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Predviđanje ishoda učenja na temelju pristupa učenju studenata filoloških studijskih grupa[1]

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Apstrakt *U kontekstu težnji za unapređenjem kvaliteta nastave i studija, brojna istraživanja bave se razlikama u načinu na koji studenti pristupaju učenju, budući da te razlike mogu da doprinesu ostvarenju ishoda učenja u značanoj meri. Pristupi učenju predstavljaju kombinaciju motiva i strategija koje studenti koriste prilikom učenja, i najčešće se dele na Površinski i Dubinski pristup. Rezultati ranijih istraživanja o odnosu između pristupa učenju i ishoda učenja nisu jednoznačni, te je cilj ovog istraživanja ispitivanje odnosa između pristupa učenju studenata i njihovog akademskog postignuća, kao i njihovog zadovoljstva kursom. U istraživanju je učestvovalo 180 studenata filoloških studijskih grupa, a korišćen je Revidirani dvofaktorski upitnik o pristupima učenju studenata (The Revised Two Factor Study Process Questionnaire: R-SPQ-2F). Dobijeni rezultati pokazuju da Površinski pristup učenju negativno predviđa uspeh na studijama, dok nije utvrđena povezanost između Dubinskog pristupa i akademskog postignuća studenata. S druge strane, utvrđena je pozitivna povezanost zadovoljstva kursom sa Dubinskim pristupom učenju, kako u domenu intrinzičke motivacije tako i u domenu površinske strategije, kao i negativna povezanost sa Površinskim pristupom učenju u domenu instrumentalne motivacije. Dobijeni rezultati značajni su za nastavnu praksu, posebno u cilju unapređenja nastave i ostvarenja kognitivnih i afektivnih ishoda učenja. Takođe, nalazi i zaključci predstavljaju smernice za pružanje podrške studentima za primenu Dubinskog pristupa i strategija u procesu učenja, kao i za inhibiranje Površinskog pristupa učenju.*

Ključne reči: *pristupi učenju, ishodi učenja, Površinski i Dubinski pristup, akademsko postignuće, zadovoljstvo kursom.*

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Uvod

Velike promene u sklopu visokog obrazovanja koje se odnose, između ostalog, na sve veću heterogenost studentske populacije, na usmerenost na ishode učenja i na kompetencije studenata, praćene su težnjom za unapređenje i održavanje kvaliteta nastavnog rada. Otuda su razumevanje procesa učenja u visokom obrazovanju i utvrđivanje činilaca koji mogu poboljšati kvalitet učenja i nastave bili predmet mnogih istraživanja tokom proteklih nekoliko decenija. U okviru teorijskog proučavanja pristupa učenju studenata (*The Student Approaches to Learning* – SAL) *ispitivane su razlike u načinu na koji studenti pristupaju učenju*, te su istraživani odnosi između različitih grupa varijabli za koje se pretpostavljalo da su povezane s usvajanjem specifičnih pristupa učenju (Biggs & Tang, 2011; Entwistle et al., 2006; Gijbels et al., 2009; Trigwell & Prosser, 2020; Uiboleht et al., 2018).

Istraživanja varijacija u procesu učenja studenata započeta su još sedamdesetih godina 20. veka, kada je u kvalitativnom istraživanju (Marton & Säljö, 1976, 1997) studentima dodeljen zadatak da pročitaju akademski tekst, uz najavljenu raspravu o njegovom sadržaju. Analizirajući podatke dobijene putem intervjua, ovi autori su uočili da studenti, u skladu sa sopstvenim namerama, usvajaju različite načine procesiranja informacija: površinsko i dubinsko procesiranje, što su potvrdila mnoga kasnija istraživanja (Biggs et al., 2001; Biggs & Tang, 2011; Entwistle & Ramsden, 1983; Fryer & Ginns, 2017; Ramsden, 2003). Teorijsko stanovište pristupa učenju, kao metateorija za konceptualizovanje nastave i učenja, dalje se razvijalo u dva smera: jedan smer odnosio se na sprovođenje specifične varijante intervjua, odnosno na fenomenografiju, a drugi su činile konstruktivistička i sistemska teorija pristupa učenju (Biggs et al., 2001).

Teorijske osnove istraživanja

Pristupe učenju Bigz (Biggs, 1987a) određuje kao kombinaciju motiva i strategija koje studenti koriste kada prilaze nekom zadatku učenja. Drugim rečima, pristupi učenju sastoje se od motiva studenata da se angažuju u nekom zadatku učenja i strategija koje su usvojili kako bi realizovali svoje namere. Prema mišljenju ovog autora (Biggs, 1993; Biggs et al., 2001), pristupi učenju ne predstavljaju individualne osobine studenata, već su deo ukupnog sistema u koji je smešteno obrazovanje, što je predstavljeno modelom *Preduslov-Proces-Produkt* (3P). Unutar ovog modela se karakteristike studenta, faktori vezani za kontekst nastave, aktivnosti fokusirane na učenje i ishodi učenja nalaze u međusobnoj interakciji, formirajući dinamički sistem. *Preduslovi* predstavljaju karakteristike studenta (kao što su prethodno znanje, sposobnosti, preferirani pristup učenju i sl.) s jedne strane, i faktori vezani za kontekst nastave (kao što su nastavni sadržaji, nastavne metode, metode ocenjivanja, institucionalna klima i sl.) s druge strane. Ove dve grupe faktora, koje su u međusobnoj interakciji, utiču na *proces* učenja (aktivnosti fokusirane na učenje), to jest na aktuelni pristup učenju. Taj pristup učenju zauzvrat određuje *produkt*, koji čine ishodi učenja: kvantitativni (činjenice, veštine) i kvalitativni (struktura, transfer), kao i kontekstualni pristup učenju. Svaki od navedenih pojedinačnih faktora

utiče na bilo koji drugi faktor, tako da se, na primer, studentski preferirani pristupi učenju prilagođavaju određenom kontekstu ili sadržaju kursa, kao i ishodu učenja (Biggs et al., 2001). Dakle, prema originalnoj konceptualizaciji, pristupi učenju ne zavise samo od individualnih karakteristika studenata, već su posledica interakcije karakteristika studenata i kontekstualnih činilaca s jedne strane, i procesa učenja i njegovih produkata s druge strane.

U literaturi je najčešća podela aktuelnih pristupa učenju na Površinski i Dubinski (Biggs et al., 2001; Kember et al., 2008; Marton & Säljö, 1997). Površinski pristup učenju karakteriše instrumentalna motivacija: namera je da se brzo ispune postavljeni zahtevi uz minimalna zalaganja. Zbog toga ovaj pristup odlikuje korišćenje sposobnosti mišljenja na nižim kognitivnim nivoima, i to u situacijama kada je potrebno angažovanje viših kognitivnih procesa. Strategije učenja odnose se na učenje napamet, učenje činjenica kao izolovanih jedinica informacija, kao i učenje samo onoga što je najpotrebnije. Budući da takvo učenje ometa dublje razumevanje sadržaja, pristupanje akademskom zadatku izaziva negativna osećanja: anksioznost, cinizam i dosadu (Biggs, 1987a; Biggs & Tang, 2011). Unutar idealnog sistema nastave/učenja, od studenata se pak očekuje da smisleno učestvuju u procesu učenja, to jest da se angažuju u učenju usmerenom ka razumevanju, što ujedno predstavlja i odliku Dubinskog pristupa učenju (Biggs et al., 2001). Dubinski pristup učenju karakteriše intrinzička (unutrašnja) motivacija zasnovana na interesovanjima i potrebom za sticanjem kompetencija, odnosno na potrebi pojedinca da se smisleno angažuje u radu na zadatku. Otuda strategije učenja podržavaju učenje s razumevanjem: obraća se pažnja na glavne ideje i principe ili na njihovu uspešnu primenu, traga se za informacijama i nove ideje se povezuju s prethodnim znanjima. Kada se koristi Dubinski pristup učenju, podstiču se pozitivne emocije: interesovanja, osećaj važnosti, izazov i radost (Biggs, 1987a; Biggs & Tang, 2011).

Značajno je napomenuti da neki istraživači razlikuju i treći pristup učenju: pristup usmeren ka postignuću ili Strategijski pristup, koji se odnosi na efektivno korišćenje vremena i prostora u cilju postizanja visokih ocena (Biggs et al., 2001; Entwistle et al., 2000). Odlike ovog pristupa su: orijentacija ka postignuću, efikasno upravljanje vremenom, organizacija učenja, raspoređivanje napora. Ipak, po mišljenju većine autora, pristupi učenju najbolje se opisuju u terminima dvaju faktora: Površinskog i Dubinskog (Biggs et al., 2001; Kember & Leung, 1998a; Wong et al., 1996; Zeegers, 2004). Prema nekim shvatanjima (Wong et al., 1996), pristup usmeren ka postignuću može da, u zavisnosti od sadržaja kursa i zahteva nastavnika, bude povezan s Površinskim pristupom u jednom kontekstu, a s Dubinskim pristupom u drugom kontekstu. Druga istraživanja (Zeegers, 2002) pokazuju da se pristup usmeren ka postignuću može smatrati komponentom Dubinskog pristupa učenju.

Budući da pristupi učenju nisu definisani kao stabilne karakteristike studenata (Biggs et al., 2001; Nijhuis et al., 2005), odnosno da student može da usvoji jedan pristup u određenom kontekstu, a drugi pristup u drugom kontekstu (Guo et al., 2017), istraživanja su se usmeravala na ispitivanje međusobnih interakcija ličnih karakteristika studenata, njihove percepcije sredine za učenje i konteksta u kojem se učenje odvija. U tom okviru su

se istraživali činioci koji bi se mogli dovesti u vezu sa specifičnim pristupima učenju, kao, na primer, nastavne metode (Nijhuis et al., 2005; Struyven et al., 2006), pristupi nastavi univerzitetskih nastavnika (Trigwell et al., 1999), načini ocenjivanja (Baeten et al., 2008; Gijbels & Dochy, 2006), disciplinarne varijacije (Kember et al., 2008; Parpala et al., 2010), karakteristike studenata (Chamorro-Premuzic et al., 2007; Lake & Boyd, 2015), uverenja studenata koja se odnose na nastavu i učenje (Mirkov, 2021), načini opažanja sredine u kojoj se odvija proces nastave – percepcija opterećenja nastavnim zahtevima i percepcija kvaliteta kursa (Diseth, 2007; Kember & Leung, 1998b; Richardson et al., 2007; Struyven et al., 2006; Trigwell & Prosser, 2020), kao i emocije (Trigwell et al., 2012). Takođe, u mnogim studijama su ispitivani odnosi između pristupa učenju i indikatora ishoda učenja, kao što su akademsko postignuće i zadovoljstvo kursom (Guo et al., 2017; Marinović, 2015; Richardson et al., 2012; Trigwell et al., 2013).

Opsežna metaanalitička studija kvantitativnih istraživanja korelata akademskog postignuća (Richardson et al., 2012) dokazuje da pristupi učenju mogu značajno da utiču na akademsko postignuće. Ta studija upućuje na značajnu negativnu ali slabu povezanost između Površinskog pristupa učenju i akademskog postignuća operacionalizovanog preko prosečne ocene. Utvrđena je i značajna pozitivna ali slaba povezanost između Dubinskog i Strategijskog pristupa učenju i akademskog postignuća. Nalazi pojedinačnih istraživanja takođe ukazuju na značajnu pozitivnu ali slabu povezanost Dubinskog pristupa učenju i akademskog postignuća, kao i na značajnu negativnu povezanost Površinskog pristupa učenju i akademskog postignuća (Diseth, 2003; Hazel et al., 2002; Herrmann et al., 2016).

Ipak, rezultati istraživanja relacija između pristupa učenju i akademskog postignuća nisu jednoznačni. S jedne strane, rezultati nekih studija (Diseth & Martinsen, 2003; Diseth, 2007; Gijbels et al., 2005; Herrmann et al., 2017; Karagiannopoulou & Milienos, 2014; Trigwell et al., 2013) ne upućuju na postojanje značajnih korelacija između Dubinskog pristupa učenju i akademskog postignuća. S druge strane, mnogi nalazi ukazuju na značajne pozitivne korelacije između Dubinskog pristupa učenju i akademskog postignuća, dok ispitivanja korelacija između Površinskog pristupa učenju i akademskog postignuća daju manje jasne rezultate (Cano et al., 2018; Lizzio et al., 2002; Maciejewski & Merchant, 2015). Konačno, neka istraživanja (Gijbels et al., 2005) ne pronalaze povezanost pristupa učenju s akademskim postignućem.

U tom okviru, relacije između pristupa učenju i akademskog postignuća su vrlo složene, usled dejstva mnogih drugih faktora (Trigwell & Prosser, 2020). Tako se objašnjenje za nekonzistentne rezultate istraživanja najpre pronalaze u varijacijama konteksta nastave i učenja (Zakariya & Massimiliano, 2022). Na primer, nalazi o skromnoj povezanosti, kao i nepostojanju povezanosti između Dubinskog pristupa učenju i akademskog postignuća, objašnjavaju se sistemom ocenjivanja u visokom obrazovanju unutar kojeg se ne zahtevaju i ne nagrađuju uvek ishodi učenja visokog kvaliteta (Biggs, 1987a; Herrmann et al., 2017; Nelson Laird et al., 2008). S obzirom na postojanje moderatorskog efekta načina procenjivanja znanja na odnos između pristupa učenju i ishoda učenja, u istraživanjima je veoma važno specifikovati da li se kao ishod učenja meri razumevanje, postignuće ili zadovoljstvo studenata (Lizzio et al., 2002).

Kada je reč o ishodima učenja, pored akademskog postignuća kao kognitivnog ishoda, govori se i o zadovoljstvu studenata kursom i njihovoj samoproceni razvoja generičkih veština, kao afektivnim ishodima učenja (Guo et al., 2017). Ranija istraživanja upućuju na to da studenti s usvojenim Dubinskim pristupom učenju izražavaju veće zadovoljstvo kursom (Karagiannopoulou & Christodoulides, 2005; Ramsden, 2003). Novija istraživanja (Guo et al., 2017) utvrđuju da pristupi učenju, kao medijatorske varijable, posreduju između percepcije okruženja za učenje i ishoda učenja, odnosno da Dubinski pristup učenju pozitivno predviđa studentsko zadovoljstvo kursom. Nalazi pojedinih istraživanja (Karagiannopoulou & Christodoulides, 2005; Marinović, 2015) delimično pokazuju i da se Površinski pristup učenju nalazi u negativnoj korelaciji sa zadovoljstvom studenata kursom; što student ima više razvijene površinske motive i površinske strategije u konkretnoj situaciji učenja, to će imati manje zadovoljstvo kursom. Mada je logično očekivati da će studenti koji usvajaju Dubinski pristup učenju, odnosno koji imaju više razvijene intrinzičke motive, imati i izraženije pozitivne emocije (Bye et al., 2007; Trigwell & Prosser, 2020), neka istraživanja (Lizzio et al., 2002) ne potvrđuju veze između pristupa učenju i studentskog zadovoljstva kursom. Konačno, iako je važno utvrditi uticaj pristupa učenju na afektivna iskustva studenata, pojedini autori (Lizzio et al., 2002) naglašavaju da relacije između pristupa učenju i zadovoljstva kursom treba oprezno tumačiti, budući da zadovoljstvo kursom i procesi koji su s tim povezani, kao, na primer, interesovanja za zadatak ili za kurs, mogu da uzrokuju pristupe učenju studenata koliko mogu i da budu njihov rezultat.

Metod

Ciljevi istraživanja

Budući da nalazi dosadašnjih istraživanja u kojima su ispitivane relacije pristupa učenju studenata s ishodima učenja nisu u potpunosti jednoznačni (Gijbels et al., 2005; Guo et al., 2017; Hazel et al., 2002; Lizzio et al., 2002; Trigwell et al., 2013), prvi cilj aktuelnog istraživanja odnosi se na ispitivanje relacija između pristupa učenju studenata i njihovog akademskog postignuća merenog preko prosečne ocene na studijama. Drugi cilj istraživanja podrazumevao je ispitivanje relacija između pristupa učenju studenata i njihovog zadovoljstva onim kursom iz kojeg su, u trenutku sprovođenja istraživanja, slušali nastavu. Preciznije rečeno, u slučaju oba naznačena cilja, razmatran je prediktivni doprinos modela koji objedinjuje Dubinski i Površinski pristup učenju u objašnjenju varijanse akademskog postignuća, odnosno zadovoljstva konkretnim kursom, kao i parcijalni doprinos svake od prediktorskih varijabli.

Uzorak i procedura istraživanja

Istraživanjem je obuhvaćeno 180 studenata filoloških studijskih grupa na Filozofskom fakultetu Univerziteta u Novom Sadu, od čega je 85% ispitanika ženskog pola.

Svi ispitanici su bili studenti osnovnih akademskih studija, a srednja vrednost uspeha na studijama iznosila je *M*=8,62; *SD*=0,66. Odluka o homogenosti uzorka u odnosu na studijsko usmerenje ima uporište u shvatanju da pristupi učenju ne predstavljaju individualne osobine studenata, već su deo ukupnog sistema u kom je pozicionirano obrazovanje, a koji je, između ostalih faktora, određen i faktorima u vezi sa kontekstom nastave (Biggs, 1993; Biggs et al., 2001). Imajući u vidu činjenicu da se faktori koji se tiču konteksta nastave, poput nastavnih sadržaja i nastavnih metoda, drastično razlikuju od jednog do drugog područja znanja, istraživanjem su obuhvaćeni samo studenti filoloških grupa kod kojih su pristupi učenju determinisani vrlo sličnim faktorima u vezi sa nastavom. Osim toga, zbog namere ispitivanja zadovoljstva konkretnim kursom, činilo se osnovanim ispitivati ovu varijablu samo u kontekstu filoloških nauka, kako bi se postigao što viši stepen uniformnosti u njenom koncipiranju.

Aktuelno istraživanje predstavlja deo opsežnije studije o relacijama između pristupa nastavi i pristupa učenju u visokom obrazovanju. Prikupljanje podataka obavljeno je u papir-olovka formi, tokom decembra 2021. godine i januara 2022. godine, na nastavi kursa u okviru kojeg su studenti procenjivali vlastite pristupe učenju. Pre administriranja upitnika, koje je trajalo oko 10-15 minuta, ispitanicima su date instrukcije o načinu davanja odgovora, kao i informacije o ciljevima i značaju istraživanja. Ispitanicima je posebno naglašeno da je učešće u istraživanju anonimno i dobrovoljno, te da ne uključuje nikakvu vrstu nadoknade. Rukovodeći se u celosti etičkim principima u sprovođenju istraživanja, ispitanicima je jasno predočena i mogućnost odustajanja od ispitivanja u bilo kom momentu.

Instrumenti

Pristupi učenju studenata. U ispitivanju pristupa učenju korišćen je *Revidirani dvofaktorski upitnik o pristupima učenju studenata* (*The Revised Two Factor Study Process Questionnaire*: R-SPQ-2F, Biggs et al., 2001). Tokom godina, originalna verzija ovog instrumenta (Biggs, 1978) revidirana je u nekoliko navrata (Biggs, 1987b; Biggs et al., 2001), što je rezultiralo konstrukcijom 20-ajtemskog upitnika (R-SPQ-2F), koji sadrži dve glavne skale od po 10 ajtema za Dubinski pristup, odnosno Površinski pristup, kao i četiri subskale od po 5 ajtema: intrinzička motivacija („*Smatram da mi učenje može pružiti osećaj dubokog ličnog zadovoljstva*"), dubinska strategija („*Smatram da moram dosta da radim na nekoj temi da bih mogao/mogla da donesem sopstvene zaključke pre nego što budem zadovoljan/zadovoljna*"), instrumentalna motivacija („*Moj cilj je da položim ispit uz što je moguće manje rada*") i površinska strategija („*Ozbiljno pristupam učenju samo onih nastavnih sadržaja koji se izlažu na času ili su naznačeni u programu/opisu kursa*") (Biggs et al., 2001). Upitnik sadrži petostepenu skalu odgovora Likertovog tipa.

Zadovoljstvo konkretnim kursom. Ispitivanje opšteg zadovoljstva kursom u okviru kojeg su ispitanici u trenutku sprovođenja istraživanja slušali nastavu, obavljeno je posredstvom stavke koja je glasila: „*Generalno sam zadovoljan/zadovoljna kvalitetom ovog kursa*". Ispitanici su izražavali stepen slaganja sa datom stavkom na petostepenoj skali Likertovog tipa.

Rezultati

Deskriptivni pokazatelji i interkorelacije merenih konstrukata

Inspekcijom Tabele 1 uočava se da varijable obuhvaćene istraživanjem imaju normalnu raspodelu skorova prema vrednostima koeficijenata zakošenosti i spljoštenosti distribucije (-1 <*Sk*, *Ku* <1), koje su u skladu sa standardnim preporukama za društveno-humanistička istraživanja (Tabachnick & Fidell, 2021). Iz iste tabele je moguće zaključiti da sve korišćene mere pristupa učenju imaju zadovoljavajuće koeficijente pouzdanosti (Loewenthal, 2004) po tipu interne konzistencije (α>0,60). Osim toga, srednje vrednosti na dvema glavnim skalama pristupa učenju upućuju na viši stepen izraženosti Dubinskog u odnosu na Površinski pristup, dok se u slučaju subskala motivacije i strategija konstatuje prominentnost intrinzičke motivacije i dubinske strategije.

Tabela 1
Deskriptivni pokazatelji istraživačkih varijabli

	M	*SD*	*Skewness*	*Kurtosis*	*α*
Dubinski pristup učenju	31.79	7.39	-0.03	-0.09	.82
Površinski pristup učenju	28.27	8.45	0.19	-0.48	.85
Intrinzička motivacija	16.11	4.20	-0.22	-0.35	.73
Dubinska strategija	15.73	3.86	0.15	-0.13	.67
Instrumentalna motivacija	12.99	4.59	0.40	-0.32	.76
Površinska strategija	15.23	4.49	0.09	-0.77	.72
Akademsko postignuće	8.62	0.66	0.28	-0.55	/
Zadovoljstvo kursom	4.26	0.87	0.18	0.36	/

Interkorelacije istraživačkih varijabli ukazuju na visok stepen uzajamne povezanosti motivacije i strategija u okviru oba pristupa učenju, koji uzajamno ostvaruju umerenu negativnu korelaciju. Značajnu korelaciju negativnog predznaka sa akademskim postignućem ostvaruje samo Površinski pristup, odnosno instrumentalna motivacija i površinska strategija. Sa druge strane, zadovoljstvo kursom je u pozitivnoj korelaciji sa Dubinskim pristupom, kako u domenu intrinzičke motivacije, tako i u domenu površinske strategije, dok se u slučaju povezanosti sa Površinskim pristupom registruje negativna korelacija, i to samo u domenu instrumentalne motivacije.

