis of a 5-point Likert-type scale (1 – it never applies to me, 2 – it rarely applies to me, 3 – it sometimes applies to me, 4 – it often applies to me, 5 – it always applies to me). For the purpose of this paper, the section of the questionnaire referring to the frequency of online video gaming, communication forms and motives of online video gaming among students was used. It consists of a total of 16 items:

- How often do you play online video games?
- How much time do you spend playing online video games per day?
- During which part of the day do you play online video games most?
- What online video games do you access most frequently?
- Which appliance do you use to play online video games?
- How many online friends have you made playing online video games?
- In what way do you communicate with your online friends after gaming?
- Are you member of a clan?
- Do you consider yourself an important link in your clan?
- In what way do you contribute with material resources to gaming?
- What do you purchase most often?
- I play online video games for fun.
- I play online video games out of boredom.
- I play online video games because my friends play them.
- I play online video games to make new friends.
- I play online video games because I can’t stay without playing games even for a day.

4. Results and analysis

In order to determine the differences between male and female students in the frequency, form of communication and motives for online video gaming, within the framework of the descriptive analysis, data processing was used to calculate the following: arithmetic mean (Mean), minimum results (Min), maximum results (Max) and standard deviation (Std. dev.). A descriptive analysis of variables was calculated for all respondents (Table 1), but the results were presented separately for female (Table 2) and male (Table 3) students.

The sample comprised 136 respondents, of which 55% were male students and 45% female students. The results of the frequency item have shown that 24% male and 29% female students do not engage in online video games, hence a total of 53% of respondents did not engage in online video games.

Table 1 shows the basic statistic values obtained with regard to the observed items. It can be noted that the average values of the observed items vary with a positive deviation resulting from items playing online video games for fun and part of day when online video games are played.

Table 1: Basic statistical values of observed items

Variables	*Valid N*	*Mean*	*Min*	*Max*	*Std. dev.*
Frequency	136	2.264706	1.000000	5.000000	1.295207
Daily	136	2.022059	1.000000	5.000000	1.098598
Part of day	136	2.764706	1.000000	5.000000	1.436226
Access	136	1.713235	1.000000	4.000000	0.543079
I use	136	2.220588	1.000000	5.000000	1.051920
Friends	136	1.735294	1.000000	5.000000	1.236694
Communic	136	1.720588	1.000000	5.000000	0.900133
Clan member	136	2.147059	1.000000	3.000000	0.939104
Imp link	136	1.448529	1.000000	3.000000	0.796472
Contribution	136	1.426471	1.000000	3.000000	0.785351
Purchase	136	1.522059	1.000000	4.000000	1.115327
Fun	136	2.919118	1.000000	5.000000	1.587241
Boredom	136	2.529412	1.000000	5.000000	1.413905
Bcos of friends	136	1.963235	1.000000	5.000000	1.124858
New friends	136	1.397059	1.000000	5.000000	0.854439
Can't w/out	136	1.360294	1.000000	4.000000	0.756922

Tables 2 and 3 present the basic statistical data of the items observed among female and male students. Average values can be noted in the observed items: playing

online video games for fun, part of the day when online video games are played and playing online video games out of boredom.

Table 2: Basic statistical values of observed items (female students)

Variables	*Valid N*	*Mean*	*Min*	*Max*	*Std. dev.*
Frequency	61	2.016393	1.000000	5.000000	1.231419
Daily	61	1.721311	1.000000	5.000000	0.896868
Part of day	61	2.737705	1.000000	5.000000	1.526452
Access	61	1.672131	1.000000	4.000000	0.597810
I use	61	2.229508	1.000000	5.000000	1.160365
Friends	61	1.344262	1.000000	5.000000	0.750228
Communic	61	1.475410	1.000000	4.000000	0.721262
Clan member	61	1.950820	1.000000	3.000000	0.990391
Imp link	61	1.377049	1.000000	3.000000	0.778116
Contribution	61	1.229508	1.000000	3.000000	0.616264
Purchase	61	1.360656	1.000000	4.000000	0.931536
Fun	61	2.622951	1.000000	5.000000	1.540172
Boredom	61	2.508197	1.000000	5.000000	1.512426
Bcos of friends	61	1.770492	1.000000	5.000000	1.022960
New friends	61	1.213115	1.000000	5.000000	0.685924
Can't w/out	61	1.180328	1.000000	4.000000	0.532547

Table 3: Basic statistical values of the observed items (male students)

Variables	*Valid N*	*Mean*	*Min*	*Max*	*Std. dev.*
Frequency	75	2.466667	1.000000	5.000000	1.318612
Daily	75	2.266667	1.000000	5.000000	1.189292
Part of day	75	2.786667	1.000000	5.000000	1.368500
Access	75	1.746667	1.000000	3.000000	0.495748
I use	75	2.213333	1.000000	5.000000	0.962729
Friends	75	2.053333	1.000000	5.000000	1.450939
Communic	75	1.920000	1.000000	5.000000	0.983100
Clan member	75	2.306667	1.000000	3.000000	0.869503
Imp link	75	1.506667	1.000000	3.000000	0.811627
Contribution	75	1.586667	1.000000	3.000000	0.871366
Purchase	75	1.653333	1.000000	4.000000	1.235656
Fun	75	3.160000	1.000000	5.000000	1.594246
Boredom	75	2.546667	1.000000	5.000000	1.338548
Bcos of friends	75	2.120000	1.000000	5.000000	1.185042
New friends	75	1.546667	1.000000	5.000000	0.948588
Can't w/out	75	1.506667	1.000000	4.000000	0.875698

Testing the hypothese

The Univariate Analysis of Variance (ANOVA) and the Discriminant Function Analysis were used to determine the latent levels of distinction between male and female students and also to determine whether differences between the observed groups exist and, if so, what they are like. The results of the Univariate analysis of variance (Table 4) show that male and female students statistically differ significantly in the variables describing the frequency online video gaming, daily time spent on online video gaming, number of online friends, form of communication after online video gaming, membership in a clan, contribution with material resources to gaming, the motive of playing for fun, the motive of playing to make new friends, addiction to online video gaming.