Tabela 2
Korelacije istraživačkih varijabli

	1	2	3	4	5	6	7
(1) Dubinski pristup učenju	-						
(2) Površinski pristup učenju	-.39**	-					
(3) Intrinzička motivacija	.93**	-.39**	-				
(4) Dubinska strategija	.91**	-.32**	.68**	-			
(5) Instrumentalna motivacija	-.38**	.93**	-.39**	-.30**	-		
(6) Površinska strategija	-.34**	.92**	-.34**	-.29**	.73**	-	
(7) Akademsko postignuće	.11	-.30**	.09	.11	-.29**	-.28**	-
(8) Zadovoljstvo kursom	.30**	-.23*	.35**	.20*	-.30**	-.12	-.05

Napomena. *p <.05, ** p <.01.

Predikcija akademskog postignuća

Za svrhu realizacije prvog cilja istraživanja primenjen je postupak standardne višestruke regresije. Na osnovu relevantnih vrednosti u Tabeli 3, moguće je ustanoviti da je prediktivni model koji uključuje Dubinski i Površinski pristup učenju u celini statistički značajan, te da objašnjava oko 9% varijanse u akademskom postignuću. Drugim rečima, oko 9% varijacija u prosečnim ocenama studenata filoloških grupa moguće je objasniti razlikama u Dubinskom i Površinskom pristupu učenju. Na osnovu vrednosti parcijalnih standardizovanih koeficijenata konstatuje se da samo Površinski pristup ostvaruje značajan pojedinačni doprinos u objašnjenju varijanse akademskog postignuća. No, ukoliko obratimo pažnju na negativan predznak značajnog beta koeficijenta, moguće je zaključiti da viši nivo zastupljenosti Površinskog pristupa učenju ostvaruje relaciju sa nižim akademskim postignućem, i obratno.

Prediktivni model koji je uključivao motivaciju i strategije u okviru Dubinskog i Površinskog pristupa učenju odnosno predstavljao složaj četiri prediktorske varijable (intrinzička motivacija, dubinska strategija, instrumentalna motivacija, površinska strategija), nije se pokazao značajnim na nivou parcijalnog doprinosa pojedinačnih prediktora (Tabela 1 u Prilogu).

Tabela 3
Predikcija akademskog postignuća na osnovu Dubinskog i Površinskog pristupa učenju

Ocena modela kao celine	Prediktorske varijable	*β*	*t*
$F(2, 139) = 7.18^{**}$ $R^2 = .09$	Dubinski pristup učenju	-.04	-0.39
	Površinski pristup učenju	-.32	-3.57**

Napomena. F – vrednost *F*-testa; R^2 – koeficijent determinacije; *β* – parcijalni standardizovani regresioni koeficijenti; *t* – vrednost *t*-testa; $^{**}p < .01$.

Predikcija zadovoljstva kursom

Rukovodeći se relacijama među varijablama naznačenim u okviru drugog istraživačkog cilja, ponovo je sprovedena standardna višestruka regresija, koja je za prediktore imala Dubinski i Površinski pristup učenju, dok je zadovoljstvo kursom figurisalo u svojstvu kriterijumske varijable. Vrednost *F* testa sugeriše da je prediktivni model u celini značajan, dok se na osnovu koeficijenta determinacije uočava da Dubinski i Površinski pristup zajedno objašnjavaju oko 11% varijacija u studentskim procenama zadovoljstva kursom. Ako se obrati pažnja na standardizovane regresione koeficijente, zapaža se da samo Dubinski pristup ostvaruje značajan pojedinačni doprinos u objašnjenju varijanse zadovoljstva kursom, te da veća izraženost Dubinskog pristupa podrazumeva i viši stepen zadovoljstva kursom.

Tabela 4
Predikcija zadovoljstva kursom na osnovu Dubinskog i Površinskog pristupa učenju

Ocena modela kao celine	Prediktorske varijable	*β*	*t*
$F(2, 170) = 10.86^{**}$ $R^2 = .11$	Dubinski pristup učenju	.26	3.31**
	Površinski pristup učenju	-.14	-1.72

Napomena. F – vrednost *F*-testa; R^2 – koeficijent determinacije; *β* – parcijalni standardizovani regresioni koeficijenti; *t* – vrednost *t*-testa; $^{**}p < .01$.

U nastojanju da se detaljnije ispitaju relacije između pristupa učenju i zadovoljstva kursom, testirana je značajnost još jednog prediktivnog modela koji je obuhvatao dva oblika motivacije i dva oblika strategija u pristupima učenju. Iz Tabele 5 uočljivo je da se ovakav složaj prediktorskih varijabli pokazao statistički značajnim, a njegov doprinos u objašnjenju varijanse zadovoljstva kursom iznosi oko 18%. Kada je reč o parcijalnom doprinosu prediktora, intrinzička motivacija i površinska strategija ostvaruju pozitivnu povezanost sa zadovoljstvom kursom, dok je povezanost instrumentalne motivacije i kriterijumske varijable negativnog predznaka. Drugim rečima, viši stepen izraženosti intrinzičke motivacije

i površinske strategije praćene su prominentnijim zadovoljstvom kursom, dok viši stepen instrumentalne motivacije podrazumeva slabiju izraženost zadovoljsta kursom, i obratno.

Tabela 5
Predikcija zadovoljstva kursom na osnovu motivacije i strategija u pristupima učenju

Ocena modela kao celine	Prediktorske varijable	β	t
$F(4, 168) = 9.07^{**}$ $R^2 = .18$	Intrinzička motivacija	.33	3.25**
	Dubinska strategija	-.06	-0.59
	Instrumentalna motivacija	-.34	-3.26**
	Površinska strategija	.21	2.02*

Napomena. F – vrednost *F*-testa; R^2 – koeficijent determinacije; β – parcijalni standardizovani regresioni koeficijenti; *t* – vrednost *t*-testa; * $p < .05$; ** $p < .01$.

Diskusija

Pristupi učenju i akademsko postignuće studenata

Imajući u vidu da nalazi ranijih istraživanja ukazuju na nekonzistentne rezultate u pogledu međuodnosa pristupa učenju i akademskog postignuća studenata, prvi cilj ovog istraživanja odnosio se na to da se ispitaju relacije pristupa učenju studenata filoloških grupa i njihovog akademskog uspeha. Rezultati aktuelnog istraživanja delom potvrđuju nalaze koji su dobijeni u ranijim studijama, gde je utvrđeno da pristupi učenju mogu značajno da utiču na akademsko postignuće (Cano, 2007; Richardson et al., 2012). Naime, rezultati našeg istraživanja ukazuju na to da Površinski pristup učenju studenata negativno predviđa uspeh na studijama. Preciznije rečeno, što je Površinski pristup više zastupljen kod studenata filoloških grupa, oni imaju niži akademski uspeh, i obratno: studenti kod kojih je ovaj pristup učenju manje zastupljen, imaju viši akademski uspeh. Dakle, studenti koji obavljaju zadatke koristeći niže nivoe kognitivnog mišljenja, kao što su učenje napamet, učenje samo onoga što je najpotrebnije (Biggs, 1987a), i učenje radi polaganja ispita bez dubljeg razumevanja nastavnih sadržaja (Herrmann et al., 2017), postižu i niži akademski uspeh tokom studija. Slični nalazi dobijeni su i u ranijim istraživanjima u kojima je, takođe, utvrđena značajna negativna povezanost Površinskog pristupa učenju i akademskog postignuća studenata (Diseth, 2002; Diseth & Martinsen, 2003; Herrmann et al., 2017).

S druge strane, u našem istraživanju i u pojedinim prethodnim istraživanjima (Diseth & Martinsen, 2003; Diseth, 2007; Gijbels et al., 2005; Herrmann et al., 2017; Trigwell et al., 2013), nije utvrđena značajna povezanost Dubinskog pristupa učenju i akademskog postignuća studenata. Razlog ovakvog nalaza može biti u tome što Dubinski pristup

podrazumeva integraciju, sintezu i refleksiju (Nelson Laird et al., 2008), kao i strategije učenja koje se odnose na razumevanje sadržaja i predstavljaju drugačije načine rada i kognitivne aktivnosti studenata, a što je znatno teže proveriti na završnim ispitima (Herrmann et al., 2017), kao i posredstvom ishoda učenja. Dodatno, razlog zbog kojeg nije utvrđena povezanost između Dubinskog pristupa učenju i akademskog postignuća može da bude i u činjenici da je teško izmeriti kvalitativni aspekt akademskog postignuća u kvantitavnim istraživanjima, posebno zbog mogućnosti da prosečna ocena tokom studija ipak ne odražava ishode Dubinskog pristupa učenju u dovoljnoj meri, kao ni razumevanje (Herrmann et al., 2017). Međutim, značajno je napomenuti da su na uzorku srednjoškolaca dobijeni suprotni rezultati i da je utvrđena značajna povezanost Dubinskog pristupa učenju i akademskog postignuća; „što su više zastupljeni Dubinski pristup učenju i opšta inteligencija, bolji je i akademski uspeh" (Cano, 2007, str. 144). U našem istraživanju to nije slučaj, stoga dobijeni nalazi predstavljaju značajan dodatak postojećim istraživanjima i literaturi, jer potvrđuju nalaze prethodnih studija o izostanku povezanosti Dubinskog pristupa učenju i akademskog postignuća.

Pristupi učenju i zadovoljstvo kursom

Ranija istraživanja sugerišu da postoji značajna korelacija između pristupa učenju studenata i njihovog zadovoljstva kursom (Nausheen & Richardson, 2013), kao i njihove percepcije okruženja za učenje i ishoda u učenju. Drugim rečima, studentske percepcije akademskog konteksta imaju značajnu ulogu u oblikovanju njihovog učenja, jer na temelju vlastitih percepcija studenti formiraju motivaciona uverenja koja određuju načine učenja i vode prema ishodima učenja (Marinović, 2014). U skladu s tim, drugi cilj ovog istraživanja podrazumevao je ispitivanje relacija između pristupa učenju studenata i njihovog zadovoljstva kursom. Rezultati ukazuju na to da Dubinski pristup učenju studenata pozitivno predviđa percepciju zadovoljstva kursom, dok je Površinski pristup predviđa negativno. Međutim, važno je naglasiti i da je ova povezanost marginalno značajna i da se uslovno može uzeti u obzir. Ovakvi rezultati nisu iznenađujući s obzirom na to da je i u drugim istraživanjima (Guo et al., 2017; Karagiannopoulou & Christodoulides, 2005; Marinović, 2015; Nelson Laird et al., 2008; Ramsden, 2003) utvrđeno da studenti koji imaju Dubinski pristup učenju, izražavaju i veće zadovoljstvo akademskim okruženjem i kursom. Odnosno, način na koji studenti opažaju i procenjuju okruženje za učenje utiče na njihove pristupe učenju, što dalje može da predviđa njihovo akademsko postignuće i zadovoljstvo kursom. U skladu s tim, pojedini autori (Karagiannopoulou & Christodoulides, 2005) zaključuju da će studenti koji kao indikatore dobrog okruženja za učenje navode kvalitetno poučavanje, relevantnost sadržaja i nastave za profesionalni rad, kao i prijateljsku socijalnu klimu, verovatnije usvojiti Dubinski pristup učenju, što će zauzvrat povoljno uticati na njihovo akademsko postignuće i sveukupno zadovoljstvo kursom.

S druge strane, još su ranija istraživanja pokazala da studenti koji imaju Površinski pristup učenju procenjuju da je i kvalitet nastave lošiji, što se odnosi i na način procene

znanja i opterećenje nastavnim zahtevima (Ramsden, 1991). Rezultati našeg istraživanja, takođe, ukazuju na to da Površinski pristup učenju negativno predviđa zadovoljstvo kursom. Drugim rečima, studenti filoloških grupa koji imaju Površinski pristup učenju izražavaju niži stepen zadovoljstva nastavom i organizacijom kursa. Međutim, značajno je napomenuti da rezultati u ovom segmentu nisu do kraja usaglašeni i da u pojedinim istraživanjima nije dobijena takva povezanost. Naime, pojedini autori (Lizzio et al., 2002) utvrdili su da akademsko postignuće studenata nije povezano sa njihovim Dubinskim pristupom učenju, zadovoljstvom kursom i razvojem generičkih veština, kao i da postoji slaba povezanost između Površinskog pristupa učenju i prosečne ocene tokom studija.

Radi obuhvatnijeg razumevanja ovog fenomena, sprovedena je dodatna multipla regresiona analiza u kojoj su, pored dubinske i površinske strategije, za prediktore zadovoljstva kursom uzete intrinzička i instrumentalna motivacija koje predstavljaju komponente Dubinskog i Površinskog pristupa učenju (Biggs et al., 2001). Rezultati ukazuju da je percepcija zadovoljstva kursom pozitivnija što je kod studenata više zastupljena intrinzička motivacija. Takvi nalazi nisu iznenađujući, budući da ukazuju da oni studenti koji pristupaju učenju sadržaja sa namerom da ga usvoje, razumeju i primenjuju, odnosno pokazuju više unutrašnju motivaciju za učenje, izražavaju i veće zadovoljstvo datim kursom. Na ovakve zaključke ukazuju i druga istraživanja u kojima je utvrđeno da studenti kod kojih je više izražena intrinzička motivacija uče sa više razumevanja, koriste više metakognitivnih i kognitivnih strategija i ulažu više truda, u odnosu na studente kod kojih je zastupljenija instrumentalna motivacija (Biggs & Tang, 2011; Marinović, 2014). Shodno tome, moguće je zaključiti da intrinzička motivacija studenata vodi ka većoj angažovanosti studenata u nastavnim aktivnostima, što može da utiče na njihovu percepciju okruženja za učenje, a time i na ishode učenja i njihovo sveukupno zadovoljstvo kursom.

S druge strane, kod studenata kod kojih je više zastupljena instrumentalna motivacija, odnosno namera da se brže usvoji određeni sadržaj bez detaljnijeg razumevanja i analize, da se položi ispit i dobije pozitivna ocena, utvrđeno je i niže zadovoljstvo kursom. Ovi rezultati mogu se objasniti saznanjima da studenti koji su unutrašnje motivisani i imaju izraženiju želju da nauče i razumeju nastavne sadržaje, neminovno posvećuju više vremena i pažnje svim aktivnostima u vezi sa kursom, učestvuju aktivno u nastavi, postavljaju pitanja, učestvuju u diskusijama, te su samim tim i zadovoljniji kursom i pozitivnije ocenjuju okruženje za učenje. Suprotno tome, studenti koji su više motivisani ocenom i brojem bodova, te koji stavljaju težište na polaganje ispita, ulažu manje vremena i manje se angažuju u aktivnostima tokom nastave, posledično izražavaju manje zadovoljstvo kursom i okruženjem za učenje. U jednom ranijem istraživanju (Nausheen & Richardson, 2013) takođe je utvrđena značajna korelacija između motivacionih faktora i percepcije zadovoljstva kursom. Međutim, tu su dobijeni suprotni rezultati i autori zaključuju da „instrumentalna motivacija i važnost zadatka mogu da imaju usmeravajuću ulogu i da vode ka većem zadovoljstvu kursom. Moguće je i sugerisati da pozitivno iskustvo tokom kursa može da vodi ka višem nivou instrumentalne motivacije, samoefikasnosti za učenje i uverenju o značaju zadatka" (Nausheen & Richardson, 2013: 613). Rezultati ovog istraživanja, kao i rezultati prethodnih studija, doprinose zaključku da je motivacija jedan od značajnijih faktora u razumevanju akademskog

uspeha studenata (Marinović, 2014), pri čemu izdvajaju nekoliko ključnih aspekata motivacije studenata i to: intrinzičku i instrumentalnu motivaciju, nivo percipirane samoefikasnosti, percepciju značaja kursa i ispitnu anksioznost (Biggs & Tang, 2011; Marinović, 2014; Nasheen & Richardson, 2013).

Kada su u pitanju strategije učenja koju studenti filoloških grupa primenjuju, kao dodatne komponente Dubinskog i Površinskog pristupa učenju (Biggs et al., 2001), rezultati ukazuju da se značajnom pokazala površinska strategija koja pozitivno predviđa zadovoljstvo kursom, dok dubinska strategija, s druge strane, nije značajan prediktor zadovoljstva. S obzirom na to da je utvrđeno da je viši stepen izraženosti intrinzičke motivacije i površinske strategije praćen prominentnijim zadovoljstvom kursom, dobijeni rezultati upućuju na disonancu u pristupima učenju, koju karakteriše netipična kombinacija aspekata učenja koji na teorijskom nivou nisu koherentni (Lindblom-Ylänne, 2003), to jest na moguće sukobljavanje dubinskih odnosno površinskih tendencija (Marinović, 2015; Vermunt & Minnaert, 2003).

Nalazi aktuelnog istraživanja, osim što predstavljaju doprinos postojećem korpusu naučnog znanja i otvaraju dalje mogućnosti za istraživanje problematike pristupa učenju u kontekstu visokog obrazovanja u Republici Srbiji, imaju i značajne pedagoške implikacije. Naime, poznavanje relacija između pristupa učenju i ishoda učenja smatra se značajnim za nastavnu praksu, budući da ta saznanja mogu pružiti smernice u nastojanjima da se unapredi kvalitet procesa i ishoda učenja (Trigwell & Prosser, 1991). S aspekta pedagoških implikacija nalaza aktuelnog istraživanja, može se konstatovati da je u cilju poboljšanja ishoda učenja važno delovati, kako u pravcu inhibiranja Površinskog pristupa učenju tako i u pravcu pružanja podrške studentima da se angažuju u dubinskom procesu učenja. Aktuelna studija pokazuje da je važno da univerzitetski nastavnici raspolažu saznanjima da su pristupi učenju studenata značajno povezani s ishodima učenja, a posebno da usvajanje Površinskog pristupa učenju može negativno da utiče na studentska akademska postignuća. Kada je reč o studentskim procenama zadovoljstva kursom, aktuelna studija pokazuje da je u cilju povećanja zadovoljstva kursom bitno da se istovremeno radi na slabljenju Površinskog pristupa (pre svega u domenu instrumentalne motivacije) i na razvoju Dubinskog pristupa učenju. Sve navedeno ima važne praktične implikacije za unapređenje nastave: važno je praćenje pristupa učenju koji studenti usvajaju i njihovih efekata, kao i podsticanje studenata da se angažuju u poboljšanju efikasnosti učenja (Mirkov, 2013).

Zaključak

Rezultati aktuelnog istraživanja problematike relacija između pristupa učenju studenata i njihovih ishoda učenja pokazuju da sa akademskim postignućem značajnu korelaciju negativnog predznaka ostvaruje samo Površinski pristup, odnosno instrumentalna motivacija i površinska strategija. Rezultati pokazuju i pozitivnu povezanost zadovoljstva kursom sa Dubinskim pristupom učenju, kako u domenu intrinzičke motivacije tako i u domenu površinske strategije. U slučaju povezanosti zadovoljstva kursom s Površinskim pristupom učenju registrovana je negativna korelacija, i to samo u domenu

instrumentalne motivacije. Na osnovu dobijenih rezultata, može se zaključiti da pristupi učenju imaju značajnu ulogu u sveukupnom iskustvu studiranja i da mogu biti rezultat drugih aspekata koji se odnose na uspešnost studiranja, ali i njihov preduslov. U tom smislu, pristupi učenju predstavljaju sastavni deo ukupnog sistema u kom se dešava obrazovanje, izraženog preko modela *Preduslov-Proces-Produkt* (3P), a u kojem su karakteristike studenata, kontekst poučavanja, aktivnosti usmerene na učenje i ishodi učenja međusobno povezani, formirajući jedan dinamičan sistem (Biggs et al., 2001). Autor Marinović (Marinović, 2014) opravdano zaključuje da je svaka situacija učenja različita, i da je, u skladu s tim, opravdano pretpostaviti da će isti studenti učiti različito u različitim situacijama. S druge strane, kako se i studenti međusobno razlikuju prema njihovim ranijim iskustvima učenja, opravdano je pretpostaviti i to da će isti obrazovni kontekst biti procenjen različito od strane različitih studenata (Marinović, 2014).

Značajno je napomenuti da aktuelno istraživanje ima svoja ograničenja, koja se najpre odnose na to da su njime bili obuhvaćeni samo studenti jednog univerziteta. Shodno tome, rezultati istraživanja ograničeni su na određenu instituciju i specifični, lokalni sociokulturni kontekst. Uzorak koji bi osigurao širu zastupljenost univerziteta u Srbiji svakako bi uvećao mogućnost uopštavanja dobijenih rezultata. U tom kontekstu se u literaturi (Mirkov, 2009) ukazuje na to da ostaje otvoreno pitanje primenljivosti *Revidiranog dvofaktorskog upitnika o pristupima učenju studenata* u različitim kulturama. Pri tome, i sami autori instrumenta (Biggs et al., 2001) naglašavaju potrebu za daljim istraživanjima ovog upitnika s fokusom na utvrđivanje kros-kulturalnih varijacija u pristupima učenju studenata. Sledeće ograničenje aktuelnog istraživanja tiče se homogenosti uzorka, koji se sastojao od studenata filoloških studijskih grupa. Bilo bi korisno sprovesti slično istraživanje na heterogenijem uzorku, koji bi uključivao i studente nefiloloških studijskih grupa, kako bi se utvrdio uticaj kontekstualnih faktora. Naredno ograničenje odnosi se na to što je prosečna ocena korišćena kao mera postignuća studenata, to jest što se uzimao u obzir samo kvantitativni aspekt akademskog postignuća. Stoga bi u budućim istraživanjima bilo dobro obuhvatiti i druge aspekte procene akademskog postignuća, kao što je razumevanje. Konačno, sprovedeno korelaciono istraživanje prate slabosti vezane za takav nacrt istraživanja, koji ne omogućava zaključivanje o kauzalnom odnosu između ispitivanih varijabli. Međutim, poznavanje prirode relacija između varijabli od istraživačkog interesa, koja u slučaju pristupa učenju i zadovoljstva kursom najverovatnije podrazumeva dvosmeran odnos, veoma je važno za razumevanje problematike pristupa učenju studenata. Svakako bi primena kvalitativne metodologije (dubinski intervju, fokus grupe, tematska analiza, posmatranje studenata) značajno upotpunila korpus nalaza o ispitivanom fenomenu.

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Prilozi

Tabela 1

Predikcija akademskog postignuća na osnovu motivacije i strategija u pristupima učenju

Ocena modela kao celine	Prediktorske varijable	β	*t*
$F(, 134) = 3.16^{**}$ $R^2 = .07$	Intrinzička motivacija	.06	-0.45
	Dubinska strategija	.04	0.38
	Instrumentalna motivacija	-.22	-1.82
	Površinska strategija	-.16	-1.24

Napomena. F – vrednost *F*-testa; R^2 – koeficijent determinacije; β – parcijalni standardizovani regresioni koeficijenti; *t* – vrednost *t*-testa; * $p < .05$.

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Predicting the Learning Outcomes of Students Studying for Philology Degrees Based on Their Approaches to Learning

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Abstract *In the context of improving the quality of teaching and studies, a considerable amount of research has focused on the differences in the ways students approach learning, which can significantly contribute to achieving learning outcomes. Approaches to learning represent a combination of motivations and strategies students use during the learning process, and they are most commonly categorized into a Surface and a Deep approach. Previous research findings on the relationship between approaches to learning and learning outcomes are inconclusive, and therefore the aim of this study is to examine the relationship between students' approaches to learning, their academic achievement, and course satisfaction. The study involved 180 undergraduates studying for philologydegrees, and used the Revised Two-Factor Study Process Questionnaire (R-SPQ-2F). The obtained results indicate that the Surface approach to learning negatively predicts academic success, while no connection was found between the Deep approach and students' academic achievement. On the other hand, a positive correlation was found between course satisfaction and the Deep approach to learning, both in terms of intrinsic motivation and surface strategy, as well as a negative correlation with the Surface approach to learning in the domain of instrumental motivation. The obtained results are significant for teaching practice, particularly for the purpose of improving teaching and achieving cognitive and affective learning outcomes. Additionally, the findings and conclusions provide guidance on supporting students in applying the Deep approach and strategies in the learning process, as well as on inhibiting the Surface approach to learning.*

Keywords: *approaches to learning, learning outcomes, Surface and Deep approach, academic achievement, course satisfaction.*

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What Does "Teaching Philosophy" Mean? A Case Study: *Professor X* Teaching Philosophy

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Abstract *In higher education, teaching philosophy is a crucial tool for conducting and assessing teaching quality. Yet, there is limited focus on exploring its essence. Teaching philosophy can be interpreted as a strategy in education and pedagogy, illustrating how teachers tackle the teaching process. This involves both pedagogical and educational aspects. A different perspective on teaching philosophy is to view it as the direct transfer of philosophical knowledge from teacher to students. This qualitative study on higher education is conducted by looking at Professor X's social and educational background, teaching in different settings, the professor's methodology of teaching philosophy from basics as well as their broader academic work, which includes writing, research, and public presentations. The research investigates the teacher's self-reflection on philosophy and the development of a "teaching philosophy from scratch", exploring how it supports teachers to push philosophy beyond conventional academic environments and a particular teaching philosophy. The findings suggest that there is a connection between teaching methods and research and publication endeavors. The outcomes extend beyond the typical association to highlight the essence of the link between research and teaching. This deepens our insight into the meaning of "teaching philosophy" as a diverse process that includes teaching, writing, academic endeavors, and public contributions.*

Keywords: *teaching philosophy, higher education, pedagogy, students, educational and research style.*

Introduction

This paper aims to explore the potential of teaching philosophy through a case study of *Professor X*'s educational and research methodology, defined as teaching philosophy from scratch, which could be used as an educational and existential tool, understood as the lifelong practice of philosophy as a kind of social critique (Mitrović, 2017). Professor X is Distinguished Professor of Philosophy, who teaches at the City University of New York (CUNY). The subject of this case study has been anonymized at their own request in our

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regular correspondence during this research. Due to this request, we will use the third-person pronoun "they" instead of "she" or "he." Direct references to Professor X's published works are coded with X and the year of publication, and, along with the other codes and their professional CV, are known to this journal's editor.

We opted for the case study methodology because the qualitative study produced promising results, exploring student expectations and perceptions of different educational philosophies and teaching styles at the University of Belgrade (Mitrović & Mitrović, 2022). The second reason is the evaluation of the advantages and disadvantages of recent literature reviews (Ngene, 2023) and standard educational surveys administered to a sample of educators in specific schools (Abd Elkader, 2014).

The concept of Teaching Philosophy is ambiguous. Initially, it can be interpreted as a strategy in education and pedagogy, depicting how teachers tackle the teaching process. This involves both pedagogical and educational aspects. The teaching philosophy statement is a teacher's story of their subjective and objective perspectives and approaches in educational and pedagogical processes at the start of their professional career. Certain researchers posit that the pertinent literature provides various strategies for constructing a teaching philosophy statement. However, existing literature does not encompass an epistemological dimension for developing or evaluating a teaching philosophy. In addition to individual perspectives on educational approaches, teaching philosophy is influenced by the traditions, organizational norms, and community expectations within a specific field (Schönwetter et al., 2002).

A different perspective on teaching philosophy is to view it as the direct conveyance of philosophical knowledge from teacher to students. In both situations, learning and studying unfold in the same way. This paper challenges the perceived divide between teaching and practicing philosophy. It argues that effective teaching—grounded in Socratic dialogue, skill development, and intellectual humility—is a fundamental form of "doing" philosophy. Professors who actively engage with students, question assumptions, and cultivate critical thinking exemplify the core of the philosophical endeavor (Cahn et al., 2018). However, teaching philosophy often requires innovative methods that incorporate elements unique to individual instructors while remaining universally accessible and understandable to diverse audiences (Lipman et al., 1980). Nevertheless, such an approach is generally challenged at the micro and macro level.

The issues at the micro level can be divided into: a) What faculty expect from philosophy teaching: In graduate programs, it is not uncommon for faculty to review students to determine teaching assistantship assignments. A pervasive and problematic belief in such programs suggests that high student satisfaction with courses may be seen as an indication that a graduate student is not prioritizing research. As a result, some students may even be advised to lower their evaluations deliberately to avoid this perception (Concepción, 2018). b) What professors of philosophy expect from students: nearly 80% of philosophers report that at least 61% of their students each year are general education students—individuals taking a single philosophy course to meet distribution requirements, with no intention of declaring it as a major. Furthermore, almost 50% of philosophers noted that over 80% of their students fall into this category (Bradner & Mills, 2018, p. 10**)**. When asked what they hope these students gain from philosophy, almost half of

the instructors cited "intellectual virtues" as the key takeaway. When given the choice between focusing on the content of canonical texts, which is easier to convey, and fostering intellectual virtues through more nuanced teaching methods, the majority preferred the latter (Bradner & Mils, 2018, pp. 9-16).

At a macro level, higher education, particularly in the humanities and philosophy, is currently facing a significant crisis in the United States. Between 2013 and 2014, the number of philosophy bachelor's degrees declined by 6.6% (from 7,920 to 7,398), marking the largest drop in the 27 years of available data for the discipline. Despite this decrease, the number of degrees awarded remained more than twice as high as in 1987 (AMACAD, 2016). One of the challenges is also that philosophy as a profession is not economically profitable (College NPV, n.d.; Data USA, 2022; Zhu, 2024) on the one hand, and it is faced with cutting student loans on the other hand. The situation is compounded by the potential elimination of the federal Department of Education, which would result in substantial funding cuts for public higher education (Blad, 2024; Ferguson, 2024; Greene, 2024).

The opening segment of this paper will involve the clarification of the terms and subjects being studied. The next section of this paper will present the previously mentioned issue, i.e. the relations between students and professors' expectations through a comprehensive introduction to the sociological setting during Professor X's studies at Columbia University.

Sections four and five are related to the next issue at the micro level, i.e. faculties' expectations from teachers, having in mind the balance between research and teaching philosophy by evaluating Professor's X time at three universities in the USA, establishing links between syllabi, research interests, and types of publications as well as specific roles as expert and formal teacher in various teaching contexts.

The following section will delve into the qualitative features of X's recent publications, which correlate with the intermittent courses taught over the last thirty years. I will scrutinize the teacher's self-reflection on philosophy and approach to building a "teaching philosophy from scratch", examining how it aligns with X's commitment to advancing philosophy beyond traditional academic settings and a type of teaching and practicing philosophy as a response to issues at the macro level. The last two sections will address the results presented and conclude the study with individual approach of self-reflected teaching philosophy from scratch as promoter of critical thinking, philosophy – doing and living.

Defining the terms and subjects of the examination

The concept of teaching philosophy highlights the shared epistemological aspects of studying philosophy and the professor's approach to teaching. Such similarities are rooted in philosophy being part of or connected to all fields of science and particular disciplines. Education is a science closely connected to philosophy in constructing a theoretical base and its practices. "Philosophy needs the clear and precise expressions of education, and education needs the guidance of philosophy. Educational philosophy can be defined as a form of applied philosophy that handles education in a philosophical manner or method" (Saritaş, 2016, p. 1534).

Suppose that a teacher's methodological narrative embodies their teaching philosophy. The previously mentioned issue could be summarized through several concrete research questions in this study, such as: how can teachers make use of their professional and life experiences, professional education, and knowledge of sociological issues to promote the sharing of philosophical knowledge with students and support society and institutions? Do research-based educational philosophies face challenges when it comes to beginning teaching from scratch? In other words, is there an individual who advocates for a radical and humanistic philosophy in their scholarly work and writings, which are designed to facilitate the self-improvement of readers, along with a formal teaching strategy that lays the groundwork in philosophy for young and adult learners entering college?

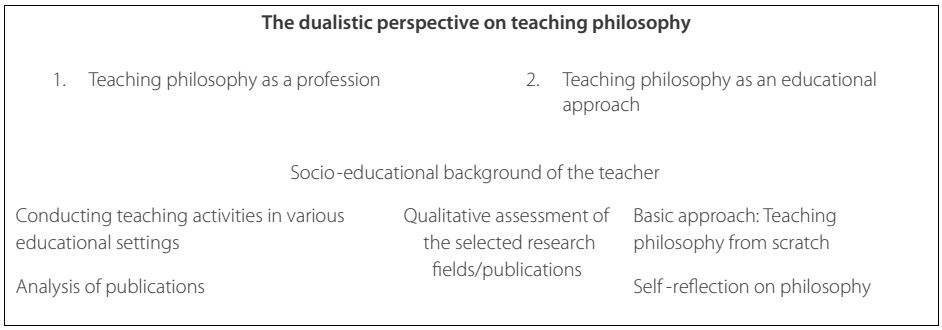
Considering the last questions, current research emphasizes the relationship between philosophical preferences and teaching styles (Abd Elkader, 2014; Saritaş, 2016; Snyder, 2006).

Grasha emphasizes that teaching styles should be based on the conceptual base that forms teaching or educational philosophy (Grasha, 2002, p. 92). Without one concrete educational philosophy, the teaching style is hollow. Syllabi taught in various disciplines are based on scholarly research and typically have an underlying philosophical, theoretical, and empirical base.

Relevant studies highlight the usage of syllabi that are intended to improve students' ability to apply accepted knowledge to a variety of tasks in their professional and personal lives (Zack, 2023a). As outlined in the next sections, X utilized recommended textbooks in their teaching method, blending them with the educational philosophy grounded in their research and publications.

Drawing from previous theoretical and educational viewpoints, I present a methodological framework that will be applied in this case study (Figure 1).

Figure 1
Examination of the epistemology of teaching philosophy



Besides the more specified categorization of the educational philosophies emphasized by Grasha (2002), they are commonly classified into four categories, perennialism, progressivism, essentialism, and reconstructivism, or even five similar categories, perennialism,

idealism, realism, experimentalism, and existentialism (Bondi, 2007). However, some other classifications define educational philosophies as behavioral, liberal, progressive, humanistic, and radical (Abd Elkader, 2014).

Synthesizing the features of various teaching styles and approaches, some authors emphasize and combine educational philosophies with the teaching styles described as an expert, formal, authority, personal model, facilitator, and delegator teaching styles (Grasha, 1994).

The teacher with an expert teaching style possesses the knowledge and expertise that students need. The teacher strives to maintain their status as an expert among students by displaying detailed knowledge and challenging students to enhance their competence. They are concerned with transmitting information and ensuring that students are well prepared. Furthermore, the teacher with a formal authority teaching style possesses status among students because of their knowledge and role as a faculty member. They are concerned with providing positive and negative feedback and establishing learning goals, expectations, and rules of conduct for students. They are also concerned with the correct, acceptable, and standard ways to do things and providing students with the structure they need to learn. Moreover, the teacher using a personal model teaching style believes in teaching by personal example. This teaching style establishes a prototype for thinking and behaving, oversees, and guides. It shows students how to do things and encourages them to observe and emulate the educator's approach. The facilitator teaching style emphasizes the personal nature of educator-student interactions. The teacher using this style guides and directs students by asking questions, exploring options, suggesting alternatives, and encouraging them to develop criteria to make informed choices. The overall goal is to develop students' capacity for independent action, initiative, and responsibility. They work with students on projects in a consultative fashion and try to provide as much support and encouragement as possible. The delegator teaching style is concerned with developing students' capacity to function autonomously. Students work independently on projects or as part of autonomous teams. The educator is available as a resource person at the request of students (Grasha, 1994, p. 143; Zhang, 2006).

Some authors have also suggested a very branched classification and combination of teaching styles, classroom processes, and learning styles. These interdependent relations include the teachers' specific roles, behaviors, and personalities (Grasha, 2002).

All of those styles and approaches might be understood as a mix of the most appropriate decision-making choices associated with our researchers' personal characteristics and the complex interactions of sociological conditions in education and teachers' professional careers. This case study will investigate some of those interconnected indicators.

Teacher's self-reflection on studying philosophy as response to micro-level studying expectations

Professor X's professional CV with extensive biographical details provides a solid base for conducting this examination. Looking at the supplied materials in the most general way, I find an optimal combination of research, scientific, and teaching activities by X.

This combination is one of the necessary conditions for personal and professional achievements in a discipline's organizational and institutional development, in this case, philosophy.

When reflecting on X's personal socio-demographic background relevant to our study, X highlights three key elements: date of birth, origins, and the tensions that arise from differing career choices between Professor X and X' mother. Born in the middle of the 20th century, X grew up as the only child in a single-parent household. X's mother (second generation of Jewish immigrants from Europe) was a professional artist and had a rich artistic talent that was not widely acknowledged or commercially successful. X determined the identity of their own father in their teenage years. He was an African American gardener who had another marriage and children from it.

X's mother wished for her child to pursue a medical career, but X personally disagreed with that choice. X decided to pursue psychiatry as a compromise, but later recognized the necessity of obtaining a medical degree. Being a diligent student, they were awarded a scholarship and began studying psychology, but switched their major to philosophy during their senior year. The reason lay in teaching approaches. While psychology courses stifle student questioning and discussion, philosophy courses embrace it.

Second, we will give a short evaluation from the perspective of the sociology of professions and the relevant background based on which young people or adults have been making choices concerning their fields of study and future professions both at the time when X started their academic career and now. From that perspective, we can better comprehend the times when Professor X chose philosophy as a future profession and when X was teaching philosophy. The common denominator for both these eras, besides their parents' wishes, involves the (latent or manifest) motives of students and their perceptions of prestigious professions back then and now.

Professor X's academic career practically started at Columbia University after receiving their BA degree in 1966; shortly after that, in 1970, X defended their doctoral dissertation on *The Epistemology of C.I. Lewis* under the supervision of Professor Sidney Morgenbesser. According to Professor X (2021, p. 128) and their research biography:

> "Lewis was a metaphysical pragmatist who attempted to connect language and thought to physical reality through his distinction between the *a priori* and *the given*. Lewis was obscure when I wrote about him, with strong encouragement from my advisor Sidney Morgenbesser and other members of my doctoral committee, and he remains dormant today".

From this statement, we could assume that the topic of Dr. X's dissertation was and still is obscure and esoteric, and perhaps motivating just for a small group of dedicated students who, as we all know from our experiences, would be encouraged to research further. From the Course statistics in Professor X's CV, I found that over 17 years, at least 26 students had been encouraged to further study relevant topics. At the same time, those students in turn motivate their teachers to be even more dedicated, and continue their own lifelong learning with them, as well as promote philosophical methods and ways of thinking beyond academia into the public space.

At twenty-five years old, X, feeling nostalgic for their life outside academia, turned down an offer to stay on as an assistant professor at the Barnard Philosophy Department

following the completion of their PhD in Philosophy. They thought that they were done with academia. They were absent for twenty years. None of their work-related undertakings, which included freelance writing and stock investments, were successful. Struggling with an unstable social life in their mid-forties, they sought solace in Simone de Beauvoir's *Second Sex*. They found renewed inspiration in the prospect of rediscovering skills from their youth. This renewed vigor drove them back to the field of philosophy. Such a non-linear life story could be partly explained by the short background evaluation of the score of professional prestige during the 1970s in the USA, USSR (Treiman, 1977), and Socialist Federal Republic of Yugoslavia (SFRY).

The most prestigious professions in the USA during the relevant period were predominantly and closely connected with politics (with a score of about 90).

The USSR's top score was reserved for the scientific professions related to medicine (about 80); in the SFRY, the highest score was held by mechanical engineers (about 70).

The economic professions had an average score of about 60 in all three societies. In the USA and SFRY it was 56 and 57 respectively, and in the USSR about 67.

The significant difference is that top-rated professions in the USA also possessed (political) power. In contrast, the economics professions, which were dominant in the SFRY political structure, had the lowest prestige score. The situation was similar in the USSR, where following this logic, knowledge did not involve (political) power, and politics did not entail adequate knowledge.

Nowadays, professional trends in the US can be partly inferred from the official educational statistics. Throughout the 2019/2020 academic year, the number of Bachelor's degrees conferred in the domains of business, management, and marketing was estimated to be around 390,000. In comparison, philosophy with religious studies had a considerably lower figure, with roughly 11,000 Bachelor's degrees awarded (NCES, 2020), while philosophy accounts for about 3% and religious studies about 2% of total Humanities bachelor's degrees over three decades (1987-2018) (AMACAD, 2018).

The global trend is to study and obtain an academic degree in the field of economics; more accurately, the top scores among students are reserved for business-related professions. So, the general conclusion of these 50 years of prestige inversion may be that *power* is still the primary motive for studying, yet the focus is split between politics and business, media and management.

This brief background tells us that, both back then and now, undergraduate students have hardly been motivated to study philosophy in great numbers. That also means that choosing philosophy courses today is partly motivated by the calculus of chasing a degree.

It should be noted that over the 50 years (1970/71-2020/21) the number of students in Philosophy and Religious Studies increased by 27.5 percent, while the number of students in Business and related studies increased by 70 percent in the same period (NCES, 2020).

Nevertheless, this fact shows that the professions of professors and researchers in different fields of science should be compared relative to other, more qualitative indicators than just the numbers of BA, MA, and Ph.D. students per year (NCES, 2022).

Moreover, being a professor and in such a context, where students are very well aware of the professional prestige trends on one hand, and serving as a teacher to a disengaged group of students, many of whom struggle to grasp the dense, antiquated, and frequently translated texts of philosophy (Bradner & Mills, 2018), on the other hand, is just one of the facts which should be acknowledged, rather than neglected by professors and researchers in the field of the social sciences and humanities.

Responding to the expectations of teaching in various educational settings: Teaching at three different universities 1990-2023

After taking a pause of twenty years from academia, Professor X got employed at the University of Albany (SUNY, Albany) where they taught eleven courses from 1990 to 2001: Morals and Society; Understanding Science; Philosophy of the Social Sciences; Existentialist Values; Existentialist Philosophies; Philosophy of Art; World Views; Seventeenth and Eighteenth Century Philosophy; History of Political Philosophy; Philosophy and Race; World Religions.

From 2001 to 2019, Professor X taught more than 15 courses at the University of Oregon, which I divided for further analysis into smaller groups (Tables 1 and 2) comparable with the courses they taught at the other two universities, as well as with Dr. X's published studies analyzed in the next two sections.

Table 1
Numbers of taught courses and student enrollment per year at the University of Oregon (2001-2017/18).

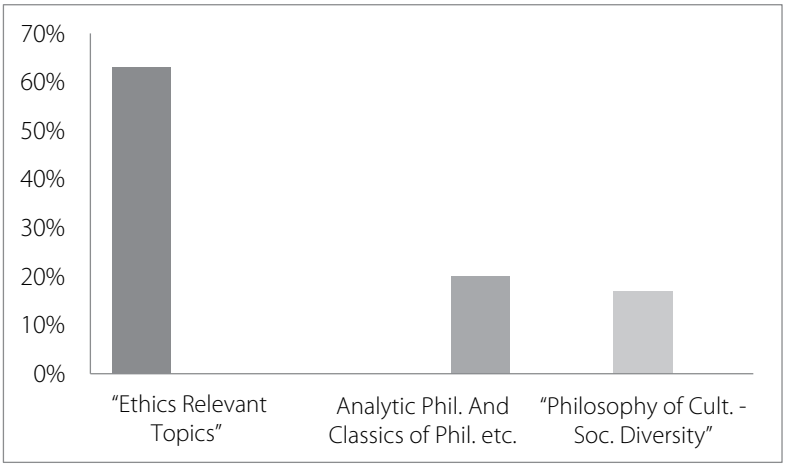
Year	Number of courses per year	Students enrolled in courses
2001	7	367
2002	8	335
2003	6	56
2004	6	85
2005	6	309
2006	6	317
2007	2	38
2008	7	361
2009	5	340
2010	6	342
2011	5	88
2012	6	56
2013	7	119
2014	6	63
2015	7	123
2016	7	147
2017/18	6	175
Total	**103**	**3321**

In the fall of 2019, Professor X joined the Philosophy Department at Lehman College, CUNY, where they taught ten philosophy courses: Introduction to Moral Theory, Race and Ethnicity, Problems of Philosophy, Early Modern (Modern II), Ethics and Race, Disaster and Corona, Democracy, Philosophy, and Atheism, and had an affiliation with the CUNY Graduate Center Department of Philosophy, where they taught a course on Philosophy of Race.

Table 2
Frequency and continuity of studying philosophy courses at the UO from 2001-2017/18.