Table 4: Univariate analysis of variance (ANOVA)

Variables	*SS Effect*	*df Effect*	*MS Effect*	*SS Error*	*df Error*	*MS Error*	*F*	*p*
Frequency	6.82032	1	6.82032	219.6503	134	1.639181	4.16081	0.043335
Daily	10.00486	1	10.00486	152.9290	134	1.141261	8.76650	0.003630
Part of day	0.08064	1	0.08064	278.3899	134	2.077537	0.03882	0.844111
Access	0.18689	1	0.18689	39.6293	134	0.295741	0.63193	0.428055
I use	0.00880	1	0.00880	149.3736	134	1.114728	0.00790	0.929330
Friends	16.91343	1	16.91343	189.5572	134	1.414606	11.95629	0.000730
Communic	6.64924	1	6.64924	102.7331	134	0.766665	8.67294	0.003809
Clan member	4.25970	1	4.25970	114.7991	134	0,856710	4.97216	0.027423
Imp link	0.56517	1	0.56517	85.0745	134	0.634885	0.89019	0.347123
Contribution	4.29115	1	4.29115	78.9736	134	0.589355	7.28110	0.007865
Purchase	2.88158	1	2.88158	165.0522	134	1.231733	2.33945	0.128491
Fun	9.70243	1	9.70243	330.4079	134	2.465730	3.93491	0.049338
Boredom	0.04978	1	0.04978	269.8326	134	2.013676	0.02472	0.875295
Bcos of friends	4.10929	1	4.10929	166.7069	134	1.244081	3.30307	0.071385
New friends	3.74265	1	3.74265	94.8162	134	0.707583	5.28934	0.023002
Can't w/out	3,58253	1	3.58253	73.7631	134	0.550471	6.50812	0.011862

Discriminant function analysis produced a discriminant function which statistically distinguishes male and female students. The correlation of variables with a discriminant function and the position of group centroids on discriminant functions are presented in Table 5. The variables which lie to the negative pole of the discriminant function indicate female students, and variables lying to the positive pole of the discriminant function indicate male students.

Table 5: Discriminant function analysis summary

	Eigen-value	*Canonicl R*	*Wilks' Lambda*	*Chi-Sqr.*	*df*	*p-level*
1	0.254142	0.450158	0.797358	28.53295	16	0.027282
N = 16; Grouping: SPOL; F(16.119) = 1.8902; p < 0.0277						
Var	*Root 1*					
Frequency	0.174920					
Daily	0.363550					
Part of day	–0.730042					
Access	0.162589					
I use	–0.207609					
Friends	0.443987					
Communic	0.274549					
Clan member	0.406435					
Imp link	–0.244944					
Contribution	0.444754					
Purchase	–0.146513					
Fun	0.078339					
Boredom	0.004597					
Bcos of friends	–0.033024					
New friends	0.049153					
Can't w/out	0.076246					
G_1:1	–0.554865					
G_2:2	0.451290					

From the correlations of variables with the discriminant function it can be inferred that students achieve higher values in the variables describing the frequency online video gaming, daily time spent on online video gaming, number of online friends, form of communication with online friends after online video gaming, membership of a clan, contribution with material resources to gaming, the motive for playing for fun, the motive for playing out of boredom, the motive for playing to make new friends, addiction to online video gaming. Higher values of variables, part of day when online video games are played most, appliance used to play online video games, important link in a clan, most frequent purchases, playing because friends play, were achieved by female students.

5. Conclusion

On the basis of the indicators obtained through the students' self-evaluation, it can be inferred that there are differences in the frequency of and motives for online video gaming as well as in the form of communication during and after online video gaming. Male students lead in the frequency of online video gaming. A total of 18% of male and 15% of female students play online video games two or three times a week. On the other hand, 16% of male and 7% of female students play online video games on a daily basis. Female students (22%) spent no more than one hour a day playing online video games, just as their male colleagues (20%). Four to six hours a day were spent by 13% of male students. 6% of female students spent two to three hours gaming. More than six hours a day is spent on online video gaming by 1% of female and 2% of male students. A total of 30.9% of the respondents played online video games one hour a day, with 14.7% and 11% of the respondents engaging in online video gaming for two to three and four to six hours.

The fact that 13% of male students spent 4 to 6 hours a day engaging in online video gaming is of great concern. According to Ko (2005) this can point to a possible development of online videogame addiction in male students. However, Griffith (2010) argues that the amount of time spent playing does not necessarily lead to addiction, and that online gaming addiction can be defined when excessive gaming impacts negatively on other areas of the gamers' lives. However, the question remains whether students who spent more than four hours a day playing could use this time engaging in better quality forms of free-time activities such as sport, leisure, hobbies, socializing with peers and learning activities such as writing homework, preparing intermediate and final exams. Moreover, it is also interesting that 5% of female and 3% of male students play online video games at night, which could indicate a possible sleeping disorder. The results of a study conducted by Wenzela et al. (2009) that people engaged in online video gaming for more than 4 hours a day (associated with a strong risk factor) were of male gender and single marital status. Also, respondents reported sleeping disorders, anxiety, obsessions/compulsions etc. One of the most frequent forms of communication during online video gaming was via social networks.

Social networking is used as a form of communication with their online friends by 16% of female and 25% of male students, Skype is used by 5% of female and 15% of male students; 2% of male students and none of the female students opted for socializing. Communication by mobile telephone is established by 1% of female and 2% of male students. New forms of communication or, better say, new dimensions of media communication are, therefore, becoming more frequently used among the student population.

Over the past forty years, video games (Boyle, Connolly, Hainey, Boyle, 2012) have become one of the most popular leisure activities globally. The most frequent motive for engaging in online video games with both male and female students is playing for fun. Thus 11% of female and 22% of male students play video games

for fun, with 9% of female and 8% of male students playing it out of boredom. The question whether they engage in online video gaming because their peers did the same, 1% of female and 2% of male students replied positively. Only 1% of male and female students respectively played online video games to make new friends. A total of 1% of female and 4% of male students could not live one day without online video gaming. Communication during online video gaming was vital in creating new friendships. A total of 19.1% of both male and female students found from one to five friends. The results of the study completed by the authors Sublette and Mullan (2012) revealed that, apart from players who were classified as "addicted" or engaged in "problematic game play" and had experienced significant negative consequences of online video gaming, many gamers found positive aspects to video gaming, which indicates that they played exclusively for enjoyment, feelings of achievement, friendship, and a sense of community.