Grouped courses	Enrolled students	Percent of total		Time intervals (Continuity/Discontinuity)
Ethics and Moral Theory	**1839**	**"Ethics Relevant Topics"**	**63%**	2001-02 / 2005-06 / 2008-09
Phil. of Disasters	**67**			2006-07 / 2012-14
Philosophy & Cultural Diversity/ Feminism /Home and Homelessness	**378**	**"Philosophy of Cultural and Social Diversity"**	**17%**	2015 / 16 / 17
Philosophy of Race and Black Resistance/ Afro-American Philosophy	**118**			2001-2017
Analyt. Philosophy And Classics of Philosophy + Hist. and Introduction of Philosophy	**919**		**20%**	2001-2017
Total	**3321**		**100%**	**2C / 3D**

Figure 2
Graphical representation of the chosen philosophy courses by students at the UO from 2001-2017/18 taught by Professor X.



Comparing the teaching activities at the University of Albany (SUNY), University of Oregon (UO), and the City University of New York (CUNY), it is indicated that in all three periods, introductory philosophical courses were taught, such as Ethics, Moral Theory, Philosophy of Cultural Diversity, History and Introduction to Philosophy and other Classical Philosophical Topics, such as Hume, Descartes, Locke, etc. Since returning to academia, Professor X has been persistent in their teaching methodology and style, i.e., teaching from scratch in an expert and formal manner. However, there were also innovative courses such as Philosophy of Race, Feminist Philosophy, Home and Homelessness, and Philosophy of Disasters.

Considering the representative period of 2001-2018, according to the first two tables and Figure 1, the most attended courses were related to ethics and introductory-level philosophy (about 80%). The courses addressing current and topical social concerns, e.g., disasters, gender issues, or homelessness, were attended by about 20 percent of all students in the relevant period, bearing in mind that these were generally taught during a much shorter period (e.g., two years), or in discontinuity (see Table 2 and Figure 2).

Considering the publishing and research activities of Professor X, which will be discussed in the next section, it may be assumed that the relevant enrollment rates of specific courses that were made available for limited periods of time (Ethics/Disasters/Philosophy of Social and Cultural Diversity) may have been attributed to Professor X's teaching approach (practicing philosophy), publications, and skills, as well as a significant social focus on that topic at the time.

Considering that the average number of first year students of philosophy per department is about 90 (Hotcourses Abroad, 2024; Hotcourses Abroad, 2024a; NCES, 2018) and the enrollment rates of the courses on general philosophical topics in Professor X's case (average 190 per year) illustrate (Table 1 and 2; Figure 2) the relevance of Professor X's methodology and research approach, defined as teaching and doing philosophy from basics. The same trend is also noticeable in postgraduate studies (Table 3).

Table 3
Postgraduate study advisement by Professor X 1992-2020

University	Postgraduate activities			Total
	MA	PhD	PhD committees	
Albany	4	3	0	7
Oregon	3	24	19	46
CUNY	0	5	0	5
Total	**7**	**32**	**19**	**58**

A look at Table 3 regarding the frequency of postgraduate study advisement by Dr. X shows that 58 defended MA theses and doctoral dissertations in twenty-eight years, where Professor X was the principal advisor or a member of the thesis committee.

From 2020 to 2023 in the US educational system, about 3 percent of doctoral dissertations in the field of philosophy were under the advisory of Professor X — some of those PhD candidates have built respectable intellectual careers and represent philosophy as an applied and critical discipline. This illustrates a possible response to the introductory issues and expectations that teaching and doing philosophy face. Over the course of the 2019-2020 academic year, 413 Ph.D. dissertations in philosophy were submitted in the USA, and among these, eleven were developed under the supervision of Professor X (NCES, 2020, Lutolof, 2020). It should be said that we opted not to include dissertations from the border years, particularly 2017/18, which would have seen an even more significant percentage of Dr. X's Ph.D. students in relation to the total philosophy Ph.D. population across the United States over this three-year period.

Such results could represent the bellwether regarding the further strengthening of philosophy as an academic discipline and the enhancement of its institutional and educational development.

Moreover, a detailed look at the topics of these theses and dissertations reveals that they are mainly from the field of fundamental philosophical issues. This proves the relevance of Professor X's teaching philosophy from scratch, which is defined not just as learning basic theoretical knowledge but also learning to apply it. However, Professor X's participation in PhD committees in various fields (Sociology, Education, History, Business, etc.) corresponds with their research topic choices, scientific interests, and the range of relevant publications analyzed in the next section.

Analysis of Professor X's publications 1990-2023

The philosophical approach seen in the previous section of the paper is relevant to the current world and has spurred Dr. X's research since 1990. It is evident that Professor X also continues to rely on the analytical skills and historical background they developed during their graduate studies at Columbia University. X practices these skills through the concept of teaching philosophy from scratch, which, according to Professor X, enhances students' resilience in professional and quotidian life during normal times and crises.

Considering the methodology used in this examination, I have grouped research fields and specific types of publications in Table 4.

The research and scientific fields have been synthesized based on the topics, and correlate with the issues present in the teaching activities of Professor X.

The presented articles, books, chapters, and anthologies, which Dr. X has written or contributed to over the years, are relevant not just for their scientific work but also in creating adequate syllabi for various courses at universities in the US and internationally. Together with the main trends and directions in the research work (Table 4) this trend is one part of teaching philosophy from scratch. However, another part of this approach, i.e., doing philosophy, is represented by particular research projects motivated by significant social events that intersect with our lives and professional works.

Table 4
Publications by Professor X 1990-2023.

Research / Scientific Fields	Monogr./ Books	Anthol.	Chap. in Book	Articles	Book reviews	Encycl. entries	Web design and prod.	Public and Broad-casts /(Inter) Nat. Media	School Interv.	Miscell-aneous Publ.	Present / lectures	Total per Res. field
	Types of Publication/units											
Philosophy of Race (1990-2023)	9	5	12	17	19	3	-	5	2	3	64	139
Philosophy of Women's Study/ Feminist Study (1990-23)	2	-	4	4	4	2	-	-	-	2	19	37
Philosophy and Ethics in Disasters/ Disaster Study (2006-2023)	3	-	3	5	1	2	-	2	-	4	25	45
Political /Social Philosophy and Philosophy of Injustice (1970/1990-2023)	7	-	2	7	7	3	2	-	1	5	30	64
Total per Unit	21	5	21	33	31	10	2	7	3	14	138	**285**

The quantitative review of Dr. X's publications indicates a prevalence of books, monographs, and anthologies, especially books concerning philosophy of race, political philosophy, and social injustice (about 80%). In addition, there is a significant quantity of book reviews on the relevant topics (84%). The decline of this trend in favor of topics related to disasters and feminism has been evident in the domain of articles, interviews, presentations, and lectures (70% to 18% and 12% respectively), intended for broader public and scientific interests in relatively intensive periods (2006-12, 2020-23), or in discontinuity, which correlated with certain emergencies or disturbing social events (Hurricane Katrina, Haiti Earthquake, COVID-19, climate changes, racial killings and homelessness), covering some of the essential topics in disasters, e.g., preparedness, scarce resources, response, ethical approaches in saving lives, etc. The same public interests have been reflected in media and other broadcasting reports (the issues of race and disasters).

The encyclopedic entries in all four research fields have been scientifically recognized and distributed evenly, which indicates constant and dedicated work on all the mentioned topics during the analyzed period.

Observed from the point of view of the field of research, attention is drawn to the number of publications on disasters, which appeared over a relatively short period, that is, in two dominant intervals, 2006-2012 and then, ten years later, with a book about COVID-19 and the political crisis in America, and the second edition of a book related to ethics for disasters in 2023 (first edition 2009).

A detailed qualitative analysis of Professor X's publications would show that many of these fields overlap, revealing a network of social regularities and often injustices, which Dr. X considers as motives for social change. For example, when it comes to the area of social injustice, there have been volume-length studies on race relations in the US, as well as studies and research on other forms of discrimination, such as discrimination based on gender, ethnicity, space, age, etc. Such an epistemological and methodological scheme is visible and well combined in other research fields, e.g., disaster studies and the relation between vulnerability and some of the social and economic features of a group.

Qualitative assessment of the selected research fields

Professor X's educational philosophy of adults as "Teaching philosophy from scratch"

Considering the purpose and length of this paper, I will limit my assessment mainly to Dr. X's work in most recent papers related to the teaching of philosophy, reviewing some of the relevant issues in different publications.

Considering previously elaborated issues, exploring the teaching of philosophy from scratch could be seen as a blend of students' motivations and Professor X's distinct teaching style at Lehman College, City University of New York (CUNY). In the subsequent brief depiction of this technique, I intend to describe and then investigate whether these statements possess educational, philosophical, and sociological implications.

From a sociological perspective, Professor X used this approach with students who were already adults, mainly with jobs, and socially and economically independent but with the responsibility of supporting their families' social and economic existence and status. Most of them were immigrants who were introduced to college education for the first time. Thus, the educational channel of social mobility, as the main channel of vertical social mobility, is practically the entry into the American dream for immigrant students. The utility of learning philosophy in a systematic way, i.e., syllabi, can enhance the opportunities of applying accepted knowledge to different tasks in their professional and personal lives.

From the educational and philosophical perspective, the teaching is generally based on the assigned texts and theoretical basis in a different philosophical field. According to the author, students mainly focus on their grades without extra academic motives and practice. They mainly stretch their writing assignments and activities to the end of the semester. However, the syllabi require weekly assignments with citations, which prevents the previous instrumentalization of the learning process.

Comparing the students-professor relationship at two universities (Oregon and CUNY), Professor X emphasizes a more relaxed approach to the educational process by students who are not immigrants, and those who are at a younger life stage, from those who are adults, who have jobs, and who have existential and social obligations to their families. For example, in the first case, students called X by their name, the opposite of adult students who addressed them with their title, i.e., Professor X.

Considering the previous description, teaching philosophy or teaching from scratch has an educational function and an important social role (Weiler Gur Arye, 2022). In other words, teaching philosophy from scratch sociologically means enabling someone with expert knowledge to utilize their philosophical education to climb the social ladder. However, the following analysis will also show the feedback effect of sociological factors on teaching philosophy in the classroom and reveal a rich network of intertwined educational philosophies and styles.

Professor X's Self-reflection on philosophy

In this section I examine the dynamic interplay between philosophy as a field of study and as a profession, particularly in relation to Professor X. Their teaching philosophy is evident in various institutional and social settings, as indicated by previous analyses of this relationship. An examination of syllabi from different courses and relevant publications suggests that they have developed their teaching approach in response not just to faculties' expectations, but also to social requests and student expectations during critical events and times.

To provide context for Professor X's responses to the teaching challenges they face, it is important to first explore how X reflects on their own different encounters with philosophy. Then it is important to understand the specific demographics of their students and the resources available at different universities. During high school, they were introduced to philosophy when a social studies teacher assigned X to write a report on the concept of the "golden mean" from Aristotle's Nicomachean Ethics. Even though they had an intuitive grasp of the concept at the time, it took some time for X to understand the operational significance of the concept. Professor X utilized concepts of racism and disasters in their publications and teaching, juxtaposing them with opposing ideas such as justice and normalcy.

The second encounter with philosophy was primarily discussed in the part focusing on Professor X's social and professional history. It mainly encompasses their time studying at Columbia and the challenges they faced in selecting their PhD topic, ultimately rejecting the offer to teach at the Philosophy Department. Following a concise review of their unstable business career, they ultimately opted to return to philosophy after a twenty-year break.

The third encounter was partly described in the previous section. I analyzed their experiences with philosophy at three different universities using objective, quantitative measures. Taking teaching seriously is a priority for management at all three universities. Professor X agreed and elaborated that this is correct as they are compensated for their teaching responsibilities. Nonetheless, the dominant ideological currents at the university or department might impact teaching approaches or styles producing some instability (Smith, 2022). Professor X's academic role at SUNY, Albany was described as unconventional within a traditional department, whereas at Oregon University, X was the gatekeeper of the traditional philosophical canon. In the beginning, X produced papers on mixed race (Zack, 1992; Zack, 1996) and the Lockean concept of ownership (Zack, 1992a). They

delivered foundational philosophical courses at all three universities, initiating teaching on novel subjects while employed at Oregon University and Lehman College (CUNY) (see previous sections).

They identified five challenges in teaching from scratch while working at CUNY. Since returning to academia in 1990, X has noticed a steady decline in students' preparedness to read, including the syllabus. X's teaching at Lehman College highlighted certain issues concerning the demographics of the majority of the student population. In the beginning, a majority of students have a negative attitude towards reading, especially when dealing with syllabi. The primary task for all courses is the evaluation of crucial components of the syllabus, and additional tasks will not be accepted until that is accomplished. Numerous students have an antipathy towards writing, a vital component of philosophy. X stresses that English is not the first language for most of them, and Professor X frequently focuses on what they write rather than how they write (Atkinson, 2014; Atkinson et al., 2007; Zack, 2021). Most people prefer not to speak or display their knowledge, but they all desire to obtain a college degree. X emphasized their role as an educator because X has control over the grades in specific classes. While the student may not be fully prepared for college, they make a concerted effort to navigate the bureaucratic and electronic complexities, indicating a strong motivation to pursue their studies. Nonetheless, it is clear that X identifies more with the role of an educator than an administrator. Most students rely on the teacher but are still highly independent, making it difficult for the teacher to dictate their actions. As previously indicated, they are adults with families, jobs, and other responsibilities that might influence their academic obligations. Professor X argues that they are highly professional and willing to abide by the rules (Zack, 2021). They accept even that making exceptions for them would be unfair to others in similar situations who do not request it. Also, their interaction with the teacher is typically more professional in comparison to the younger students at the previous universities.

Professor X highlights a dual future for teaching philosophy, as this paper examines the fundamental aspects of its epistemology. The concept of duality encompasses both inclusive pedagogy and scholarly attention, similarly to the comparison between inclusive pedagogy, inclusive democracy, and individual well-being.

Concrete examples of Professor X's teaching philosophy will be examined through further critical analysis of relevant studies in the following section.

Moral theory and Social justice in Applied Ethics for Disasters

This analysis will reveal the fundamental principles of Professor X's teaching philosophy. Specifically, they utilize fundamental philosophical principles in novel courses and research. Professor X expects the students to employ the same reasoning in reaching their social and professional goals. Professor X has published a second edition of the major study in disaster ethics. Disasters have been accepted as mere risks in normal life (Zack, 2023). COVID-19 is used as a prime example. The virus is still present and will live with us, but it is no longer a matter of urgency, except for those infected. It may be argued that catching a virus as an everyday risk is different from natural hazards, e.g., wildfires,

avalanches, coastal flooding, cold waves, drought, earthquakes, hail, heat waves, hurricanes (tropical cyclones), ice storms, landslides, lightning, riverine flooding, strong winds, tornadoes, typhoons, tsunamis, volcanic activities, extreme winter weather. However, this narrative does not weigh the various risks we live with, but it instead refers to the new (global) sentiment regarding disasters. The first part of the book mainly focuses on ethical issues or approaches to preserving lives from natural disasters. Professor X is categorical in concluding that instead of saving the greatest number, we must be oriented towards preparedness and the response of saving all who can be saved. From an everyday perspective, when we think about natural disasters, we often consider certain risks. However, juxtaposing the risks we are living in and the fact that not all disasters are unpredictable develops one possible way of enhancing our resilience. The latent issue that this second edition of the book opens is that of the consequences of this narrative of disasters as yet another risk that we need to live with. Would such narratives in global media and everyday speech develop defeatism, apathy, and resignation instead of timely preparation for daily life? Such issues put more pressure on solidarity, deontology, and general scientific evidence, which help us predict, resist, survive, and live with some of the risks, with the best chance of survival for all those who could survive.

The second major example provided in the new section of the book is climate change. But why would Professor X use the example of climate change which, from the point of view of daily living, may appear to be an invisible social and natural hazard?

From reading this part, I comprehend climate change to be a meta-disaster. Such a disaster is slow but progressive. As such, these disasters tend to hit the entire planet, bringing a wide range of sudden natural hazards and social conflicts. In such a situation, the crucial factors are time, as a common issue, and the potential of anticipation, which is often the issue of an individual or a narrower group. Anticipation requires a perspective for creating a future action, plus a retrospective of the already completed action. Such potential simultaneously consists of a plan and a motive for action to survive and thrive. This is an inner feature of Resilience (Mitrović, 2015). However, denial of climate change, deconstructing or erasing a retrospective of it, i.e., treating climate changes (past and future) as too far, unique, and unrepeatable events.

In this short assessment of this study, I would not completely agree with the *conclusion* that "The preceding chapters do not admit any conclusion in the sense that anything has been 'proven'" (Zack, 2023).

In *stricto sensu* of scientific discovery, that may be true. However, plenty of "discoveries" and "proofs" are scattered through different parts of the book and related to various disaster issues. Here are two disaster examples that "prove" Dr. X's proposition to save all who can be saved with the best preparations. There is no difference between intentional consequentialist flooding of one region of the country in order to preserve two or more regions, and transforming all hospitals into COVID-19 clinics during the recent pandemic. The principle of saving the greatest number is applied. When compared, climate change denials and the general wish for normalization of life during the COVID-19 pandemic appear to be different sides of the same coin. Both the denial and the general wish imply status quo, or social apathy. That means, in practice, slimmer chances of survival for those

who are discriminated against, regardless of whether they are less resilient due to racial, geographical, climate, or social background. Both examples exposed a lack of preparation, decreased resilience of the most vulnerable, and indicate which ethics we should apply (with case-by-case fine-tuning) in future disasters.

In the book about the political crisis in the USA during the COVID-19 pandemic, Professor X (Zack, 2021) reveals that some disasters, in this case, the pandemic, become a matter of crisis management and not management based on adequate preparations, that the shortages of daily living led to some long-term crises exploding, which all in all calls into question the legitimacy of the system and confirms that disaster management in such situations does not depend very much on governments, but on experts, in this case, medical personnel, public health professionals, but also volunteers, ready to help in saving lives.

In addition, this study pointed out the dangers for the most vulnerable groups and individuals in such situations. The forms of discrimination (ageism, racism, nationalism, aversion and ignorance of homelessness, etc.) were proxies in saving some lives at the expense of others. The political crisis during the pandemic evoked or exposed various forms of racism and discrimination.

All those relevant issues were partly starting to be developed in a series of very important articles and chapters in anthologies that have provided an analysis of disaster management ranging from local (US) surroundings to cross-cultural and cross-national perspectives. Here are some examples: discussing an existential difference between human security and homeland security, from the perspective of moral theory and social contract theory. Those essential issues are related to organizational and ethical problems in disasters. The differences and crucial similarities between vulnerable groups are discussed in the context of cross-national, political, and cultural responses in various disasters (New Orleans, Haiti, and Chile) (Zack, 2012), and further the global issues of disaster planning, and preparations *vs* response are discussed. A sociological and philosophical analysis of altruism and apathy as endpoints on the axis of social action in saving lives among the most vulnerable groups in today's society is published in one co-authored chapter. Even more, this study addresses the issue of slow disasters, which do not differ from sudden ones in their effects and consequences (Mitrović & Zack, 2018).

All those studies led to the creation of the recent narrative of "Disasters as a Risk World," which, with the concluding "Code for Ethics for Disasters," enabled all responsible social and political actors, researchers, and students around the world to construct a methodology for setting adequate managing tools and studying future disasters, be they slow or sudden, local or global.

Discussion of Professor X's educational style and philosophical research interests

The academic career of Professor X has lasted for thirty-four years, not counting X's graduate and PhD studies at Columbia University. In this period (since 1990), they have taught the main philosophical courses and disciplines, ethics, moral theory, and the philosophy of Hobbes, Locke, and Descartes, but also those which are part of an innovative

and applied philosophy, such as philosophy of disasters and philosophy of race. Professor X (e.g., 1993, 2002, 2005, 2011; 2015) has been among the most relevant philosophers who have discussed concepts such as "mixed race" through a series of philosophical articles and books. From 1993 until 2015, Professor X made a significant impact on philosophy and the social sciences by combining and applying the concepts of social contract, social justice, and moral theory in the philosophy of race, the philosophy of women's studies, and the philosophy of disasters.

The previous section on Professor X's teaching activities and publications showcases X's teaching and philosophy responses to all presented issues at the micro and macro levels at the beginning of this study. First, faculties' expectations about balancing research and teaching are presented through 285 publications, while several more are in the process of publication. A large number of them are books (21), anthologies or chapters (26), and articles (33) with high-impact factors whose research focus corresponds with the topic of courses.

Second, the professor's expectations from students. In one representative period of about 15 years, Professor X taught courses for 3,321 students with an average of six courses per year. That is 190 students per year, double the number of the national average in philosophy studies.

Professor X was an advisor or member of a PhD committee for 58 MA theses and doctoral dissertations (1992-2020). During the last few years, Dr. X's students have authored and defended a considerable number of philosophy doctorates in the US on relevant topics.

This paper explores the social and educational context as well as personal teaching styles in sections three and four. Educational philosophy is essential for the educational philosophy and duality of philosophical teaching (studying and doing philosophy). Syllabi in different fields are informed by scholarly research and commonly have a philosophical, theoretical, and empirical underpinning.

The sections on Professor X's social and educational background and on their teaching of philosophy and research activities illustrate the contrasting social and professional progress of Professor X and their students. X decided to leave academia after successfully completing their studies and defending their PhD thesis at Columbia University, and ventured into a business opportunity that was not as successful. X thought that engaging in philosophy was a misconception, which led them to decline a job in academia and ultimately relinquish philosophy as both a career and a tool. By drawing on philosophical concepts found in course materials, X steers their students towards achieving higher social status through their teaching methods. However there are also sociological issues which have supported X's personal teaching philosophy. Professor X's explanation for switching their major from psychology to philosophy during their senior year of studies lies in the following reasons. The change was influenced by the philosophy course's focus on active teaching methods and the psychology course's emphasis on passive teaching methods. It could be concluded that the low academic performance of students can be attributed to various factors, but ultimately, the reason lies in the teaching approaches. With outdated and ineffective teaching methods, students may struggle to grasp complex

concepts and fail to reach their full potential. Therefore, it is crucial for educators to continuously evaluate and adapt their teaching approaches to ensure the success of their students and their expectations. The ethical guidelines established in Professor X's disaster studies suggested applying a uniform approach to all students when it came to meeting their course requirements and completing assignments. Even more, the students accepted this rule as a channel of social solidarity and academic communication with Professor X.