It can be concluded that playing online video games is very popular among students, that male students are more likely to play and that an increasing number of female students actively engaged in online video gaming. Playing video games for fun, out of friendship, sense of belonging and similar suggest positive aspects of playing games, while engaging in online video gaming out of boredom, impossibility to stop playing, playing at night, impossibility to reject when playing in a clan, spending (unplanned) money to purchase the necessary gadgets, absence from school to play games and the cancellation of appointments exclusively to enjoy online video gaming may indicate a possible addiction to online games and unwanted forms of behaviour among students.

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Pogostost in motivi za igranje spletnih videoiger med študentsko populacijo

Vse bolj prisotne znanstvene raziskave, ki se interdisciplinarno ukvarjajo s preučevanjem vpliva spletnih računalniških iger na mlade, so raziskave o naraščanju uporabe nasilnih iger med igralci. Poleg tega pogosto in "pretirano" igranje spletnih videoiger lahko opozarja na odvisnost od računalniških iger. Nekatere raziskave so pokazale, da lahko igranje spletnih videoiger več kot štiri ure dnevno povzroči težave s spanjem in občutke tesnobe.

Dostopnost interneta, predvsem v študentskih kampusih, zagotavlja stalni dostop, hitro povezavo, in s tem pogostejše igranje spletnih videoiger. Številne študije (Griffiths, 2004) navajajo, da večina študentov zanemarja svoje študijske obveznosti, ta čas pa porabi za igranje spletnih videoiger. Nekateri avtorji (Kebritchi et al., 2010, Eow in Ali, 2009, Zhong, 2011) menijo, da poleg negativnih vidikov igranja spletnih videoiger obstajajo tudi pozitivni, ki se nanašajo na povečanje motivacije, ustvarjalno mišljenje, spodbujanje

sodelovanja med člani, krepitev družbene odgovornosti, pripadnost virtualni skupnosti, boljša komunikacija med igralci ipd. Mnogi avtorji so izvedli raziskavo o vplivu spletnih videoiger na posameznika (Anderson in Dill, 2000, Anderson in Bushman, 2002, Gentile, Lynch, Linder in Walsh, 2004) in ugotovili, da pretirana izpostavljenost spletnim videoigram lahko vpliva na povečanje jeze in sovraštva pri komunikaciji s profesorji in vrstniki.

Po drugi strani pa so pozitivni vidiki povezani z najpogosteje zastopanimi igrami med igralci računalniških iger oz. s spletnimi videoigrami MMORPG (eng. Massive Multi User Online Role Playing Games). Programirane so tako (Griffiths, 2004), da čas igranja podaljšujemo in s tem dosežemo višjo raven igre, tj. boljše orožje, večjo spretnost, več moči in zlata v virtualnem svetu. Krotoski (2004) meni, da so te igre zasnovane tako, da spodbujajo skupinsko interakcijo, sodelovanje igralcev, fleksibilnost in spretnost pri igranju. Številni posamezniki, ki igrajo igre, občutijo ob tem pripadnost skupnosti (klanu), najdejo nove prijatelje in pogosto stkejo dobre in trajne prijateljske vezi. Da so MMORPG lahko socialne igre, kjer igralci najdejo trdna in vseživljenjska prijateljstva, tudi čustvene zveze, sta Cole in Griffiths (2007) potrdila v študiji, opravljeni na vzorcu 912 igralcev MMORPG, ki igrajo te igre v visokem družbeno interaktivnem okolju. Zhong (2011) meni, da sodelovanje z igralci lahko privede do večje družbene odgovornosti in skupnih interesov pri igranju. Ravno nekateri od teh elementov motivirajo igralce, da postanejo aktivni člani virtualne igralniške skupnosti.

V prispevku so predstavljeni rezultati pilotnih študij za ugotavljanje razširjenosti in motivov za igranje spletnih videoiger med študenti obeh spolov. V skladu s tem je bila postavljena hipoteza, da se pričakujejo statistično pomembne razlike v pogostosti igranja spletnih videoiger med študenti in študentkami. Namen raziskave je bil ugotoviti razlike med spoloma, čas, ki ga na dan porabijo za igranje spletnih videoiger, obliko komunikacije med in po igranju in motive za igranje spletnih videoiger.

Vzorec aketirancev je bil sestavljen iz študentov dodiplomskega in podiplomskega skupnega pedagoškega študija na Oddelku za vzgojne in izobraževalne vede Univerze Jurja Dobrila v Pulju in študentov strokovnega študija podjetništva Univerze na Reki. Vzorec je sestavljalo skupaj 136 anketirancev, od tega 61 oz. 45% študentk (Ž) in 75 oz. 55% študentov (M).

Raziskava je bila izvedena v letu 2012. Anketa je bila anonimna. Študenti so odgovore izbirali na Likertovi 5-stopenjski lestvici (1 – nikoli ne velja zame, 2 – redko velja zame, 3 – občasno velja zame, 4 – pogosto velja zame, 5 – vedno velja zame). Za ta prispevek je uporabljen del vprašalnika, ki se nanaša na pogostost igranja, način komunikacije in na motive za igranje spletnih videoiger med študentsko populacijo. Sestavljen je iz 16 vprašanj:

- *Kako pogosto igrate spletne videoigre?*
- *Koliko časa na dan porabite za igranje spletnih videoiger?*
- *V katerem delu dneva ponavadi igrate spletne videoigre?*
- *Najpogosteje igrate spletne videoigre?*
- *Katero napravo uporabljate za igranje spletnih videoiger?*

- *Koliko virtualnih prijateljev ste dobili pri igranju spletnih videoiger?*
- *Kako komunicirate s spletnimi prijatelji po igranju?*
- *Ali ste član katerega od virtualnih skupnosti/klanov?*
- *Ali imate občutek, da ste pomemben člen v vašem klanu?*
- *Kako prispevate k materialnim sredstvom pri igranju?*
- *Kaj ponavadi kupujete?*
- *Spletne videoigre igram za zabavo.*
- *Spletne videoigre igram, ker mi je dolgčas.*
- *Spletne videoigre igram, ker jih igrajo moji prijatelji.*
- *Spletne videoigre igram, ker pri tem spoznavam nove prijatelje.*
- *Spletne videoigre igram, ker ne zdržim niti dneva, ne da bi igral.*

Pri obdelavi podatkov so bile za potrditev razlike med študenti in študentkami v pogostosti igranja, načinu komunikacije in motivih za igranje spletnih videoiger v okviru opisne analize izračunane z naslednje opisne vrednosti: srednja vrednost, minimalne ocene, najvišje ocene in standardni odkloni. Opisna analiza spremenljivk je bila izračunana za vse udeležence, rezultati pa so predstavljeni ločeno za študentke in posebej za študente. Da bi potrdili latentno raven razlik med študentkami in študenti, in če sploh obstajajo, kakšne so razlike med obema skupinama, smo uporabili univariatno analizo variance (ANOVA) in diskriminantno analizo.

Rezultati so pokazali, da obstajajo statistično značilne razlike med anketiranci v igranju spletnih videoiger. Po rezultatih ankete lahko ugotovimo, da se študenti in študentke statistično pomembno razlikujejo v naslednjih spremenljivkah: pogostosti igranja spletnih videoiger, času, ki ga na dan porabijo za igranje, številu spletnih prijateljev, načinu komuniciranja s prijatelji na spletu po končanem igranju, članstvu v določenem klanu, dohodkih pri igranju, motivih za igranje za zabavo, motivih za igranje zaradi novih poznanstev in zasvojenosti z igranjem spletnih videoiger. Študenti dosegajo večje vrednosti v naslednjih spremenljivkah: pogostosti igranja spletnih videoiger, času, ki ga na dan preživijo z igranjem, številu spletnih prijateljev, načinu komuniciranja s prijatelji na spletu, ko končajo igranje, članstvu v določenem klanu, dohodkih pri igranju, motivih za igranje za zabavo, motivih za igranje iz dolgočasja, motivih za igranje zaradi novih poznanstev in zasvojenosti z igranjem spletnih videoiger. Študentke dosegajo višje vrednosti v spremenljivkah, povezanih z delom dneva, ko ponavadi igrajo spletne video igre, z uporabo naprave, s pomembnostjo člena v klanu, s tem, kaj največ kupujejo, in z igranjem, ker igrajo njihovi prijatelji.

Uporabna vrednost tega dela je, da daje smernice v zvezi z razlikami v pogostosti in motivih za igranje spletnih videoiger med študentsko populacijo obeh spolov. Pozornost je treba usmeriti na negativne vidike: igranje spletnih videoiger iz dolgočasja, nezmožnost za prekinitev igranja, igranje iger ponoči, nezmožnost zavrnitve, ko je dogovorjeno igranje v klanu, poraba (nenačrtovana) denarja za nakup potrebnih sredstev, odsotnost s predavanj zaradi igranja, pa tudi odpoved vnaprej dogovorjenih aktivnosti izključno zaradi igranja spletnih videoiger, kar bi lahko opozarjalo na morebitno odvi-

snost od spletnih iger in neželjenih vzorcev obnašanja v študentski populaciji. Vendar pa se moramo zavedati tudi pozitivnih vidikov: igranje videoiger predvsem za zabavo, zaradi prijateljstva, občutka pripadnosti, kar je pomembno v času študija in prispeva k boljšim dosežkom, pridobivanju prijateljev, pa tudi k večji družbeni odgovornosti in skupnim interesom.

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Improving the teaching staff's professional competence in non-formal education

Strokovni članek

UDK 37.011.3-051:331.546:374

KLJUČNE BESEDE: podiplomska izobrazba, formalno izobraževanje, neformalno izobraževanje, ciljna skupina, poklicne kompetence

POVZETEK – V zadnjih desetletjih se je zahvaljujoč razvoju informacijske tehnologije povečala uporaba različnih oblik, namenjenih izboljšanju poklicnih kompetenc, vključno s tistimi s področja neformalnega izobraževanja. Na izobraževalnem trgu so dobro zastopani brezplačni in komercialni tečaji, njihova ciljna skupina pa je učno osebje. Obenem pa obstajajo določene razlike v razumevanju učinkovitosti področja formalnega in neformalnega izobraževanja, njunih prednosti in slabosti, ki jih je treba upoštevati pri izbiranju vsebine, oblik in metod, s katerimi bi želeli povečati raven poklicnih kompetenc. Namen študije je ugotoviti vtise učiteljev, ki so udeleženi v neformalnem izobraževanju, in njihovo subjektivno oceno učinkovitosti tovrstnega usposabljanja. Članek ponuja kratek pregled značilnosti neformalnega izobraževanja, razlike v primerjavi s formalnim in priložnostnim izobraževanjem, razloge za izbiro v študiji uporabljene metode ter njene rezultate.

Professional paper

UDC 37.011.3-051:331.546:374

KEYWORDS: post-graduate education, formal education, non-formal education, focus group, professional competences

ABSTRACT – During the last decades the use of different forms of improvement of professional competence has increased due to the development of information technology, including those in the non-formal education sector. In the education market both free and commercial courses are well represented, and their target group is teaching staff. At the same time, certain differences exist in the understanding of efficiency of both formal and non-formal education sectors, their advantages and disadvantages that must be considered when choosing the content, forms and methods to increase the level of professional competence. The purpose of this study is to determine the impressions of teachers who participate in non-formal education and their subjective assessment of the effectiveness of such training. The article provides a brief overview of the features of non-formal education, its difference from formal and informal education, the grounds for choosing the method of study, as well as its results.