The comparison of quantitative and qualitative analyses of Professor X's research works and syllabi is essential for assessing the harmony between teaching domains and the research priorities of teachers' philosophies. Ethics and foundational philosophy are the main themes of the courses that have the highest number of students (about 60%), and they are followed by works on race philosophy, politics, philosophy and feminism (about 40%). During a brief time frame, courses focusing on contemporary social issues such as disasters, gender, social injustice and homelessness were taken by approximately 40 percent of students and were followed with the same percent of publication on the same topic. Following institutional expectations, suitable and balanced research projects and dissemination accompany the educational emphasis. Specifically, X's lectures and articles mainly focus on the last-mentioned topics, taking into account two crucial monographs about disasters discussed in the subsection on applied ethics in disaster and crisis management. In greater detail, the last subsection additionally discusses the continuity of X's recent publications and courses that have been offered sporadically over the last thirty years. I endeavor to encompass all relevant factors essential for comprehending individual educational approaches in courses that are offered either continuously or discontinuously (Table 5).

Table 5
Teaching philosophy styles in different settings: self and student perspectives

Teaching styles	Teaching at various Universities								
	SUNY			OU			CUNY		
	BA	MA	PhD	BA	MA	PhD	BA	MA	PhD
Expert	+	+	+	+	+	+	+	+	+
Formal							x	x	x
Personal				x					
Delegator	X								
Facilitator	X								

Note. + self perspective; x student's perspective

Besides this educational and philosophical comparison, honors and awards are sociological markers and acknowledgment of someone's individual achievements and endurance during their career. This indicator also assists in recognizing specific teaching methods as expert and formal. Professor X has received about 30 awards at different Universities (Lehman College, CUNY, Oregon, Albany, Columbia). Some of them are Pacific

Division, American Philosophical Association, 2021, John Dewey Lecture, Phi Beta Kappa-Romanell Professorship, 2019-20, United Academics, University of Oregon, Strong Voice Award, April 2019, Martin Luther King Award, University of Oregon, January 2016, United University Professions Nuala McGann Drescher Affirmative Action Leave Award, 1994-5, General Education teaching award, 1994, Woodrow Wilson College Teachers' Dissertation Fellowship, 1969-70, and Phi Beta Kappa, New York University, 1966.

In addition to the achievements that earned them these awards, there have been more than ten memberships and a large number of external reviewers' roles in highly esteemed editions and publications, various promotions, and invited international and national plenary talks on disaster justice, human security and vulnerability in Copenhagen, Tokyo Paris, Oxford, Monterey, Oregon, Belgrade, etc. Part of my personal research observation of Professor X's career as a philosopher is that they have been no less curious about all relevant and often very hot social topics. Professor X remains a highly creative, imaginative, and exciting interlocutor who inspires colleagues and students.

My detailed research into Dr. X's academic activities, which has been based on objective biographical and professional indicators, indicates that Dr. X has worked in a balanced way during their career teaching philosophy from scratch. However, in discontinuity and in accordance with actual social events, they have used classical and basic philosophical works to broaden relevant social and ethical issues such as vulnerabilities and injustice in disasters and crises, which has been part of this balanced approach as a practicing philosophy outside and inside academia. This moral and social vigilance is applied in teaching philosophy from scratch. It finally equips students with academic and life skills for ethics, adaptability, and thriving in their professional and quotidian lives.

Conclusion

Teaching isn't an isolated endeavor. It's enriched and informed by research and publishing. This link enhances the quality and depth of education. The expanded definition of teaching philosophy emphasizes educators' multifaceted role. Effective teaching combines classroom instruction, research writing, and public engagement, which fulfills most social and educational issues, whether they are part of the micro or macro levels of institutional, systemic, or student expectations. Delving into the specific research-teaching connection provides a nuanced understanding. Educators can integrate their reflections on their education and research into their pedagogical methods. This benefits pupils and the wider academic community. Although this study is just one step to understanding these key concepts, it allows educators and policymakers to appreciate the comprehensive nature of teaching philosophy. It encourages a more holistic approach to teaching, one that values integrating research and public engagement with customary educational practices.

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Šta u stvari znači „Nastavna filozofija"? Studija slučaja: nastav(n)e filozofije Profesora Iks

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Apstrakt *U visokom obrazovanju, nastavna filozofija predstavlja ključni alat za sprovođenje i procenu kvaliteta nastave. Ipak, postoji ograničen fokus na istraživanje njene suštine. Nastavna filozofija može se tumačiti kao strategija u obrazovanju i pedagogiji koja prikazuje kako se nastavnici suočavaju sa procesom nastave, obuhvatajući i pedagoške i obrazovne aspekte. Drugačiji pogled na nastavnu filozofiju uključuje direktno prenošenje filozofskog znanja sa nastavnika na studente. Kvalitativna studija u visokom obrazovanju istražuje se analizom socijalnog i obrazovnog porekla profesora X (Iks), predavanja u različitim okruženjima, metodologije profesora u podučavanju filozofije od osnova, kao i šireg akademskog rada profesora, koji uključuje pisanje, istraživanje i javne prezentacije. Istraživanje ispituje nastavnikovu samorefleksiju o filozofiji i razvoj „nastavne filozofije od nule", istražujući kako ona podržava nastavnike u proširenju filozofije izvan uobičajenih akademskih okruženja i specifične nastavne filozofije. Nalazi ukazuju na postojanje veze između nastavnih metoda i istraživačko-publikacionih aktivnosti. Rezultati prevazilaze tipične asocijacije kako bi se istražila suština veze između istraživanja i nastave. Ovo zapažanje produbljuje naše razumevanje značenja „nastavne filozofije" kao raznovrsnog procesa koji uključuje nastavu, pisanje, akademske aktivnosti i javne doprinose.*

Ključne reči: *nastavna filozofija, visoko obrazovanje, pedagogija, studenti, obrazovni i istraživački stil.*

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Original research paper

Social Class and Gender in an Equation of Students' Mathematics Identity[1]

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Abstract *Addressing the achievement gap in mathematics across social class and gender is essential, as mathematics is widely seen as a pathway to social mobility and a tool for breaking cycles of inequality. This study adopts a Bourdieusian perspective and the concept of mathematics identity (MI) to investigate the factors that hinder or support disadvantaged students in identifying with mathematics. Thematic analysis of semi-structured interviews with six disadvantaged fourth- and fifth-graders revealed systemic challenges shaping their MI. From their first encounters with school mathematics, these students face barriers that undermine their confidence and foster negative self-perceptions. While they recognize the societal importance of mathematics, they feel personally and academically disconnected from it, resulting in tensions in their relationship with the subject. Rather than following the institutional requirements for developing mathematics competence, these students focus on short-term academic goals. Gender differences also emerge, as boys appear to benefit slightly from aspects of their MI being reinforced by their gender identities, though this advantage comes with added pressures and responsibilities. In contrast, the gender identity of girls from disadvantaged families often further contributes to the negative construction of their MI. Improving mathematics education for disadvantaged students requires teachers to recognize and address systemic barriers, such as implicit rules, biases, and hidden messages, while creating opportunities for all students to find mathematics meaningful and feel a sense of progress. However, true equity goes beyond teachers and demands systemic changes, starting with curriculum developers and teacher education programs, to redefine school mathematics as an inclusive domain for all.*

Keywords: *mathematics identity, social class, gender, cultural capital, inequity.*

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Introduction

> *The education system continues to favour those whom it has always favoured—those of higher socioeconomic status and those who know how to work the system and have a "feel for the game"* (Bourdieu, 1990, p. 9).

Mathematics is widely seen as a gatekeeper to social mobility, making inequity in mathematics education a significant concern. It is viewed as essential for accessing higher education, even in fields with minimal mathematical content. Moreover, mathematics qualifications are crucial for many careers and are linked to higher salaries, positioning mathematics education as a major determinant of students' future opportunities (Gates & Vistro-Yu, 2003). However, while mathematics holds the potential to act as a catalyst for social mobility, it more often functions as a mechanism for preserving the status quo, as its curriculum and practices are frequently structured in ways that disproportionately favor those who are already privileged (Gutiérrez, 2013; Jorgensen et al., 2014). The state of mathematics education is especially concerning for students from socioeconomically disadvantaged backgrounds, who will be referred to by the term 'disadvantaged students' in this text. According to the latest PISA results (OECD, 2023), the achievement gap between the most advantaged and disadvantaged students is 93 points across OECD countries (81 points in Serbia), equivalent to over four years of schooling. Additionally, 47% of disadvantaged students, compared to just 14% of their advantaged peers, score below basic proficiency in mathematics. Low socioeconomic status (SES) also negatively impacts aspirations for pursuing mathematics-related careers and further education (Jagannathan et al., 2018; Saw et al., 2018). In explaining these achievement gaps, research has traditionally relied on deficit frameworks, such as the "culture of poverty," which attribute these gaps to a lack of predispositions for success among disadvantaged students and their families (Gutiérrez & Dixon-Román, 2011). The current study adopts a different perspective, aligning with research that takes a social (Lerman, 2000) and sociopolitical turn (Gutiérrez, 2013), focusing instead on the obstacles created by dominant societal and institutional discourses and practices.

Class, gender and mathematics education

The gap between the social, economic, and cultural capital possessed by students and their families and the expectations set by schools has long been recognized as a central force driving the persistence of class-based inequalities in mathematics education and outcomes (Jorgensen et al., 2014). SES is a strong predictor of not only mathematics but other types of literacies as well (OECD, 2023). Among the SES indicators, parental education shows the strongest prediction power (Reardon, 2018). Parents' educational background shapes their interactions with children and the support they provide for school activities (Magnuson, 2007). Parents with higher levels of education tend to exhibit more positive attitudes toward school mathematics and employ more

effective motivational practices (LeFevre et al., 2009; Mićić & Baucal, 2022). Furthermore, research highlights that high SES parents are more likely to engage their children in mathematical activities during everyday play compared to their low-SES counterparts (Vandermaas-Peeler et al., 2009). Beyond parental education, financial factors also play a critical role in shaping math achievement. Namely, financial constraints can significantly limit access to enriching extracurricular opportunities, such as private tutoring or summer camps, and restrict the availability of stimulating educational resources, including books, computers, and educational games (Duncan et al., 2014). Parents in low-income households often face significant time constraints, further limiting their capacity to support their children's learning (Davis-Kean, 2005). Moreover, studies have described differences in home cultures and parental practices across social classes and linked them to intergenerational reproduction of class inequalities. For example, Lareau (2018) identified "concerted cultivation" among middle-class parents, involving structured activities to nurture children's talents and align with school expectations, boosting academic success. In contrast, parents in working-class and low-income families often adopt a "natural growth" approach, focusing on meeting basic needs while allowing their children more freedom and less-structured environments for development. Lareau argued that these parenting differences arise not only from income disparities but also from differing cultural beliefs and practices.

These findings are often interpreted through various ideological lenses, each carrying distinct implications for the role of schools and educators. One of the most prevalent interpretations is rooted in deficit ideologies, which attribute social and educational inequalities to perceived shortcomings within individuals and communities that underperform academically (Gorski, 2012). Such ideologies serve to legitimize existing inequalities while shifting the responsibility for students' achievements onto students themselves and their families. However, what these perspectives fail to recognize is the one factor universally shared by those living in poverty: inadequate access to resources and support (Jovanović, 2017) and the way this shapes their (educational) experiences and outcomes. Therefore, in contrast to deficit-based models, certain lines of research shift the focus to the social practices that create and sustain systemic and structural barriers within mathematics education. Drawing on Bourdieu's framework, scholars highlight the non-alignment between the cultural capital of these students and the demands of mathematics education. They argue that children from affluent backgrounds succeed in mathematics because they enter school with the "right" habitus, unlike their disadvantaged peers (Jorgensen et al., 2014; Lerman, 2020). Habitus is a concept introduced by Bourdieu (1984), referring to a set of dispositions, habits, skills, linguistic repertoire and behaviors. According to this view, students from affluent families are successful in mathematics because their home-cultures cultivate habitus that closely align with the practices, rules, and expectations of the mathematics classroom. These practices, rules, and expectations – the field (Bourdieu, 1984) of school mathematics – are a product of social relations that define the mathematics curriculum and didactics, the vision of a successful student and his/her proper behaviour, and other aspects of mathematics education. For example, students from middle-class families are more likely to enter school already

familiar with certain pedagogical practices, as they have likely been exposed to informal educational games that follow similar rules (Lareau, 2018). Thus, habitus shaped in affluent families has the form of cultural capital that can be exchanged in the school economy for rewards such as grades and certificates, because it matches its rules. In contrast, disadvantaged students' habitus does not align with the practices of school mathematics, so it must undergo a transformation to be able to achieve success (Zevenbergen, 2000). Therefore, the kind of "virtual school bag" (Thomson, 2002) that students from disadvantaged families bring to school lacks the equipment required in a mathematics classroom. This affects their sense of belonging in the mathematical community and various aspects of their learning, which then becomes reified, reinforcing the perception of a natural (in) ability (Jorgensen et al., 2014).

While this perspective clearly highlights the social structures and dominant social norms and beliefs that create and sustain educational inequalities, it tends to overlook the complexities of identities within underprivileged groups. For instance, the gender gap in mathematics education has long been attributed to the now disproven assumption that boys and girls possess inherently different mathematical abilities. The social nature of this gap has been supported by historical data (OECD, 2023), cross-national and cross-cultural data (Holmlund et al., 2021; Mićić & Blažanin, 2024) and through meta-analyses (e.g., Hyde et al., 1990; Lindberg et al., 2010). Still, compared to boys, girls tend to have less favorable emotional responses to and motivation for mathematics, and they are less likely to pursue further education or careers in mathematics (OECD, 2015). This gap is often attributed to the persistence of traditional values associated with mathematics, such as competitiveness, independence, rationality, rules-following and speed (Mendick, 2005). These values reinforce narratives that align mathematics with male gender roles, thereby limiting the space in which women are seen as capable of succeeding in mathematics (Solomon et al., 2011).

Research focusing on class-based differences in mathematics education and gender-based differences tends to be treated separately, overlooking the experiences of girls from disadvantaged backgrounds in mathematics. A limited number of studies adopting an intersectional perspective reveal that girls from disadvantaged families are among the most disengaged, which negatively affects their math achievement (Cascella, 2024) and STEM aspirations (Saw et al., 2018). These findings underscore the importance of exploring inequalities in education as systems of interaction between social structures, dominant beliefs and norms, and identity constructions that are context-specific, complex, and inextricably linked to these dominant social practices and structures (Winker & Degele, 2011).

Building on this line of thinking, some authors advocate for a more inclusive mathematics education through an analysis of students' mathematics identity (MI). This concept links learning to the cultural context in which it occurs (Radovic et al., 2018), enabling a more comprehensive examination of issues such as low motivation, poor achievement, discontinuation of mathematics education, and disparities among student groups without relying on deficit-based explanations (Grootenboer & Zevenbergen, 2008). Instead, MI helps us understand how societal practices and discursive patterns—found in mathematics

curricula, teaching methods, textbooks, and beliefs about mathematics and mathematicians—shape students' self-perception as participants in mathematics education. These factors influence both the process and outcomes of mathematics education (Grootenboer & Zevenbergen, 2006). The next section further discusses the concept of MI.

Mathematics identity and ways of belonging

The concept of MI has gained attention because it provides a framework for understanding disengagement and underachievement in mathematics, viewing these as failures to establish a sense of belonging in the mathematics community rather than a lack of ability (Darragh, 2013). MI emphasizes how a student's sense of self as a member of the mathematics community is shaped by their experiences and the social interpretation of those experiences (Anderson, 2007; Wenger, 1998). This social interpretation includes both the socially constructed discourse that offers narratives, roles, and categories for students to identify with, as well as the feedback they receive from others in the community, such as parents, teachers, and peers. Since many identity-related processes are dynamic, a person's identity is always evolving, shaped by their participation—or lack of it—in the community (Wenger, 1998). An identity mediates a person's interpretations, actions, motivation, behavior and aspirations (Holland & Lachicotte, 2007). Thus, MI impacts a student's approach to learning mathematics by influencing their motivation, selection of learning strategies, time spent in learning, aspiration for continuing mathematics education or pursuing a career that involves mathematics, and so on.

MI research examines how students identify with school subjects, viewing them as role identities shaped by expectations tied to specific domains (Burke & Stets, 2009). MI is influenced by other aspects of identity, such as personal identity (e.g., identifying as smart, rational, or competitive) and collective identities (e.g., class, gender, or ethnicity), which can either support or hinder MI development (Burke & Stets, 2009; Eccles, 2009). Since mathematics curricula, teaching practices, and assessments have historically favored white middle-class males (Gates & Vistro-Yu, 2003), achievement gaps across gender, class, and ethnicity may stem from challenges in identifying with mathematics due to these other identity factors, rather than inherent disparities.

A suitable framework for examining the challenges of identifying with mathematics is Wenger's (1998) concept of "ways of belonging," which describes three processes of identification with a specific community of practice: engagement, imagination, and alignment. Building on this framework, Anderson (2007) outlines three ways of belonging to the mathematical community, or three processes in constructing MI:

Engagement in the mathematical community means actively participating in tasks, working with peers, and interacting with teachers. This involvement helps students understand mathematics and evaluate how well they fit into the community. Their engagement influences both how they see themselves and how others perceive them, shaping their sense of belonging. Students who are recognized for their contributions are more likely to view themselves as capable and valued members of the community, while those who struggle may feel excluded or less competent.

Imagination refers to how individuals see themselves in the wider world, including their connection to the mathematical community beyond the classroom. It depends on how students perceive the relevance of mathematics in their lives, such as its connection to daily activities, personal interests, values, or career goals. Some may view it as essential, while others may see it as unnecessary. The imagination influences how students relate mathematics to their desired and possible future identity, shaping their engagement in the mathematical community.

Alignment is the process by which students adjust their efforts to meet institutional expectations. In the context of mathematics, students take certain actions based on implicit or explicit expectations of what mathematics is and who is considered a good mathematician. For instance, those who view advanced mathematics as valuable and important will follow the recommended pathways, while others may only meet the minimum requirements and may not develop a strong sense of MI. Alignment interacts with both imagination and engagement, influencing how students see themselves and their relationship with mathematics.

The current study

This study aims to explore the interplay of poverty, gender, and students' participation in the mathematical community—factors that are often examined in isolation within mathematics education research. By focusing on the construction of mathematical identity (MI) among students from socioeconomically disadvantaged backgrounds, the study uses the framework of "ways of belonging" in a community as a lens for understanding identity construction (Wenger, 1998), which Anderson (2007) adapted to school mathematics. Additionally, it employs a Bourdieusian perspective, highlighting how the construction of students' MI is shaped by the disconnect between their home cultures and the expectations imposed by the school environment. Moreover, the research investigates how class and gender interact within the context of the mathematics community to shape MI. The aim is to identify both the barriers to participation in the mathematics classroom and the factors that hinder students' identification with the subject, while also highlighting supportive mechanisms that could be leveraged to strengthen students' positive MI. The study is guided by two key research questions: (1) How do disadvantaged students construct their MI through different ways of belonging to the mathematical community? and (2) How do class and gender interact to shape the process of MI construction?

Method

Participants

The study involved six students from disadvantaged backgrounds balanced by gender and grade who were selected from a larger dataset[3]. The participants included

3 Data used in this study were collected as a part of a doctoral project approved by the Ethics Committee (protocol number: 2020-51).

three fourth-grade students (two girls, one boy) and three fifth-grade students (two boys, one girl), all enrolled in three primary schools in peripheral Belgrade areas. SES was approximated using parents' employment status, education level, and the number of books in the household, which has been proved a reliable SES proxy (OECD, 2005). Only students with parental consent and who verbally agreed to participate and be recorded were included.

Data collection

To explore how students construct their MI, interviews were conducted using guidelines for interviewing children (Cohen et al., 2017). The semi-structured interviews followed a four-phase structure: (1) establishing rapport and gathering general information, (2) reflecting on critical incidents that shaped their relationship with mathematics using The Mathematical Life Story approach (Lewis, 2013), (3) discussing their participation in the mathematics classroom as their primary mathematics community, and (4) mapping their MI (Ylvisaker et al., 2008) by exploring their activities, emotions, motivation, and perceptions of others. A similar framework had been successfully applied in a previous study with slightly older participants (Radovic et al., 2017). Conducted in the school setting, the interviews lasted between 23 and 43 minutes, averaging 31 minutes, and were recorded and transcribed verbatim.

Data analysis

Although presented here as a sequence of steps for clarity, the analysis was iterative. Initially, we adopted a deductive approach to the data, drawing upon Anderson's (2007) adaptation of the three ways of belonging (Wenger, 1998) to guide our search for relevant illustrations in the participants' accounts. This framework was further operationalized through reference to existing literature on successful mathematicians (Picker & Berry, 2000; Aguilar et al., 2016; Mićić, 2024), which helped us identify specific behaviors indicative of positive MI alignment. Subsequently, we moved to an inductive phase of analysis, where we sought to explore how the different forms of belonging manifested within the accounts of our participants. This led to the development of a coding scheme, as presented in Table 1. In the third phase, we focused on the development of themes that encompassed the codes associated with each identity aspect. Throughout this stage, we paid careful attention to both the similarities and the differences in the ways our participants articulated their experiences of MI construction. The process of coding was carried out using MAXQDA 24 software.

Table 1
The coding scheme emerging from the analysis

Engagement	Imagination	Alignment
General idea about mathematics	Connection of mathematics with other interests and values	Presence of behaviors of students successful in mathematics:
Perceived mathematical competence	Perceived usefulness of mathematics	– Asked to help others
Critical experiences shaping MI	Plan for further mathematical education	– Participate in mathematics contests
Teacher's, parental, and peers' perception and feedback	Career plan and mathematics	– Study mathematics a lot
Distinguished groups in the classroom regarding mathematics and self-positioning within them		– Are passionate and love mathematics
		– Attend additional lessons
		Actual behaviors and actions regarding mathematics education
		Mathematics learning goals
		Nature of motivation for learning mathematics

Results and discussion

We present and discuss findings from our analysis describing different processes in constructing the identity of a mathematics learner: engagement, imagination and alignment. While many of the obstacles described in our participants' testimonies were directly linked to low SES, we sought to strengthen the reliability of our conclusions by incorporating findings from other studies. This allowed us to differentiate processes specific to this group of students from those that occur universally in the course of mathematics education, regardless of social class.