1. Introduction

Specific uses of different forms of education in vocational education and professional development have been well described in the studies conducted during the last 10-15 years. The development of information technology has created the conditions for the active learning of teachers outside the existing formal postgraduate education system (Ivashnova S., 2012). However, some reasons remain outside researchers' consideration concerning the reasons why pedagogical workers choose non-formal education as the most important method of improving their professional competence. There is a lack of empirical evidence for the efficiency of non-formal education in the

context of planning the individual professional educational path. Some teaching staff believe that the organizers of non-formal education are willing to provide the most favourable conditions for efficient learning, constant monitoring and external motivation of a student, but the reality often does not match the students' expectations.

The main objective of this paper is to study the learning experience received by students from various non-formal courses.

Purpose of the study:

- to study the attitude of teachers to non-formal education;
- to identify the main advantages and disadvantages of non-formal education;
- to provide strategic tools for improving the quality of non-formal education to improve the level of professional competence.

The improvement of professional competence of teachers in practice occurs not only through training at postgraduate pedagogic education institutions or teachers' training institutes once every five years, as required by law of some countries in the former Soviet Union (for example, Ukraine, Belarus, Kazakhstan and Russia). The teaching staff improves most of its competences by itself in the course of duty, through self-education and participation in methodological work, formal and informal (non-official) education. Formal education, defined in various sources as a hierarchically structured, chronologically regulated, certified education system (Smith, 2001) is characterized by the existence of standardized specialized programmes and educational institutions.

Simultaneously with formal education in the mid-twentieth century, non-formal education has become more widespread, being usually understood as any organized educational activity outside the established formal system (Smith M.K., 2001). At the same time, the goals of formal education are usually practical, utilitarian and are primarily educational in nature (Samlowski M., 2011), and training does not imply receiving any official document (certificate or diploma). Both formal and non-formal educations have a certain time frame. Informal (non-official) education is really a lifelong process during which every individual acquires the skills and knowledge from daily experience and the educational influence of the environment – family and neighbours, work and play, markets, libraries and mass media. Various features of non-formal education have been studied in a number of works (e.g. Colardyn D., 2001; Colley H., 2003; Davis B.G., 1993; Fordham P.E., 1993 and others). It is noted (Smith M.K., 2001), that non-formal education is mainly used in the third world countries to eradicate illiteracy, in health education programmes implemented by non-profit organizations, etc. However, there are a variety of programmes to improve professional competence.

According to the data obtained by Eurostat in 2009, a considerable part of the EU population aged 25–64 has been actively involved in non-formal educational activities, 80% of the learning objectives being directly related to professional development: the desire to have a better job and career (45%), improve knowledge and skills

in a certain sphere (33%). The organizers of non-formal education include companies (38%), non-formal educational organizations (18%), commercial entities (10%) (Boateng S.K., 2009).

Non-formal education is recognized as part of "lifelong learning", which is reflected in the documents of UNESCO and the International Standard ISO 29990: 2010. "Learning services for non-formal education and training – Basic requirements for service providers". The application of this document in the Russian education system, as well as in all post-Soviet states, has a number of features relating to actual content of "non-formal education" and "training" concepts, the use of which in the post-Soviet reality does not have such a long history (Skrynnik I.K., 2006; Popova I.S., 2011; Pankina G.V., Guseva T.V. 2011, and others).

Given the growing role of non-formal education and the lack of attention to the peculiarities of its use to improve the professional competence of teachers, a study of the advantages, disadvantages and ways to improve it has been conducted.

Comparative analysis of formal, non-formal and informal education (Smith M.K., 2001) testifies to the existence of certain similarities, while highlighting some differences in a number of characteristics relating to the organization of education, its objectives, content, staffing, etc. The proper definition of the term "informal education" in ISO 29990: 2010 is based on the principle of "a contrario" (Pankina G.V., Guseva T.V., 2011), which brings us to the conclusion that these concepts are insufficiently differentiated from the scientific point of view.

Based on the analysis of scientific literature, including the results of studies represented in the works by Skrynnik I.K. (2006); Smith M.K.(2001), Popova I.S. (2011); Pankina G.V., Guseva T.V. (2011) etc., we have identified the following benefits of non-formal education:

- voluntary participation;
- wide range of contents and forms;
- no previous education required;
- a great deal of reliance upon the participants' experience.

We have also identified some features which we consider to be disadvantages:

- no certification and standardization;
- no officially recognized diplomas (certificates);
- short duration of courses;
- no interrelations between different courses.

In order to verify the results obtained during theoretical study, an empirical study has been conducted. In this case, the assumption is made that the existing teachers' experience of participation in non-formal education will not only identify the advantages and disadvantages of non-formal education as a form of improvement of professional competence, but also will offer ways to improve its efficiency.

2. Research methods

From the point of view of the declared area of study, the focus group method is determined as the best research method as appropriate for research objectives for the reasons mentioned in several papers (Hussey and Hussey, 1997; Dick, 1997; Krueger, 1994; Morgan, 1997; Sherraden, 1995; Punch, 1998; Law et al., 1998; Davis, 2000; Linville et al., 2003). Focus groups (Hussey and Hussey, 1997: p. 155) are used mainly "for collection of data related to feelings and opinions of a group of people involved in a similar situation." Based on the analysis of the scientific literature, the main features of this method have been identified:

- opportunity to study the subjective opinions; "research and discovery, a deep understanding of the subject in the context, and an interpretation of why it is as it is and how it happened" (Morgan, 1998: p. 31), which allows us to study the response of students to various aspects of the learning process, for example, a training programme (Patton, 2002; Piercy and Nickerson, 1996);
- high level of data accuracy;
- time saving while obtaining a lot of responses in a short period of time compared to the interview (Law et al., 1998);
- opportunity to observe the communication between group members.

The study involved three focus groups. Each focus group consisted of six students representing various specialties, subjects taught, different types of schools and skill levels. As a basis for the definition of discussion topics for the focus groups we have used a literature review on non-formal education, on which basis three open discussion questions were identified:

- What are the benefits or advantages of non-formal education, as applied to improving the level of your professional competence, if you compare it with other forms of education (formal, informal)?
- What features of non-formal education seem to you the most / least exciting, motivating, what improvements could you suggest?
- What are the main problems associated with non-formal education for skill improvement?