Engagement: chasing mathematics in the zone of future development

Our participants' experiences with mathematics revealed struggles that led to alienation and a negative self-image as learners. They described mathematics as difficult, confusing, and boring, with some wishing it "didn't exist." While negative attitudes toward mathematics are common (Dündar et al., 2014; Mendick et al., 2008), studies show individual variation, with some students having positive views (Hatisaru & Murphy, 2019; Markovits & Forgasz, 2017; Mićić, 2024). However, students in our study appeared strikingly united in their negative outlook on mathematics, indicating that it is more likely for a student with a disadvantaged background to come to a negative view of the subject. Such a perspective seemed to contribute to a sense of incapability and helplessness when

engaging with it. A female fourth grader's testimony illustrates how repeated obstacles and the absence of a sense of mastery undermined her confidence and motivation:

> *I don't look forward to math classes or studying math. (…) It's simply because math doesn't appeal to me. It seems hard and confuses me. (…) All those numbers somehow confuse me. Even when I understand a lesson, there's always something I can't quite grasp, and I never fully understand it. For example, with inequalities, I'm never sure whether I should… when I need to divide if it's already divided, or if I should keep multiplying when it's multiplied. And it's like that with every lesson—there's always something I can never fully get* [Girl K, fourth grade]

The negative relationship with mathematics began when students first encountered a gap between their competence and the subject's demands. For three students, this sense of incompetence started in first grade, while the other three experienced it in second or third grade. A boy explained:

> *Here* [In the first grade compared to preschool] *we worked on some, like, how to put it, a bit more complex things... And then it wasn't really clear to me, and I was a bit confused by that. So, then I started to like it less. Because after a while, it also got boring to do math because it was hard for me."* [Boy A, fifth grade]

A developmental decline in motivation and increasing alienation is a common trend in mathematics education, linked to the rising complexity of the curriculum as students progress through schooling. This trend affects many, though not all, students (Fredricks & Eccles, 2002; Gottfried et al., 2009). In Serbia, this decline is particularly pronounced during the transition from class to subject teaching (Mićić, 2024). Yet, all the interviewed students reported such feelings, with the most concerning finding being that, for them, this process begins much earlier than usual—often with their very first encounter with school mathematics. This finding underscores a systemic issue highlighted in the Bourdieusian accounts of inequity (Jorgensen et al., 2014; Gutiérrez, 2016): the mathematics curriculum places disadvantaged students before a significant initial hurdle. This early inequity sets in motion a vicious cycle of negative experiences, where initial struggles to "understand the game" of mathematics erode confidence and enjoyment, ultimately leading to cumulative disengagement and lower academic achievement throughout their education.

This conclusion is further reinforced by students' testimonies, which reveal how the gap between their competence and the demands of mathematics became particularly evident in the absence of support. One female student shared that her disengagement with the subject began when she encountered mathematics during remote education, a period shaped by the COVID-19 pandemic. The lack of teacher support and her parents' inability to assist her with learning made the subject increasingly difficult and, ultimately, uninteresting. Similarly, a male student described how his disengagement started when his grandfather, who had been his primary source of support in learning mathematics, moved away. Without his grandfather's guidance, he was left to navigate his studies alone, marking the beginning of his academic struggles.

J.*: By third grade, I started forgetting, and it became harder and harder for me...*

I: *What happened in third grade?*

J.*: My grandfather moved away, and I wanted my dad to teach me, but he didn't, he was busy because he had just opened the café. I tried on my own, but I couldn't do it. Mom was helping dad, so I couldn't do it with her either.*

While some students initially sought help from their parents, especially fathers, most eventually relied on external sources. Many recalled receiving tutoring from grandparents, uncles, aunts, neighbors, or friends' parents. The excerpts below highlight that, although family support systems were present, they were often deemed inadequate because they did not align with the methods of institutionalized mathematics. This discrepancy contributed to the students' feelings of incompetence and a sense of disconnection from the mathematical community.

M.*: In second grade, we started doing textual problems. Back then, my dad helped me every day because I didn't really know how to set up a problem. I knew how to calculate it—that part was easy—but I didn't know how to set it up. Then, my dad couldn't help me anymore. The teacher said I had started getting a bit confused because she explained it one way, and my dad explained it a different way. That's why it wasn't clear to me. So, I kept going to additional lessons whenever they were offered.*

In addition to their persistent struggle to keep up with mathematics, the students were often explicitly or implicitly negatively labeled by significant others. They report that their teachers perceive them as "bad at mathematics" or "lazy". This is likely influenced by teachers' stereotypes, which often view disadvantaged students as lacking the necessary abilities or attitudes for mathematics success (Szumski & Karwowski, 2019). Through a Bourdieusian lens, this is a reification of the misalignment of students' habitus and school demands (Jorgensen et al., 2014). The biased outlook shapes teacher-student interactions, reinforcing low achievement and perpetuating a cycle (Spencer & Castano, 2007). In addition, students felt that their parents and peers held low expectations from them as well, solidifying their negative MI.

The findings suggest that students from disadvantaged backgrounds often encountered mathematics tasks that exceeded their current capabilities—tasks situated within their zone of future development—while simultaneously receiving messages from their social environment that they were not expected to succeed. This combination likely contributed to the internalization of a belief that they were incapable of excelling in mathematics. Consequently, none of these students identified themselves as part of the group that succeeds in the subject. They viewed their struggles as insurmountable, leading to a decreased willingness to engage with the mathematics community. However, it is important to note that some of their responses were also influenced by their gender.

It seems that rules for boys and girls in our students' communities of mathematical practice are different, showing once again that mathematics is gendered regardless of social class (Saw et al., 2018). While subsamples of boys and girls were similar in their

mathematics achievement, their presentations of their MI differed. Although both groups generally relied more on effort-based discourses (Dweck, 2008) in their explanations of achievement, it seems that girls tended to present their low mathematics achievement as due to stable factors, while boys saw it as a result of changeable, controllable factors. This difference was evident in the way they attribute their performance to a lack of effort or interest (a boy: "*To be better at mathematics I have to study more, but I want to play*") or to a lack of talent (a girl: "*I feel really down and all when I see that I'm not good at math, and I see other kids doing well in math and everything. I just end up thinking, 'Why am I not as good at math as they are?'*"). This difference may reflect societal and interpersonal influences, as research shows the public (Mendick, 2005) and teachers (Di Battista, 2024) often attribute girls' failures in math to stable, internal factors and boys' to unstable, external ones. Our data also indicated that boys experienced greater shame about poor performance and negative MI than girls. This was evident in boys' attempts to sugarcoat their self-presentations, sometimes justifying their poor achievement ("*I could have had grade 5, but I didn't have the will to study.*"), offering more nuanced self-presentation, by including a dimension in which they could be positively evaluated (e.g., "*I belong to a group of students who don't like mathematics but are good at it*") or avoiding negative wording ("*I belong to a group of students who want to improve in mathematics*"). This can be interpreted in light of findings that suggest mathematics ability is often perceived as a male characteristic (Mendick, 2005; Solomon et al., 2011). As a result, poor performance in mathematics may be a heavier burden for boys than for girls, regardless of social class.

Imagination: the paradox of mathematical relevance

The analysis reveals a paradox in how students from disadvantaged backgrounds perceive their connection to mathematics beyond the classroom. On one hand, they expressed little intrinsic interest in the subject, with none of them viewing it as aligned with their hobbies, values, or goals. Their disconnection from mathematics appears more pronounced than what is typically observed in the general population (Boaler, 2002; Cobb et al., 2009; Mićić, 2024). This can largely be attributed to the struggles with school mathematics that have been previously described. However, another obstacle for disadvantaged students in envisioning themselves as members of the mathematics community may lie in their collective identities. Given the elitist stereotype of mathematics as a domain for the middle class (Mendick et al., 2008) and the fact that many students described their parents as also struggling with mathematics, it is possible that some students experience tension between their identity as mathematics learners and their collective class identity (Eccles, 2009), which traditionally does not align with success in mathematics.

However, all but one student recognized mathematics as important and useful, essential in everyday life, and unavoidable in many professions. This recognition of mathematics' general significance, coupled with a lack of personal connection to the subject or confidence in their mathematical abilities, caught our students in a burdened relationship with it. This dynamic reflects what Niss (1994) described as "the relevance paradox" best illustrated by the quote from his study: "Mathematics is useless to me, but at the same time

I know that I am useless without mathematics". It seems that the pressure of the social relevance of mathematics led to nearly all the students feeling they must continue learning mathematics at further levels of education, despite their disinterest and struggles with the subject. A female student explained:

J*: Well, I wouldn't want to completely remove math. You always need a little bit of math for anything, for everything. So, I wouldn't...*

I*: Why?*

J*: Well, simply because it's necessary in life and in almost every job. That's why I'd keep at least a little math, the most essential parts, but not too much.*

The question about the role of mathematics in students' envisioned careers also revealed a gendered pattern. Two girls expressed the intention to avoid it entirely in their future jobs, while a third believed that basic mathematics would be necessary. In contrast, all three boys felt that mathematics would be an essential part of their work, as illustrated by the excerpt:

L*: When I grow up, I want to be a truck driver.*

I*: A truck driver? And would you like to have to use math while driving a truck or not?*

L*: To drive a truck.*

I*: But would you like to have to use math as well?*

L*: Yes.*

I*: For what?*

L*: For mileage.*

I*: So, you'll still need to know it. When do you think you'll learn it?*

L*: I don't know.*

Once again, it appears that despite their low interest in mathematics, the boys feel they cannot entirely disregard it. It seems that in the interplay of boys' gender identity and their class identity (Eccles, 2009) the former serves as a protective factor for boys in regard to their mathematics aspirations, stemming from the belief that mathematics is a male domain (Mendick, 2005; Solomon et al., 2011). This gender identity, to some extent at least, supports boys in imagining themselves as members of the mathematics community beyond the classroom. However, at the same time, feeling the discrepancy between this notion of mathematics as something desirable for boys and their difficulty seeing themselves as genuinely belonging to this community seemingly provoked anxiety and shame in the boys, leading them to try to sugarcoat their MI as illustrated earlier. In contrast, the gender norms and expectations surrounding mathematics achievement for girls from disadvantaged backgrounds seem to contribute to their continued disengagement from the subject, both in and outside the classroom, reinforcing their negative MI.

Alignment: doing what those who struggle in mathematics do just enough to get thorough

The interviewed students most often didn't get the chance to walk the pathways of successful mathematics students described in other studies (Aguilar et al., 2016; Mićić, 2024; Picker & Berry, 2000). These students are never asked to help others in class, they don't spend hours working on mathematics problems that provoke their interest, they were never invited to enrichment classes, and except for one student they never participated in a mathematics contest. The student who participated in a contest found it enjoyable despite not performing well, showing that even an opportunity to engage in activities typically associated with successful mathematics learners is valuable.

Instead, school mathematics appeared to position the interviewed students as low achievers within their mathematical communities. Students' efforts are primarily focused on passing the grade or achieving the best possible grade to secure as many points as possible for high school. Engagement with school mathematics marked all of the students as in need of seeking extra help in learning mathematics. The most striking example is the girl who was told that she scored the lowest on an exam and that she was allowed to use a calculator – a gadget that is regularly forbidden in a classroom. Through directing them into these behaviors, which carry specific meanings in the mathematics classroom, the mathematics community implicitly informs students what "kind of people" they are (Anderson, 2007; Gee, 2001). And as a result, students come to view themselves as students who struggle with mathematics, reinforcing their position of non-belonging to the community (Wenger, 1998).

All three boys and only one girl stated they study mathematics not only for the grades, but also because they will need the competence in the future, showing that boys at least to some extent are aligning their actions with the mathematics community outside of the classroom. This once again shows that boys' gender identity and the cultural norm that mathematics is for boys can support their identification with mathematics, while girls are left with no leverage.

Conclusions and recommendations

Our study showed that disadvantaged students face systemic barriers from their earliest encounters with school mathematics, which erode their confidence and foster negative self-perceptions. To add to this struggle, disadvantaged students grapple with the paradoxical relevance of mathematics, recognizing its societal importance while feeling disconnected from it personally and academically. Their positive MI is further inhibited through an alignment with requirements aimed at meeting immediate academic demands rather than with developing a strong mathematics competence. Boys are in a somewhat better position than girls as some aspects of imagination and alignment processes can be based on and supported through their gender identities, but this comes with a burdening responsibility too. It's important to acknowledge that these findings

have limited generalizability due to the small sample size and the contextual variations in the meanings and practices of school mathematics. Future research should address these limitations by examining a more diverse sample across different educational settings.

Nevertheless, the study findings provide a strong basis for meaningful recommendations. Improvement of the experience of mathematics education for disadvantaged students starts with teachers' awareness of the issue. Evidence shows that teaching practices moderate the relationship between social class and academic achievement (Radulović et al., 2022), with teaching approaches rooted in constructivist principles helping to mitigate educational inequalities (Gundogan et al., 2020). Teachers need to be mindful of diverse forms of cultural capital and to respond to students' diverse knowledge, skills and experiences. In addition, they should make the "rules of the game" (Jorgensen et al., 2014) explicit, as these might be taken for granted by the majority but remain hidden for disadvantaged students. Our findings highlight the importance of addressing this from the start of schooling, as even the parts of the mathematics curriculum which are considered to be most basic can alienate disadvantaged students and create a difficult-to-break cycle. Further, teachers should be reflective and mindful of their biases which could be influenced by social stereotypes about class and gender. They should thoughtfully provide feedback and be mindful of implicit and explicit positioning and the messages they send to students. Teachers should make opportunities for every student to make progress and to find mathematics relatable and personally meaningful, which will positively impact all three processes of identification with the subject (Anderson, 2007). The perception of mathematics as an exclusive domain for certain social groups should be challenged, both in and beyond the classroom. This can be achieved through more inclusive teaching practices based on the constructivist paradigm, through diversification of mathematics role models, and by promoting cultural diversity within mathematics knowledge and history, for example through showcasing ethnomathematics (D'Ambrosio, 1985).

Although most of our recommendations are directed towards the classroom and teachers, we believe that change must begin at the top—with those who develop school curricula and teacher education programs. To make mathematics more equitable, the mathematics community needs to abandon its elitist views and traditions that prevent so many students from accessing it (Lerman, 1998; Jorgensen et al., 2014). Redesigning mathematics to make it more inclusive would not only benefit disadvantaged students but would also improve the mathematics education experience and outcomes for all students.

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Društvena klasa i pol u jednačini matematičkog identiteta učenika

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Apstrakt *Smanjivanje jaza u postignućima na polju matematike između društvenih klasa i polova od krucijalne je važnosti jer visok nivo matematičke kompetencije povećava mogućnost socijalne mobilnosti. Koristeći Burdijeov teorijski okvir i koncept matematičkog identiteta, ova studija istražuje procese koji ometaju ili podržavaju identifikaciju učenika iz porodica niskog socioekonomskog statusa s matematikom. Intervjuisano je šest učenika četvrtog i petog razreda kako bi se istražili i opisali njihovi matematički identiteti. Rezultati pokazuju da učenici porodica niskog socioekonomskog statusa nailaze na sistemske prepreke u školskom učenju matematike od samog početka, što dovodi do niskog samopouzdanja i negativne percepcije sebe. Ovi učenici prepoznaju društveni značaj matematike, ali se osećaju lično i akademski udaljeni od nje, što stvara tenzije u njihovom odnosu prema ovom predmetu. Ne usaglašavaju svoje ponašanje se institucionalnim zahtevima za uspeh u matematici, jer su usmereni na ispunjavanje kratkoročnih akademskih ciljeva. Dečaci imaju blagu prednost, jer se aspekti njihovog matematičkog identiteta mogu osloniti na njihovu rodnu ulogu, iako to nosi dodatne pritiske i odgovornost. Nasuprot tome, devojčice iz porodica niskog socioekonomskog statusa nemaju nikakvu osnovu na kojoj bi mogle da grade svoj matematički identitet. Poboljšanje matematičkog obrazovanja za učenike iz porodica niskog socioekonomskog statusa zahteva od nastavnika da prepoznaju i adresiraju sistemske barijere, uključujući implicitna pravila, pristrasnosti i suptilne poruke, uz stvaranje prilika da se svi učenici osete kompetentno i dožive matematiku smislenom. Međutim, prava jednakost zahteva sistemske promene, počevši od tvoraca kurikuluma i programa obrazovanja nastavnika, kako bi se uklonile tradicionalne prepreke i matematika redizajnirala kao inkluzivna i pristupačna oblast za sve.*

Ključne reči: *matematički identitet, društvena klasa, pol, kulturni kapital, nejednakost.*

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Školska klima kao prediktor samoefikasnosti nastavnika u školama za učenike sa smetnjama u razvoju[1]

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Apstrakt *Samoefikasnost nastavnika značajna je za kvalitet i ishode obrazovanja i pozitivno utiče na blagostanje učenika i nastavnika u školskom okruženju. Među brojnim faktorima koji se dovode u vezu sa samoefikasnošću nastavnika, važnu ulogu ima školska klima. Cilj ovog istraživanja je utvrđivanje povezanosti školske klime i samoefikasnosti nastavnika koji rade u školama za učenike sa smetnjama u razvoju i invaliditetom. Uzorak čini 150 nastavnika iz pet srednjih škola za učenike sa smetnjama u razvoju iz različitih gradova Srbije. Podaci su prikupljeni primenom Revidiranog upitnika o školskom okruženju (engl. Revised School Level Environment Questionnaire – Revised SLEQ) i Skale efikasnosti nastavnika Države Ohajo (engl. Ohio State Teacher Efficacy Scale – OSTES). Rezultati pokazuju da je regresioni model značajan i da objašnjava 13,0% varijanse ($R2 = 0,13$, $F (4, 139) = 5,19$, $p = 0,001$). Odnosi sa učenicima su izdvojeni kao jedini značajan prediktor samoefikasnosti nastavnika ($\beta = 0,24$, $p = 0,004$). Dobijeni nalazi doprinose razumevanju povezanosti između pojedinih domena školske klime i samoefikasnosti nastavnika. U diskusiji su razmotrene implikacije ovih nalaza za stručno usavršavanje nastavnika u školama za učenike sa smetnjama u razvoju.*

Ključne reči: *nastavnici, samoefikasnost, školska klima, specijalna edukacija.*

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Uvod

Višedecenijsko interesovanje istraživača orijentisano na ispitivanje kvaliteta školske klime verovatno je motivisano empirijskim nalazima o značaju pozitivne školske klime za spremnost nastavnika da se zadrže u nastavnom procesu (Cohen et al., 2009), kao i njihovo veće zadovoljstvo poslom (Sahito & Vaisanen, 2020). U literaturi se navodi da je samoefikasnost (SE) nastavnika značajno pozitivno povezana sa kvalitetom školske klime, te da ima direktan pozitivni uticaj na nivo zadovoljstva poslom (Ortan et al., 2021) ili ulogu medijatora između školske klime i zadovoljstva poslom (Katsantonis, 2019). Stoga proučavanje povezanosti školske klime i nastavničke SE može imati značajne implikacije, kako za unapređenje obrazovnih i vaspitnih ishoda tako i za prevenciju profesionalnog stresa i izgaranja kod nastavnika.

Odnos između školske klime i SE nastavnika može se posmatrati iz različitih uglova. Rezultati nekih studija sugerišu da viši nivo SE nastavnika povećava verovatnoću za pozitivne percepcije školske klime (Chong et al., 2010). Međutim, daleko su brojnija istraživanja u kojima je ispitivan i potvrđen prediktivni značaj školske klime za SE nastavnika (Aldridge & Fraser, 2016; Collie et al., 2012; Damanik & Aldridge, 2017; Zakariya, 2020; Zhou et al., 2023). Ovo istraživanje je zasnovano na sociokognitivnom teorijskom konceptu SE nastavnika (Bandura, 1989; Tschannen-Moran & Woolfolk Hoy, 2007), koji implicira da je spoljašnja regulacija (percipirana školska klima) značajna za lične kompetencije nastavnika (SE) u specifičnom okruženju kao što su škole za učenike sa smetnjama u razvoju.

Ovo istraživanje rađeno je u srednjim školama za učenike sa smetnjama u razvoju i invaliditetom. Prema Zakonu o srednjem obrazovanju i vaspitanju, učenici sa smetnjama u razvoju mogu biti uključeni u redovan sistem obrazovanja i vaspitanja, uz odgovarajuću dodatnu podršku, ili se, na osnovu mišljenja interresorne komisije i uz saglasnost roditelja, upisuju u škole za učenike sa smetnjama u razvoju. U srednjim školama za učenike sa smetnjama u razvoju ostvaruje se opšte i stručno obrazovanje i vaspitanje za određena zanimanja, uz prilagođavanje načina, sadržaja, ciljeva i ishoda obrazovno-vaspitnog rada u skladu sa individualnim obrazovnim planom. Nastavnici rade sa manjim brojem učenika u odeljenju i imaju nižu normu neposrednog rada. Za učenike ovih škola karakteristična su ograničenja u akademskom napredovanju (Jenko & Lipec-Stopar, 2020; Kaljača i Dučić, 2016), značajne individualne razlike u kognitivnom razvoju (Banković i sar., 2019) i visok nivo internalizovanih i eksternalizovanih problema (Žunić-Pavlović i sar., 2018). Smatra se da je profesionalna uloga nastavnika u školi za učenike sa smetnjama u razvoju složenija u poređenju sa nastavnicima u redovnoj školi (Mulyani et al., 2021), što može uticati na njihovu percepciju školske klime i vlastite SE.

Školska klima u redovnim školama i školama za učenike sa smetnjama u razvoju

Uprkos jasnim pokazateljima značaja školske klime, još uvek nema opšteg konsenzusa u pogledu njenih najznačajnijih aspekata. Vang i Degol (Wang & Degol, 2016)

ponudili su model školske klime koji obuhvata sledeća četiri aspekta: akademska klima (rukovođenje, učenje i podučavanje i stručno usavršavanje), zajednica (kvalitet interpersonalnih odnosa, povezanost i uvažavanje različitosti), bezbednost (fizička i emocionalna sigurnost i nivo reda i discipline) i institucionalno okruženje (organizacione i strukturalne karakteristike i dostupnost resursa). Autori smatraju da ovi aspekti obuhvataju sve karakteristike školskog okruženja koje su značajne za razvoj učenika.

Većina istraživanja školske klime iz perspektive nastavnika zasnovana je na modelu Rentula i Frejzera (Rentoul & Fraser, 1983), u kome su izdvojeni sledeći aspekti: pripadnost, podrška učenika, profesionalni interes, orijentacija ka uspehu, formalizacija, centralizacija, inovativnost i adekvatnost resursa. U ovom istraživanju primenjena je revidirana verzija ovog modela sa pet aspekata (Johnson et al., 2007). Malobrojne studije o razlikama u percepciji školske klime između nastavnika iz redovnih škola i škola za učenike sa smetnjama u razvoju nemaju saglasne nalaze. Prema rezultatima, nastavnici u redovnim školama pozitivnije percipiraju školsku klimu u sledećim aspektima: saglasnosti o ključnim ciljevima škole, podrške i prihvaćenosti od kolega, participacije u donošenju odluka, adekvatnosti resursa i podrške uprave (Chong & Ong, 2016), dok nastavnici u školama za učenike sa smetnjama u razvoju bolje ocenjuju školsku klimu u aspektima saglasnosti o ciljevima i participacije u donošenju odluka (Adams & Adams, 2000).