The discussion was conducted in the form of an on-line chat, making it easier to document and further analyze the data obtained. The discussion in the focus groups – 60 minutes. Focus groups were formed on a voluntary basis from participants of various non-formal courses. Focus group FG1 consisted of representatives from Ukraine, FG2 – Russia, FG3 – representatives of both countries. As discussions were held on the condition of anonymity, each respondent was assigned a code consisting of the group code (FG1; FG2; FG3) plus student number (1 to 6). So, the only empirical study involved 18 respondents. The group members' statements were analyzed and classified, the results are presented in the tables below. The identical statements and opinions in the discussion are presented in the tables only once.

3. Research results

Benefits and advantages

Teaching staff have been in favour of non-formal education as one of the most effective ways to improve the level of professional competence (Table 1). The majority of respondents said that they like participating in non-formal education using distance learning technology when they feel comfortable and self-assured. Most of the respondents believed that participation in non-formal distance learning helped them to successfully use the experience accumulated over their careers. In addition, participation in non-formal education uses distance learning technology which helps to remove psychological barriers in teachers with extensive teaching experience, which they might have in a situation when they learn something which is new for them personally, but is well-known to the rest of the group members.

Table 1: Focus groups' statements and estimates: benefits and advantages of non-formal education

Respondent	*Statement*	*Benefit*
FG1S1	Education courses outside the IOPS help to increase the circle of professional contacts.	More professional contacts
FG2S3	This is a good way to critically evaluate your own experience.	Critical self-evaluation of professional experience
FG2S5	Communication with colleagues from other regions serves as a catalyst for new ideas.	Stirring up creativity
FG3S1	I think gaining experience as a student is important.	Learning experience as a student
FG3S2	You may do your tasks at any time of the day.	Individual schedule
FG3S5	You work on your own, but still remain a member of the group getting help and hints.	Consideration of group members' experience
FG3S6	If something does not work, I feel more relaxed than during conventional courses, since I don't know anyone personally.	Psychological comfort

All focus group participants previously took part in a number of non-formal education courses, and only 2 participants gave a negative evaluation to non-formal education as a way to improve professional competence.

Problems

Focus group participants were asked to identify the main challenges they face taking part in non-formal distance learning courses. The statements on this topic (see Table 2) indicate major problems: poor Internet connection; unequal students' activity;

students receive credits for formally completed tasks; irregular distribution of efforts in performing tasks; different approaches to the work process; no official recognition of the certificates received.

Table 2: Statements and estimates of the focus groups: problems relating to non-formal education

Respondent	*Statement*	*Problems*
FG1S1	Most of the problems which I personally had were caused by technical things – Internet connection speed, frequent disconnection.	Technical equipment
FG1S2	When I started studying, I realized how difficult it was to make time for lessons. The teacher's work did not end with the ring of the school bell, the workload does not allow you to manage time properly, so I have to sleep less.	Excessive load on the workplace
FG1S3	Teamwork may sometimes be complicated by the fact that your team partner does not complete the task in time (for example, someone failed to write comments for work in time).	Unequal participation
FG1S4	The webinars schedule didn't suit me, but when I viewed a recorded webinar, I was unable to ask all the questions for each participant.	Feedback problems
FG2S2	Despite the fact that the courses were attended by teachers, their attitude to the completion of tasks were different – some people put their soul into the job, while others were uninterested, but everyone passed the training anyway.	Different attitude to completion of tasks
FG2S4	It's a pity that this kind of education does not count as advanced training – during courses at the Institute, I consulted many participants, which means that the knowledge and skills I acquired comply with modern requirements, but to obtain an official certificate I had to learn again.	No officially recognized certificates
FG3S5	Some group members initially almost did not participate in discussions and completion of the practical group tasks, and completed the entire programme during last week.	Irregular activity of students
FG3S6	I experienced certain discomforts due to the fact that it was necessary to constantly evaluate the work done by others, and the evaluation objectivity was impaired by an unwillingness to offend someone. Because of this, it turned out that not only the best works, but also the average ones, were given the highest points.	Insufficient objectivity of evaluation

As can be seen from Table 2, the majority of respondents mentioned problems related to the differences in the organization of students' interaction in a distance course, characteristics of the rating evaluation system, and the asynchronous activities of the students, i.e. not directly related to the non-formal education. In addition, the named technical problems (speed and quality of the Internet connection) and the organization of work (excessive load on the job). We can consider the main drawback of the actual non-formal education as lack of officially recognized certificates and certification (standardization).

Disadvantages identified during the theoretical study of non-formal education were confirmed only in part in the study of focus groups' discussions. Among the drawbacks of non-formal education, was that the respondents did not mention such aspects as the lack of interrelation between the different courses and their short duration.

Improving the use of non-formal education for skill improvement

The discussion held in focus groups revealed some basic ways to improve the use of non-formal education for skill improvement: raising the status of non-formal education; accounting competence improvement results in non-formal education, creation of associations of the non-formal education organizers and the certification of courses on their base.

Table 3: Statements and evaluations of focus groups: Improving the use of non-formal education for skill improvement

Respondent	*Statement*	*Ways to improve*
FG1S1	It is necessary to decide on how to take into account the fact that teachers improve their qualification not only on the basis of the Institute of Advanced Studies, but also in various non-government courses and seminars, which could be included in a cumulative system, because the benefits of such education are evident	Non-formal education to be included in the cumulative skill improvement system
FG1S2	It is necessary to decide on the issuance of official documents – certificates or diplomas.	Course certification
FG1S3	A tutor should have more influence on the activity of students, encouraging those who do the work according to the schedule	Encouragement and support
FG1S5	A tutor should provide a critical evaluation of the student's work	Evaluation
FG2S4	More resources are needed for a better completion of the tasks – screen-casts, models, step by step instructions, but all of them should be clearly structured and understandable	Methodological support
FG2S5	Assessment must be individual – group work and self-assessment did not accurately reflect the contribution of each member to the completion of the group tasks	Evaluation system
FG3S5	All non-formal education programmes provide practical skills and are not supported by any document, in fact, they are not (formally) considered as skill improvement. I think certain network communities should be entitled to issue official certificates	Courses certification
FG3S6	There is a need for courses focused on the staff development of a specific school – problems in different schools may differ significantly	Learning content

4. Conclusions

The results of the discussions held in the focus groups has shown that the experience of group training can benefit the students in many ways – from behavioural skills in an online training environment, to the accumulation of cognitive, activity-related and personal competencies. The benefits of non-formal education are different in nature. First of all, it allows you to get the valuable experience which will be developed during the practical professional activity. According to the participants of the study, it is impossible to use distance learning technologies efficiently in the capacities of tutor or course author without the experience of participation as a student. The skills acquired in the process of informal learning with the use of distance forms are valuable not only in themselves, but also as a model of student's activity. The study also found that participants experienced certain discomforts caused by the need to evaluate other students and be evaluated, as well as the unequal performance of individual students.

The analysis of group discussions found no significant differences in the evaluation of the advantages and disadvantages of non-formal education from different countries, making it possible to draw a number of important conclusions. Firstly, the respondents' experience is international in nature and with certain restrictions can apply to all participants of non-formal education in both countries (Russia and Ukraine). Secondly, the postgraduate pedagogic education of Russia and Ukraine in some respects have more similarities than differences, resulting in the assessments of respondents of the problem studied, as well as the use of Russian resources by Ukrainian respondents and the participation of teachers of both countries in the international training projects. The results showed that the mere existence of a wide choice of training courses in non-formal education is not the key incentive for teaching staff to participate actively. Thirdly, an analysis of statements makes it possible to identify the key factors influencing the respondents' choices: matching personal educational needs, compliance with new conditions of professional activity; compliance with current trends in the development of the education system. Besides, certain constraints have been identified which include: lack of official recognition of learning results; technical problems (low quality Internet connection); excessive workload on teachers in the workplace. These problems were reported by respondents of all three focus groups.

Constraints and prospects for future research

Our study has certain limitations relating to the study of a particular situation, the number of focus groups and respondents, so that the results of the work on the project are difficult to project on a situation where other categories of professionals are trained with the use of non-formal education. Since only a few training courses intended for the improvement of information and communication competence were used as an example, the possibilities of disseminating the results to all similar courses and platforms is seriously limited. Subsequent research should focus on the study of the situation in various online resources and in different geographic regions, which will confirm

certain results of this study. The focus groups' composition can be changed in order to study the opinions of other participants in the process of non-formal education (tutors, course and master-classes developers), as well as their attitude to the place and role of non-formal education in a skill improvement system, in order to obtain objective information, taking into account different viewpoints. In addition, an important aspect of the problem under consideration is to determine the optimal ratio between formal and non-formal education in improving the level of professional competence. Given such limitations in this study, we have been able to focus on the most important problems of evaluating the use of non-formal education in the process of improving the teaching staff's professional competence.

Dr. Svitlana Ivashnova

Izboljšanje poklicnih kompetenc učnega osebja v okviru neformalnega izobraževanja

Izboljšanje poklicnih kompetenc učiteljev v praksi ni zgolj plod usposabljanja v pedagoško-izobraževalni podiplomski ustanovi ali ustanovah za usposabljanje učiteljev, ki poteka vsakih pet let, kot to zahteva zakonodaja v nekaterih državah nekdanje Sovjetske zveze (na primer v Ukrajini, Belorusiji, Kazahstanu in Rusiji). Učno osebje svoje kompetence najbolj učinkovito razvija samostojno v okviru svojega dela, s samoizobraževanjem in sodelovanjem v metodološkem delu in s formalnim in priložnostnim (neuradnim) izobraževanjem. Formalno izobraževanje, ki ga številni viri opredeljujejo kot hierarhično strukturiran, kronološko urejen in certificiran izobraževalni sistem (Smith, 2001), zaznamuje obstoj standardiziranih specializiranih programov in izobraževalnih ustanov.

Istočasno s formalnim izobraževanjem se je sredi dvajsetega stoletja razmahnilo tudi neformalno izobraževanje, ki se običajno dojema kot katera koli organizirana izobraževalna dejavnost zunaj ustaljenega formalnega sistema (Smith M.K., 2001). Cilji formalnega izobraževanja so običajni praktični, koristni in prvenstveno izobraževalne narave (Samlowski M., 2011), usposabljanje pa ne zajema pridobitve uradnega dokumenta (potrdila ali diplome). Tako formalno kot neformalno izobraževanje zaznamujeta določeno časovno obdobje. Priložnostno (neuradno) izobraževanje je dejansko vseživljenjski proces, v katerem vsak posameznik pridobiva veščine in znanje iz vsakodnevnih izkušenj in na podlagi izobraževalnega vpliva okolja – družine in sosedov, službe in prostega časa, trgov, knjižnic in množičnih medijev. Razne značilnosti neformalne izobrazbe so bile obravnavane že v številnih delih (npr. Colardyn D., 2001; Colley H., 2003; Davis B.G., 1993; Fordham P.E., 1993 in drugi). Nekateri (Smith M.K., 2001) omenjajo, da se neformalno izobraževanje uporablja predvsem v državah tretjega sveta z namenom izkoreninjanja nepismenosti, v zdravstveno-izobraževalnih programih, ki jih izvajajo neprofitne organizacije ipd. Kljub temu pa obstaja množica programov za izboljšanje poklicnih kompetenc.

Neformalno izobraževanje se obravnava kot del "vseživljenjskega učenja," kar se odraža v dokumentih UNESCA in Mednarodnem standardu ISO 29990: 2010. Learning services for non-formal education and training – Basic requirements for service providers (slov. Storitve na področju učenja za neformalno izobraževanje in usposabljanje – temeljne zahteve za ponudnike storitev). Uporaba tega dokumenta v ruskem izobraževalnem sistemu ter v vseh postsovjetskih državah je zaznamovana s številnimi lastnostmi, ki se nanašajo na dejansko vsebino "neformalnega izobraževanja" in koncepta "usposabljanja," katerih uporaba v postsovjetski resničnosti nima tako dolge zgodovine (Skrynnik I.K., 2006; Popova I.S., 2011; Pankina G.V., Guseva T.V., 2011, in drugi).