Samoefikasnost nastavnika u redovnim školama i školama za učenike sa smetnjama u razvoju

Prema Banduri (Bandura, 1989), SE je odraz sposobnosti pojedinca da proceni da li raspolaže kapacitetima koji su potrebni za postizanje željenog cilja. U literaturi se SE nastavnika definiše kao skup uverenja o posedovanju optimalnih znanja i veština koji im omogućavaju da kompetentno realizuju svoje profesionalne aktivnosti, uspešno rešavaju probleme u procesu nastave i pozitivno utiču na sveukupan razvoj ličnosti učenika, uključujući i njihov akademski uspeh (Caprara et al., 2006). Ovako definisana SE nastavnika istovremeno obuhvata lične karakteristike i kvalitet konteksta u kojem se nastavni proces odvija (Chan, 2005).

Polazeći od Bandurinog teorijskog koncepta (Bandura, 1989), Čanen-Moran i Vulfolk Hoj (Tschannen-Moran & Woolfolk Hoy, 2007) opisali su četiri izvora SE nastavnika u pogledu kompetencija za podučavanje: kvalitet stečenog pedagoškog iskustva (percepcija vlastitih postignuća u radu sa učenicima); posredno stečeno iskustvo na osnovu posmatranja učinka drugih nastavnika sa kojima se pojedinac u značajnoj meri identifikuje; povratne reakcije u formi verbalnih poruka koje nastavniku upućuju važni činioci u školskom okruženju; psihološko i emocionalno stanje nastavnika koje prati samoevaluaciju pedagoškog učinka. Prema navedenim autorima, nastavnici ne percipiraju svoju SE jednako u svim situacijama, već procenjuju vlastitu kompetenciju u pogledu ispunjenja zahteva određenog nastavnog zadatka. Tako njihova skala za procenu SE nastavnika (OSTES) (Tschannen-Moran & Woolfolk Hoy, 2001) obuhvata tri domena: angažovanje učenika, strategije podučavanja i upravljanje odeljenjem. Rezultati komparativnih studija SE nastavnika koji rade u školama za učenike sa smetnjama u razvoju i u redovnim školama se razlikuju: između ove

dve grupe nastavnika nema značajnih razlika u nivou SE (Chong & Ong, 2016); nastavnici u redovnim školama imaju značajno višu SE u sva tri domena (Antoniou et al., 2023); nastavnici u školama za učenike sa smetnjama u razvoju imaju značajno višu SE u domenima strategija podučavanja i angažovanje učenika (Žunić-Pavlović i Pavlović, 2020).

Malo je empirijskih podataka o prediktorima SE nastavnika (merene instrumentom OSTES) koji rade u školama za učenike sa smetnjama u razvoju. Većina prethodnih studija usmerena je na proučavanje povezanosti između demografskih varijabli i SE ovih nastavnika, ali dobijeni nalazi nisu konzistentni; prema nekima su pol, visina plate i dužina radnog staža značajni prediktori SE nastavnika (Minghui et al., 2018); uočeno je da se SE nastavnika značajno razlikuje u zavisnosti od prethodnog obrazovanja, ali ne i u odnosu na pol (Sarıçam & Sakız, 2014) dok drugi ukazuju da nema značajnih razlika u SE nastavnika u zavisnosti od pola, godina starosti i prethodnog obrazovanja (Antoniou et al., 2017). Istraživanja takođe ukazuju na pozitivnu vezu između školske klime i SE ovih nastavnika, ali ne omogućavaju izvođenje zaključaka o prediktivnom značaju školske klime i njenih aspekata za SE nastavnika. U studiji iz Singapura (Chong & Ong, 2016) ispitana je uloga kolektivne SE kao medijatora u vezi između nastavničke SE i školske klime, dok je u studiji iz Indonezije (Natalia & Mangunsong, 2018) rađena samo korelaciona analiza. Pokazalo se da je SE ovih nastavnika povezana sa primenom empirijski zasnovanih orijentacija u tretmanu (Siu & Ho, 2010) i profesionalnim stresom, s tim da nije ispitan smer ove veze (Antoniou et al., 2023).

U nedostatku relevantnijih istraživanja, mogu se konsultovati studije rađene na uzorcima nastavnika specijalne edukacije (defektologa) u redovnim školama. Ova istraživanja pokazuju da su uverenja nastavnika o vlastitoj sposobnosti da odgovore na obaveze, zadatke i izazove u nastavi povezana sa godinama starosti (Dimitrios et al., 2020) i psihološkim i emocionalnim stanjem, što uključuje i sindrom izgaranja (Ruble et al., 2011). Kada je u pitanju SE nastavnika u pogledu podučavanja učenika sa smetnjama u razvoju, nađene su značajne veze sa prethodnom stručnom obukom (Love et al., 2019).

Za razumevanje ove problematike mogu biti korisni i empirijski nalazi o SE u pogledu inkluzivnog podučavanja nastavnika zaposlenih u redovnim školama. U internacionalnoj studiji Malinena i saradnika (Malinen et al., 2013) iskustvo u podučavanju učenika sa smetnjama u razvoju izdvojeno je kao ključni prediktor SE nastavnika. Ova studija je takođe ukazala na specifične prediktore SE nastavnika u svakoj državi: prediktor u Kini tip škole, u Finskoj obuka iz oblasti inkluzivnog obrazovanja i muški pol, dok je u Južnoafričkoj Republici stariji uzrast. U studiji rađenoj u Saudijskoj Arabiji potvrđen je prediktivni značaj stavova prema inkluzivnom obrazovanju za SE nastavnika. Imajući u vidu temu ovog rada, posebno su važni nalazi o povezanosti pozitivne školske klime i SE nastavnika u pogledu inkluzivnog podučavanja (Fu et al., 2023; Hosford & O'Sullivan, 2016; Wilson et al., 2020).

Cilj ovog istraživanja je utvrđivanje povezanosti školske klime sa SE nastavnika srednjih škola za učenike sa smetnjama u razvoju. Za ovako definisan cilj smo se opredelili iz dva razloga. Prvi se odnosi na nalaze u dostupnoj literaturi koji ukazuju na ulogu školske klime kao značajnog prediktora nastavničke SE. Ova veza nije dovoljno istražena, stoga su otvorena pitanja koji aspekti školske klime najviše doprinose SE nastavnika i u kojim

domenima se to postiže. Drugi razlog se odnosi na činjenicu da proučavanju školske klime i SE nastavnika u školama za učenike sa smetnjama u razvoju nije dovoljno posvećena pažnja, posebno u domaćoj literaturi.

Metod istraživanja

Uzorak

Istraživanje je rađeno u srednjim školama za učenike sa smetnjama u razvoju, uzimajući u obzir empirijske nalaze koji sugerišu da srednje škole karakteriše nepovoljnija školska klima (Cavrini et al., 2015; Meristo & Eisenschmidt, 2014) i niži nivo SE nastavnika (Gkolia et al., 2016; Klassen & Chiu, 2010; Ryan et al., 2015).

Tabela 1
Demografski podaci o ispitanicima

Varijabla	Grupa	F	%
Pol	Muški	52	34,7
	Ženski	98	65,3
Starost	20 – 30 godina	10	6,7
	31 – 40 godina	43	28,7
	41 – 50 godina	51	34,0
	51 – 60 godina	29	19,3
	više od 60 godina	17	11,3
Radni staž	manje od 1 godine	7	4,7
	1 – 2 godine	14	9,3
	3 – 5 godina	20	13,3
	6 – 10 godina	28	18,7
	11 – 20 godina	52	34,7
	više od 20 godina	29	19,3
Nivo obrazovanja	srednje obrazovanje	18	12,0
	osnovne studije	88	58,7
	master studije	41	27,3
	doktorske studije	3	2,0

Napomena. N=150.

Uzorak je činilo 150 nastavnika zaposlenih u pet srednjih škola za učenike sa smetnjama u razvoju koje su locirane u različitim gradovima. Polazeći od regionalne distribucije srednjih škola za učenike sa smetnjama u razvoju u školskoj 2020/2021. godini (Republički

zavod za statistiku, 2022), primenom metode slučajnog izbora odabrane su: jedna škola iz beogradskog regiona, jedna škola iz regiona Vojvodine, dve škole iz regiona Šumadije i Zapadne Srbije i jedna škola iz regiona Južne i Istočne Srbije. U cilju očuvanja anonimnosti ispitanika izostavljeni su podaci o nazivu i lokaciji škola. Prema podacima prikazanim u Tabeli 1, najveći broj nastavnika je ženskog pola, starosti od 31 do 50 godina, sa radnim stažom u trajanju od 11 do 20 godina i završenim osnovnim studijama.

Instrumenti

Za procenu školske klime korišćen je Revidirani upitnik o školskom okruženju (*SLEQ*) (Johnson et al., 2007). Upitnik se sastoji od 21 tvrdnje koje su raspoređene u pet podskala: Saradnja (npr. „Nastavnici zajedno izrađuju nastavne programe."), Odlučivanje (npr. „Od nastavnika se često traži da učestvuju u donošenju odluka."), Inovacije u nastavi (npr. „Stalno se isprobavaju nove i drugačije ideje."), Odnosi učenika (npr. „Većina učenika je lepo vaspitana i poštuje zaposlene u školi.") i Školski resursi (npr. „Školska biblioteka ima dovoljno sredstava i materijala."). Ispitanici su izražavali slaganje sa tvrdnjama izborom ponuđenih odgovora na petostepenoj skali Likertovog tipa, od 1 – „uopšte se ne slažem" do 5 – „potpuno se slažem". Odgovori ispitanika su skorovani tako da viši skorovi označavaju bolju školsku klimu. Interna konzistentnost izražena Kronbahovim koeficijentom u ovom istraživanju iznosi: 0,79 za SLEQ, 0,56 za podskalu Saradnja, 0,24 za podskalu Odlučivanje, 0,74 za podskalu Inovacije u nastavi, 0,77 za podskalu Odnosi učenika i 0,59 za podskalu Školski resursi. Budući da podskala Odlučivanje ima jako nisu internu pouzdanost, isključena je iz daljih analiza.

SE nastavnika procenjena je Skalom efikasnosti nastavnika Države Ohajo – kratkom formom (engl. *Ohio State Teacher Efficacy Scale – OSTES*, *Short form*) (Tschannen-Moran & Woolfolk Hoy, 2001) koja sadrži tri podskale: Efikasnost u pogledu angažovanja učenika (npr. „U kojoj meri možete da uverite učenike da mogu da budu dobri u školskim aktivnostima?"), Efikasnost u pogledu strategija podučavanja (npr. „U kojoj meri možete da koristite različite strategije ocenjivanja?") i Efikasnost u pogledu upravljanja odeljenjem (npr. „U kojoj meri možete da kontrolišete nedisciplinovano ponašanje u odeljenju?"). OSTES ima ukupno 12 pitanja na koja ispitanici odgovaraju izborom ponuđenih odgovora na skali Likertovog tipa od 1 – „nimalo" do 9 – „veoma mnogo". Ukupan skor i skorovi za svaku podskalu dobijaju se sabiranjem odgovora, pri čemu viši skorovi označavaju viši nivo SE. Kronbahov koeficijent u ovom istraživanju iznosi 0,88 za OSTES, 0,67 za podskalu Efikasnost u pogledu angažovanja učenika, 0,82 za podskalu Efikasnost u pogledu strategija podučavanja i 0,83 za podskalu Efikasnost u pogledu upravljanje odeljenjem.

Procedura prikupljanja podataka

Istraživanje je sprovedeno tokom prvog polugodišta školske 2022/2023. godine. Nakon dobijanja saglasnosti od uprave škole, istraživači su anketirali nastavnike na radnom mestu u papir-olovka formatu. Pre popunjavanja upitnika, nastavnici su upoznati sa ciljevima istraživanja i obavešteni da je učestvovanje u istraživanju dobrovoljno i anonimno.

Popunjavanje upitnika trajalo je između 10 i 15 minuta. Nastavnici su popunjavali upitnike u grupi, posle sednice nastavničkog veća i popunjene upitnike dostavljali direktno istraživačima.

Obrada podataka

Za statističku obradu podataka korišćen je program *SPSS Statistic 23*. U obradi podataka korišćena je deskriptivna statistika (učestalost, aritmetička sredina i standardna devijacija). Za ispitivanje povezanosti između školske klime i SE nastavnika korišćeni su Pirsonov koeficijent korelacije i linearna regresiona analiza.

Rezultati istraživanja sa diskusijom

Deskriptivni pokazatelji školske klime i samoefikasnosti nastavnika

U Tabeli 2 prikazani su deskriptivni pokazatelji rezultata ispitanika na skalama SLEQ i OSTES. Aritmetička sredina skorova na skali SLEQ je 3,38, što označava dobru školsku klimu. Od ispitivanih aspekata školske klime, nastavnici su najbolje ocenili saradnju i inovacije u nastavi, a najslabije odlučivanje i resurse. Na skali OSTES aritmetička sredina skorova iznosi 7,18, što označava vrlo dobru SE. Nastavnici su najbolje ocenili vlastitu SE u pogledu strategija podučavanja, a najslabije SE u pogledu angažovanja učenika.

Tabela 2
Deskriptivni pokazatelji rezultata ispitanika na skalama SLEQ i OSTES

Skale i podskale	AS	*SD*	*Min.*	*Maks.*
SLEQ	3,38	0,53	2,22	4,89
Saradnja	3,56	0,65	1,33	5,00
Inovacije u nastavi	3,53	0,79	1,50	5,00
Odnosi učenika	3,21	0,84	1,00	4,75
Školski resursi	3,07	0,82	1,00	5,00
OSTES	7,18	0,91	3,25	9,00
Angažovanje učenika	6,85	1,10	3,25	9,00
Strategije podučavanja	7,66	1,03	2,50	9,00
Upravljanje odeljenjem	7,04	1,12	2,50	9,00

Napomena. N=150.

Povezanost školske klime i SE nastavnika

U Tabeli 3 prikazane su korelacije skorova ispitanika na skalama SLEQ i OSTES. Nađene su značajne pozitivne korelacije slabog intenziteta između ukupnih skorova na skali SLEQ i ukupnih skorova na skali OSTES. Pored toga, postoje značajne pozitivne korelacije između ukupnih skorova na skali SLEQ i skorova na dve podskale OSTES Strategije podučavanja i Upravljanje odeljenjem. Skorovi na dve podskale SLEQ Inovacije u nastavi i Školski resursi značajno pozitivno koreliraju sa skorovima na podskali OSTES Strategije podučavanja. Značajne pozitivne korelacije nađene su i između skorova na podskali SLEQ Odnosi učenika i skorova na podskali OSTES Upravljanje odeljenjem. Sa druge strane, nema značajnih korelacija između skorova na podskali SLEQ Saradnja i skorova na skali OSTES i njenim podskalama.

Tabela 3
Korelacije skorova na skalama SLEQ i OSTES

		1	2	3	4	5	6	7	8
1.	SLEQ								
2.	Saradnja	0,80**							
3.	Inovacije u nastavi	0,74**	0,50**						
4.	Odnosi učenika	0,43**	0,19*	0,13					
5.	Školski resursi	0,83**	0,59**	0,55**	0,32**				
6.	OSTES	0,24**	0,10	0,14	0,30**	0,27**			
7.	Angažovanje učenika	0,15	0,02	0,03	0,14	0,23	0,88**		
8.	Strategije podučavanja	0,24**	0,15	0,21*	0,14	0,31**	0,83**	0,64**	
9.	Upravljanje odeljenjem	0,19*	0,06	0,11	0,46**	0,15	0,82**	0,58**	0,49**

Napomena. $^{*}p \leq 0{,}05$, $^{**}p \leq 0{,}01$

Rezultati ovog istraživanja potvrđuju pretpostavku o pozitivnoj vezi između školske klime i SE nastavnika u srednjim školama za učenike sa smetnjama u razvoju. Slični rezultati dobijeni su u novijim studijama u kojima su informanti bili nastavnici u redovnoj školi koji rade sa učenicima tipičnog razvoja (Almessabi, 2021; Damanik & Aldridge, 2017; Katsantonis, 2019; Mansor et al., 2021) ili sa učenicima kojima je potrebna dodatna podrška (Hosford & O'Sullivan, 2016; Wilson et al., 2020). Čini se da je pozitivna veza između školske klime i SE prisutna bez obzira na razlike između učenika sa kojima nastavnici rade i vrstu škole.

Od četiri ispitivana aspekta školske klime, sa ukupnom SE nastavnika ili njenim domenima značajno pozitivno koreliraju sledeća tri aspekta: inovacije u nastavi, odnosi učenika i školski resursi. Jedini aspekt školske klime za koji nisu nađene značajne korelacije sa SE nastavnika odnosi se na timski rad i komunikaciju sa kolegama (podskala Saradnja). Hoj i Vulfolk (Hoy & Woolfolk, 1993) u svom istraživanju takođe nalaze da prijatno

i podržavajuće okruženje ima slab efekat na SE nastavnika. Objašnjenje autora je da SE nastavnika može biti rezultat ostvarenja instrumentalnih potreba usmerenih na zadatak i da nema veze sa odnosima sa drugim nastavnicima i upravom. Koli i saradnici (Collie et al., 2012) smatraju da saradnja može imati negativan efekat na SE nastavnika ukoliko povećava nivo stresa, što se dešava u slučaju većeg obima posla ili nametanja saradnje od pretpostavljenih. Ipak, većina sličnih istraživanja izveštava da saradnja značajno utiče na SE nastavnika, odnosno da stvaranje podržavajućeg kolektiva u kome nastavnici mogu da razmenjuju ideje i prakse doprinosi SE nastavnika (Aldridge & Fraser, 2016; Damanik & Aldridge, 2017; Hosford & O'Sullivan, 2016; Wilson et al., 2020), pa u budućim istraživanjima treba više pažnje posvetiti ovom pitanju.

Dobijeni rezultati pokazuju da školska klima značajno pozitivno korelira sa SE nastavnika u domenima strategija podučavanja i upravljanja odeljenjem, ali ne i sa SE u pogledu angažovanja učenika.

Kada je reč o SE nastavnika u pogledu strategija podučavanja, nađene su značajne pozitivne korelacije sa aspektima školske klime koji se odnose na mogućnost implementacije novih pristupa, ideja i didaktičkog materijala (podskala Inovacije u nastavi) i dostupnost i adekvatnost savremenih nastavnih sredstava i literature (podskala Školski resursi). Prethodna istraživanja pokazuju da nastavnici koji provode više vremena u različitim aktivnostima sa učenicima imaju viši nivo SE, ali smer ove veze nije do kraja razjašnjen (Fackler & Malmberg, 2016). Moguće je da viši nivo SE doprinosi spremnosti nastavnika da prilagode strategije podučavanja potrebama učenika, ali i obrnuto: da primena raznovrsnih strategija podučavanja doprinosi razvoju SE nastavnika. Pored inovacija u nastavi, SE nastavnika u pogledu strategija podučavanja je značajno povezana sa školskim resursima. Treba istaći da empirijski podaci o vezi između SE nastavnika i resursa nisu saglasni. Čanen-Moran i Vulfolk Hoj (Tschannen-Moran & Woolfolk Hoy, 2007) ubrajaju resurse u najvažnije kontekstualne faktore SE nastavnika, dok drugi autori ne nalaze značajne veze između ovih varijabli (Collie et al., 2012; Damanik & Aldridge, 2017; Hoy & Woolfolk, 1993). Međutim, u istraživanjima rađenim na uzorcima nastavnika koji rade u redovnoj školi sa učenicima kojima je potrebna dodatna podrška potvrđen je značaj odgovarajućih školskih resursa za njihovu SE u pogledu primene inkluzivnih praksi (Hosford, & O'Sullivan, 2016; Xue et al., 2023).

Pokazalo se da SE nastavnika u pogledu upravljanja odeljenjem značajno pozitivno korelira sa aspektom školske klime koji se odnosi na nastavničku percepciju ponašanja i motivacije učenika (podskala Odnosi učenika). Rezultati drugih istraživanja takođe pokazuju da nastavnici koji pozitivnije percipiraju ponašanje i motivaciju učenika izveštavaju o višem nivou SE (Collie et al., 2012). Smatra se da nastavničku SE oblikuju priroda i nivo teškoća koliko i zahtevi u pogledu podučavanja i upravljanja, pa nastavnici imaju manje poverenja u vlastite kompetencije za rad sa učenicima koji imaju teže probleme ponašanja i slabu motivaciju (Hosford, & O'Sullivan, 2016). Sa druge strane, to može značiti da nastavnici koji se osećaju kompetentnijim za upravljanje odeljenjem ostvaruju viši nivo organizacije na času i pružaju raznovrsnu nastavnu i emocionalnu podršku učenicima (Ryan et al., 2015). Neke studije sugerišu da motivacija učenika predstavlja prediktor SE nastavnika,

odnosno da nastavnici imaju viši nivo SE ukoliko učenici pokazuju više angažovanja, truda, pozitivnih stavova prema učenju i sl. (Zee & Koomen, 2016).

Zanimljivo je da nisu nađene značajne veze između školske klime i SE nastavnika u pogledu angažovanja učenika. Ovaj nalaz zahteva objašnjenje, s obzirom na to da odstupa od rezultata drugih sličnih istraživanja (Hosford, & O'Sullivan, 2016; Meristo & Eisenschmidt, 2014; Wilson et al., 2020). Budući da se ovaj domen SE odnosi na sposobnost nastavnika da navedu učenike da vrednuju učenje, da ih uvere da mogu biti dobri u školskim aktivnostima i sl., dobijeni rezultati se mogu dovesti u vezu sa generalno slabijim postignućima učenika sa smetnjama u razvoju ili sa manjim fokusom nastavnika u ovim školama na akademska postignuća učenika. Još jedno moguće objašnjenje je da SE u pogledu angažovanja učenika prvenstveno podrazumeva emocionalnu podršku, a da većina nastavnika koristi drugačije strategije za motivisanje učenika (Ryan et al., 2015).