Primerjalna analiza formalnega, neformalnega in priložnostnega izobraževanja (Smith M.K., 2001) priča o obstoju določenih podobnosti in izpostavlja nekatere razlike glede številnih značilnosti, povezanih z organizacijo izobraževanja, njegovimi cilji, vsebino, kadrovsko zasedbo ipd. Ustrezna opredelitev izraza "priložnostno izobraževanje" v standardu ISO 29990: 2010 temelji na načelu "a contrario" (Pankina G.V., Guseva T.V., 2011), ki nas privede do zaključka, da so ti koncepti z znanstvenega stališča nezadostno diferencirani.

Z vidika opredeljenega področja raziskave je bilo ugotovljeno, da je metoda ciljnih skupin najboljša raziskovalna metoda in najbolj primerna za raziskovalne cilje na podlagi razlogov, navedenih v več člankih (Hussey and Hussey, 1997; Dick, 1997; Krueger, 1994; Morgan, 1997; Sherraden, 1995; Punch, 1998; Law et al., 1998; Davis, 2000; Linville et al., 2003). Ciljne skupine (Hussey and Hussey, 1997, str. 155) se v glavnem uporabljajo za "zbiranje podatkov, povezanih z občutki in mnenji skupine ljudi v podobni situaciji." Raziskava je zajemala tri ciljne skupine. Ciljne skupine so bile sestavljene na prostovoljni podlagi, in sicer iz udeležencev različnih neformalnih tečajev (CS1 so sestavljali predstavniki iz Ukrajine, CS2 iz Rusije, CS3 iz obeh držav).

Večina respondentov je odgovorila, da radi sodelujejo v neformalnem izobraževanju s pomočjo tehnologij za učenje na daljavo, ko se počutijo sproščeno in samozavestno. Večina respondentov meni, da jim je udeležba v neformalnem učenju na daljavo pomagala, da uspešno uporabljajo izkušnje, ki so jih pridobili v svoji karieri. Poleg tega pripomore udeležba v neformalnem izobraževanju s pomočjo tehnologij za učenje na daljavo odpraviti psihološke ovire pri učiteljih, ki imajo s poučevanjem že bogate izkušnje, in bi se utegnile pojaviti v situacijah, ko se naučijo nekaj, kar je zanje osebno novo, a kar drugi člani skupine že dobro poznajo.

Večina respondentov je omenjala težave, povezane z razlikami v organizaciji interakcije s študenti v tečajih na daljavo, z značilnostmi ocenjevanja sistema za ovrednotenje, asinhrone dejavnosti študentov, tj. tiste, ki niso neposredno povezane z neformalnim izobraževanjem. Slabosti, ki so bile ugotovljene v teoretični raziskavi neformalnega izobraževanja, smo s študijo pogovorov ciljnih skupin potrdili le delno. Med pomanjkljivostmi neformalnega izobraževanja respondenti niso omenili vidikov, kot so pomanjkanje povezanosti med različnimi tečaji in kratko trajanje tečajev.

Pogovori v ciljnih skupinah so razkrili osnovne načine, kako izboljšati uporabo neformalnega izobraževanja za krepitev veščin: izboljšanje statusa neformalnega izobra-

ževanja, upoštevanje rezultatov izboljšanja kompetenc v neformalnem izobraževanju, ustvarjanje združenj za ponudnike neformalnega izobraževanja in certificiranje tečajev v njihovem sklopu.

Rezultati pogovorov v ciljnih skupinah so pokazali, da lahko izkušnje iz skupinskega usposabljanja študentom koristijo na več načinov – od vedenjskih veščin v spletnem okolju za usposabljanje do pridobivanja kognitivnih, z dejavnostjo povezanih in osebnih kompetenc. Analiza skupinskih pogovorov ni našla bistvenih razlik v ovrednotenju prednosti in slabosti neformalnega izobraževanja glede na državo, kar nam omogoča številne pomembne zaključke. Prvič: izkušnje respondentov so bile mednarodne narave in bi lahko z nekaterimi omejitvami veljale za vse udeležence neformalnega izobraževanja v obema državama (Rusiji in Ukrajini). Drugič: podiplomsko pedagoško izobraževanje v Rusiji in Ukrajini ima v določenih pogledih več podobnosti kot razlik, kar se kaže v ocenah respondentov raziskovanega problema, kakor tudi v uporabi ruskih virov ukrajinskih respondentov ter udeležbi učiteljev iz obeh držav v mednarodnih projektih za usposabljanje. Rezultati so pokazali, da zgolj obstoj širokega nabora tečajev v okviru neformalnega izobraževanja ni ključna spodbuda, da bi učno osebje dejavno sodelovalo. Tretjič: na podlagi analize izjav je bilo mogoče ugotoviti ključne dejavnike, ki vplivajo na odločitve respondentov: upoštevanje osebnih izobraževalnih potreb, skladnost z novimi pogoji poklicne dejavnosti, upoštevanje trenutnih trendov v razvoju izobraževalnega sistema. Poleg tega smo ugotovili nekaj omejitev, ki vključujejo: pomanjkanje uradnega priznavanja učnih rezultatov, tehnične težave (slaba kakovost internetne povezave) in preobremenjenost učiteljev na delovnem mestu. O teh težavah so poročali respondenti iz vseh treh ciljnih skupin.

Omejitve in možnosti za prihodnje raziskave. Spremeniti se lahko sestavo ciljnih skupin z namenom preučevanja mnenj drugih udeležencev v procesu neformalnega izobraževanja (mentorji, oblikovalci tečajev in nadaljevalnih tečajev) ter njihovega odnosa do mesta in vloge neformalnega izobraževanja v sistemih krepitve veščin, s čimer bi pridobili objektivne informacije ob upoštevanju različnih stališč. Poleg tega je pomemben vidik obravnavanega problema določitev optimalnega razmerja med formalnim in neformalnim izobraževanjem pri izboljšanju ravni poklicne kompetence. Z ozirom na tovrstne omejitve v tej študiji smo se lahko osredotočili na najbolj pereče težave ocenjevanja uporabe neformalnega izobraževanja v procesu izboljšanja poklicnih kompetenc učnega osebja.

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