Prediktivna vrednost školske klime za SE nastavnika

Rezultati linearne regresione analize pokazuju da školska klima objašnjava svega 13,0% varijanse SE nastavnika ($R^2 = 0{,}13$, F (4, 139) = 5,19, $p = 0{,}001$). U Tabeli 4 prikazane su karakteristike prediktora u regresionom modelu. Aspekt školske klime pod nazivom Odnosi učenika izdvojen je kao jedini značajan prediktor SE nastavnika.

Tabela 4
Karakteristike prediktora u regresionom modelu

Skale SLEQ	B	*SE B*	β	*p*
Saradnja	0,01	0,30	0,01	0,960
Inovacije u nastavi	-0,01	0,33	0,00	0,974
Odnosi učenika	0,78	0,27	0,24	0,004
Školski resursi	0,77	0,42	0,20	0,073

Nalaz prema kojem školska klima ima relativno malu prediktivnu vrednost za SE nastavnika sugeriše postojanje drugih značajnih prediktora koji nisu obuhvaćeni ovim istraživanjem. U literaturi se navodi multifaktorska predikcija SE nastavnika, budući da ona opada ili jača u zavisnosti od specifičnosti okruženja u kome nastavnici rade i karakteristika njihovih učenika (Tschannen-Moran & Woolfolk Hoy, 2001), oblasti podučavanja (Tschannen-Moran & Johnson, 2011) i stručnog usavršavanja za rad sa specifičnim grupama učenika (Dignath et al., 2022; Siu & Ho, 2010). Takođe, u zavisnosti od socijalnog konteksta (Kina, Finska i Južnoafrička Republika) izdvajaju se različiti prediktivni faktori koji su značajni za SE nastavnika koji rade sa učenicima sa smetnjama u razvoju (Malinen et al., 2013).

Ovo istraživanje je pokazalo da od svih ispitivanih aspekata školske klime značajnu prediktivnu vrednost ima samo aspekt Odnosi učenika koji se tiče njihovog ponašanja prema zaposlenima u školi, dobrog vladanja, pomaganja i saradnje sa nastavnicima, kao i motivacije za učenje. Kao što je očekivano, dobijeni nalazi sugerišu da nastavnici koji pozitivnije percipiraju ponašanje učenika imaju viši nivo SE. U objašnjenju ove veze neki autori ističu negativan uticaj stresa koji se javlja kod nastavnika kao posledica nepoželjnog ponašanje učenika (Collie et al., 2012). Moguće je da nastavnici koji iskuse visok nivo stresa imaju manje poverenja u svoje sposobnosti u pogledu upravljanja odeljenjem zbog istorije neuspešnih pokušaja da utiču na ponašanje učenika (Klassen & Chiu, 2010). Na to upućuju prethodno diskutovani rezultati o značajnim korelacijama između skorova na podskali SLEQ Odnosi učenika i skorova na podskali OSTES Upravljanje odeljenjem. Pored toga, prethodna istraživanja sugerišu da SE nastavnika ima ulogu protektivnog faktora u očuvanju dobrih odnosa sa učenicima, čak i kada ispoljavaju probleme ponašanja (Zee & Koomen, 2016). Nastavnici sa višim nivoom SE prijavljuju manje konflikata i bolje odnose sa učenicima, pa se pretpostavlja da umeju da podrže autonomiju učenika i vršnjačke odnose na način koji vodi ka poželjnijem ponašanju i odnosima (Mashburn et al., 2006). U prilog tome govore empirijski nalazi da je viši nivo SE nastavnika u školama za učenike sa smetnjama u razvoju protektivni faktor u odnosima sa učenicima sa problemima ponašanja, jer ih „štiti" od negativnih emocionalnih stanja kao što su strah, anksioznost, depresija i ljutnja (Hastings & Brown, 2002).

Nalaz da ponašanje učenika ima ključni značaj za SE nastavnika iz ovog uzorka verovatno jeste posledica rada u uslovima povišenog rizika od problematičnog i nasilnog ponašanja učenika (Gerberich et al., 2014). Prema novijim podacima o prevalenciji različitih oblika problema ponašanja kod dece i adolescenata sa intelektualnom ometenošću, više od polovine ispoljava barem jedan oblik izazovnog ponašanja, više od trećine se samopovređuje, a nešto manje ispoljava agresivno i destruktivno ponašanje (Nicholls et al., 2020). I ranije je isticano da je psihološka sigurnost najznačajniji korelat SE nastavnika koji rade sa učenicima sa smetnjama u razvoju (Ruble et al., 2011). Može se pretpostaviti da je nastavnicima u školama za učenike sa smetnjama u razvoju od izuzetnog značaja kvalitet odnosa sa učenicima koji, u povoljnim okolnostima, verovatno doprinosi njihovom osećanju sigurnosti i uverenosti da mogu uspešno rešiti različite konfliktne, ali i sve druge situacije u učionici.

Ograničenja istraživanja

Uzorak istraživanja čini relativno mali broj nastavnika u srednjim školama za učenike sa smetnjama u razvoju, što ograničava generalizaciju rezultata. Učešće nastavnika u istraživanju bilo je dobrovoljno, pa je moguće da su na njihovu odluku uticale percepcije školske klime i vlastite SE. Dobro bi bilo da se nalazi ovog istraživanja provere na većem uzorku nastavnika koji bi uključio i redovne srednje škole. Iako su istraživanja na uzorcima nastavnika koji rade sa učenicima sa smetnjama u razvoju potvrdila da skala OSTES ima

dobre psihometrijske karakteristike (Ami et al., 2016), u literaturi nalazimo preporuke da treba koristiti posebne, osetljivije instrumente koji su primereniji osobenostima učenika i načina podučavanja (Love et al., 2019). Preporuka za buduća istraživanja je da se koriste i druge metode za procenu SE nastavnika (npr. intervju, vinjete, video snimci) i različiti izvori podataka. Korelaciona priroda ovog istraživanja ne dozvoljava izvođenje zaključaka o kauzalnom odnosu između školske klime i SE nastavnika. Po svemu sudeći, ova veza je kompleksna i recipročna, te zahteva opsežnije proučavanje u budućnosti. Dobijeni rezultati sugerišu da, pored školske klime, treba ispitati ulogu drugih faktora (individualnih i sredinskih) u razvoju SE nastavnika.

Zaključci i pedagoške implikacije

U ovom istraživanju ispitana je povezanost između školske klime i SE kod nastavnika koji rade u srednjim školama za učenike sa smetnjama u razvoju. Nađene su značajne pozitivne korelacije, kako ukupnih skorova percipirane školske klime i SE nastavnika, tako i pojedinih domena ova dva konstrukta. Rezultati ukazuju na značaj percepcije ponašanja i motivacije učenika za poverenje nastavnika u vlastite kompetencije, te doprinose razumevanju konstrukta SE i njegove uloge u podučavanju dece sa smetnjama u razvoju.

Nalazi o povezanosti školske klime i SE nastavnika ukazuju na potrebu za razvijanjem pozitivnog školskog okruženja. Za srednje škole za učenike sa smetnjama u razvoju posebno je važno da rade na prevenciji i redukovanju problema ponašanja učenika, što često nije među prioritetnim ciljevima. Evaluacije pokazuju da pristup zasnovan na bihevioralnoj teoriji i primenjenoj bihevioralnoj analizi (*School-Wide Positive Behavior Support – SWPBS*; Sugai & Horner, 2009) doprinosi unapređenju školske klime, ponašanja učenika i SE nastavnika (Ross & Horner, 2007). Pored toga, prethodne studije naglašavaju značaj stručnog usavršavanja za SE nastavnika (Tschannen-Moran & McMaster, 2009). Nastavnici koji su pohađali obuku iz oblasti dodatne podrške u obrazovanju i vaspitanju imaju više poverenja u svoje kompetencije za rad sa učenicima sa smetnjama u razvoju (Benn et al., 2012; Siu & Ho, 2010).

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School Climate as a Predictor of Teacher Self-Efficacy in Schools for Students with Developmental Disabilities

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Abstract *Teacher self-efficacy is crucial for the quality and outcomes of education and positively impacts the well-being of both students and teachers in the school environment. Among numerous factors associated with teacher self-efficacy, school climate plays a significant role. This study aims to determine the relationship between school climate and teacher self-efficacy in schools for students with developmental disabilities and impairments. The sample includes 150 teachers from five secondary schools for students with developmental disabilities in various cities across Serbia. Data were collected using the Revised School Level Environment Questionnaire (Revised SLEQ) and the Ohio State Teacher Efficacy Scale (OSTES). The results indicate that the regression model is significant and explains 13.0% of the variance ($R^2 = 0.13$, $F(4, 139) = 5.19$, $p = 0.001$). Relationships with students emerged as the only significant predictor of teacher self-efficacy ($\beta = 0.24$, $p = 0.004$). These findings contribute to understanding the connections between specific domains of school climate and teacher self-efficacy. The discussion addresses the implications of these findings for the professional development of teachers in schools for students with developmental disabilities.*

Keywords: *teachers, self-efficacy, school climate, special education.*

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An Investigation of the Use of the IMRAD Format for Biology Students' Laboratory Reports

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Abstract *Academic discourse serves as a platform for the systematic communication of scientific findings, with laboratory reports being a primary type employed by researchers and students. These reports follow specific conventions and formats, ensuring clarity and credibility in scientific communication. This study investigates the organizational structure of English-language Biology laboratory reports, focusing on students' adherence to the Introduction, Methods, Results, And Discussion (IMRAD) model. After compiling a corpus of fifty Biology students' laboratory reports from Ouargla University, Algeria, the researchers adopted a qualitative approach and a thematic analysis of data. The results revealed overall adherence to the IMRAD format, with minor variations, notably variations in subheadings within the Methods section, transitions between sections, and the structure of the Discussion section, reflecting disciplinary norms. These findings suggest opportunities for teachers to explicitly address the nuances of IMRAD structure and writing conventions within the domain of Biology. By comprehending how students apply this model, instructors can design more effective lessons and writing instructions that foster clarity and disciplinary understanding in laboratory report writing. This study emphasizes the importance of exploring the impact of explicit instruction on the quality of student writing and understanding of IMRAD conventions. It is recommended that these variations be further explored in order to enhance the comprehension of students' communication skills, thereby improving their writing quality in the academic landscape. Additionally, this research stresses the importance of exploring the impact of explicit instruction on student writing quality and understanding of IMRAD conventions.*

Keywords: *academic discourse, Biology, disciplinary norms, IMRAD model, laboratory reports.*

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Introduction

In the field of Biology, laboratory reports are essential components of academic discourse and are crucial for disseminating scientific research findings. These reports act as a medium for researchers and students to communicate their experimental designs, results, and conclusions (Penrose & Katz, 2004). The effective communication of scientific findings is not only contingent on the accuracy and validity of results but also depends heavily on the obvious and organized presentation of data within laboratory reports (Swales & Feak, 2004). Thus, ensuring effective scientific communication requires understanding the organizational structure of these reports.

In the sphere of academic discourse, laboratory reports occupy a vital position as they give a thorough account of the research procedures, enabling other researchers to assess, replicate, and build upon the findings (El–Serag, 2012). The organizational structure of laboratory reports plays a fundamental role in facilitating and promoting this communication by offering a standardized framework for presenting research outcomes. Scholars have extensively deliberated on this matter as underscored in the comprehensive discourse by Carter et al. (2007, p. 295) claiming that lab reports "encode a scientific way of knowing in its structure". The extensively acknowledged IMRAD (Introduction, Methods, Results, And Discussion) model serves as a cohesive framework to structure laboratory reports, assuring uniformity and enhancing understanding across diverse studies. By adhering to the IMRAD model, researchers and students can clearly communicate the purpose of their study, describe the methodology used, present the results obtained, and engage in a critical analysis and interpretation of these results. The logical flow of information in laboratory reports makes it easy for readers to follow the research process, comprehend the rationale of the study, judge the reliability of the findings, and assess their implications.

In the field of Biology, where intricate experiments and analyses are typical, understanding the format of laboratory reports is highly important. The varied nature of biology research calls for clear and organized reporting in order to transfer complex scientific concepts and methodologies adequately. The primary focus of the present study is on the English-language biology laboratory reports organization following the IMRAD model, as it has been proven that it paves the way to disseminate and understand the research conducted on a scientific issue. Pechenik (1993) and Parkinson (2017) stated that a well-organized laboratory report allows researchers to present their work in a succinct and coherent manner facilitating knowledge diffusion, advancing the field, and encouraging researchers' collaboration.

Given that the laboratory report and its organizational structure play a central role in the overall framework of tertiary science, specifically the field of Biology, the examination of scientific laboratory reports written in English by Algerian students at Ouargla University becomes significantly vital. Building upon this necessity and considering the fact that this issue is not widely investigated in the local Algerian context, this research aims at examining the adherence of students to the IMRAD model in this specific context in order to help instructors design their lessons and writing instructions to improve the writing quality in the academic landscape. To this end, this study intends to answer the following research question:

In what ways do Biology students at Ouargla University, Algeria organize sections and subsections in their English-language laboratory reports, following the IMRAD model?

In the light of this research question, this paper examines the proposition of whether students in the Biology program at Ouargla University, Algeria adhere to the IMRAD model when writing laboratory reports. It explores how these reports incorporate nuanced adjustments shaped by the specific demands of the discipline.

By examining Algerian biology students' adherence to the IMRAD format in structuring their laboratory reports, this article aims at making a substantial contribution to improve students' writing and organizing skills of scientific papers, mainly laboratory reports in the Algerian context. It may provide researchers with an adequate picture about scientific writing practices in the field of Biology, particularly for non-native English speaking researchers to improve their practice in using English as a medium to communicate their research findings. Additionally, since this research will illuminate the writing strategies employed by both researchers and students in writing this genre, this understanding can empower educators to develop targeted English for Specific Purposes (ESP) writing support programs that cater to the specific needs of biology students seeking to publish scientific papers in English. By providing focused assistance in ESP, these programs can equip students with the language skills and knowledge of academic writing conventions required for effective communication in their scientific field. This enhanced communication ability will empower students to effectively convey their research findings and ultimately enhance their academic performance.

Literature Review

Academic Discourse as a Medium for Disseminating Research Findings

According to Nair and Nair (2014, p. 14), "communication is crucial to the development of science". Because previous scientists and researchers regularly reported their findings, the entire world is aware of their work. Writing or speaking about research aids in the clarification of the obtained ideas and the presentation of research within a larger context. As a result, sharing research findings is an essential component of the research process. As a matter of fact, unless the findings are effectively shared, a research project is not deemed finished. The best-known method of accomplishing this step is through a well-written academic discourse that adequately presents the investigation. Hyland (2009) confirms this point considering that "academic discourse refers to the ways of thinking and using language which exists in the academy. Its significance, in large parts, lies in the fact that complex social activities like educating students, demonstrating learning, disseminating ideas, and constructing knowledge rely on language to accomplish" (Hyland, 2009, p. 17). He regards academic discourse as the dominant mode of education and knowledge transfer. A major type of academic discourse used among researchers investigating scientific issues to present their findings is the laboratory report.

Laboratory reports are of great importance in the researcher's academic journey. Pechenik (1993) asserts that "if you are contemplating a career in research, be assured that learning to write effective research reports now is an investment in your future. As a laboratory technician or research assistant, you will often be asked to share what you have obtained from your research. If you eventually pursue a research M.S. or PhD, you will find that a graduate thesis is essentially a large laboratory report" (pp. 144-145). Pechenik's assertion justifies the need for learning how to write and organize laboratory reports for both researchers' personal academic achievements and knowledge proliferation. In fact, in their academic career, students hardly ever need to be skilled storytellers and writers of personal narrative. What they actually need is to improve their ability to convey academic knowledge and research findings. More importantly, students' ability to create academic writing of at least a passable quality within the framework of academic discourse expectations frequently determines their success as university students who will be future researchers (Hinkel, 2003). Thus, successful written academic discourse, especially in the scientific disciplines, is highly valued as professional preparation.

Laboratory Reports

Investigation and experimentation are the heart of science education. Students are encouraged to investigate, form hypotheses, and test their theories both in the classroom and out in the real world. Students are expected to discuss and report their processes and outcomes as they engage in scientific inquiry. Within a biological laboratory report, which is one of the different genres prevalent in scientific disciplines, students are required to write and organize their reports according to the writing norms of this discipline in order to meet the intended communicative purposes.

The student laboratory report, which summarizes experimental work, is the most common genre of instructional writing among students studying science and engineering (Gardner & Nesi, 2013). Disciplines within the sciences, including physics, biology, engineering, and chemistry are most likely to incorporate laboratory reports into their assignments as a way to share certain work results. Since genres are specific uses of language for a special and specialized context. Numerous scholars like Swales & Feak (1994) and Bhatia (2004) consider science student laboratory reports as a type of genre which is designed specifically for the purpose of planning and summarizing scientific inquiries conducted in science laboratories and beyond. Based on what is stated above, it can be concluded that a report's practical goal is to provide a thorough summary of the findings. Students should be able to explain what they did, why they did it, and how. Colleagues in the field "should learn something from the results" (Artus et al., 2016, p. 5) because laboratory reports are viewed as "the appropriate way to express and share empirical findings" (Parkinson, 2017, p. 2). This highlights the necessity to present the research findings following an organizational structure that is ample and digestible for the scientific community.

The Structure of the Student Laboratory Report

Since students' laboratory reports, in this paper specifically biology laboratory reports, reflect the logic of a scientific claim, they are very likely to follow a special content-organizing structure. For McMillan (2012), within the science's main body, the student or researcher initiates by articulating the aim of the investigation, contextualizing the work within a broader scientific framework (introduction). Subsequently, the procedure is detailed (methods), followed by the presentation of findings (results) and their interpretation (discussion). He adds, "As a student of biology, you will use the same organizational method for research projects and laboratory reports" (p. 61). From McMillan's (2012) claim, it can be deduced that biology students' laboratory reports are likely to follow the IMRAD organizational format that provides a structured skeleton for organizing the findings of scientific studies. However, Kalaskas (2013) concludes from his study that "students' feelings of frustration towards laboratory reports are caused by being unsure of how a laboratory report is organized and structured, and why it matters in science in the first place" (p. 115). This underscores the importance of the student laboratory report and its structure as a subject of investigation.

The IMRAD Format as a Laboratory Report Model of Organization

For researchers in general and students of scientific fields in particular, the three most important foreign language writing skills for effective academic writing are "discourse and information organization, standard written English, since it is the international language of science, and vocabulary" (Hinkel, 2003, p. 20). That is to say, the organizational structure and the quality of writing, mainly in English, are important tools in the students' toolbox, enabling them to effectively generate data and communicate their results (Schimel, 2012). This is especially important when their writings are presented to readers who often read in a manner that is not linear, but rather "modular", where they "skip around, seeking specific information in predetermined sections" (Sollaci & Pereira, 2004, p. 366).

Indeed, today, the majority of scientific papers, including laboratory reports, adopt the IMRAD format as the standard plan, which represents the acronym formed from the initial letters of the words Introduction, Methods, Results, And Discussion (Nair & Nair, 2014). The term IMRAD refers to a format or a pattern instead of the words embodied by the abbreviation. Nair & Nair (2014, p. 14) claim that "with the American National Standards Institute adopting the term as the standard, first in 1972 and again in 1979, it has become the choice of most scientific papers and research journals".

The IMRAD organizational structure dictates the content of each section in order to convey appropriately the communicative purpose of the scientific paper; in this article it is the student laboratory report in the domain of Biology.

Introduction (I): in this section, students include a background of the study, explain the addressed problem and the key concepts involved in the experiment. In addition to clearly stating the research hypothesis and objectives, this part also can include a short literature review about what has been done on the topic.

Methods (M): this section's goal is to clearly and concisely explain the performed action, data analysis procedures, and the way they were presented. This section should contain all the details required for another researcher to evaluate the study or replicate the experiment since the Methods section is considered as "the narrowest part of the research paper or the laboratory report" (Swales & Feak, 2004, p. 156). It is important to note that the subheadings within this part may differ based on the discipline for which students are writing or the chosen experimental design (Sollaci & Pereira, 2004).

Results (R): the new knowledge is offered in this section, which makes up the paper's main body. It is worth mentioning that the Introduction and Methods sections aim to explain why and how the researcher arrived at the information presented in this part, while the Discussion section will then clarify its significance. The Results section content, which delineates the paper's worth, must be presented in "an absolutely clear manner in just the right number of words" (Nair &Nair, 2014, p. 20).

Discussion (D): this is the last section of the paper, preceding references or any appendices. It is the section where students elaborate on whether their hypothesis was confirmed or not, and where they dedicate efforts to elucidating the significance of their findings for the reader by locating the results within the existing literature.

In general, it is agreed on that the IMRAD model offers a consistent blueprint that directs researchers and students to address a number of issues that are necessary for comprehending a scientific study in an organized manner.

Non-native English Speaking Students' Challenges in their Scientific Writing Practice

Non-native English-speaking students face various challenges when writing their scientific research papers. These difficulties entail challenges in constructing literature reviews and in citation conventions (Li et al., 2023), English and academic self-efficacy (Wang et al., 2017), linguistic expression complexities in scientific writing (Lu et al., 2019), and the additional difficulty of writing articles in a second language (Hanauer & Englander, 2011). Moreover, non-native English speakers face hurdles pertaining to information literacy (Lu et al., 2019; Zhao & Mawhinney, 2015). Overall, non-native English speaking students find themselves in a less favorable position within the sphere of international publishing due to these challenges (Yang et al., 2021).

Considering the Algerian educational system's shift towards incorporating English in educational institutions and research writings, it is of paramount importance to raise the issue that non-native English speaking students may face multifarious challenges not only in expressing their research in English but also in organizing their scientific papers, including lab reports due to disciplinary requirements. As students strive to accurately communicate their ideas, methods, and findings in English, which is neither the language of their specialization nor their native language, language proficiency becomes increasingly important (Schimel, 2012). On top of that, they are confronted with the task of successfully navigating the specific demands and anticipated standards within the field of study, for instance, in Biology, the manner in which laboratory reports are structured and organized can differ across scientific disciplinary norms.

Empirical Research on Laboratory Reports

The organization of laboratory reports in the field of Biology has a pivotal role in enhancing communication within scientific research. Although extensive research has been carried out on scientific writings, there is a relative dearth of studies specifically devoted to examining the organizational structure of laboratory reports, especially in the Algerian context. Mosquera & Quevedo-Hidalgo's (2020) investigation of the difficulties faced by researchers in the presentation of their written laboratory reports in science education offers insightful information about the format of reports. They found that some sections like the introduction, the methods, the results, and the discussion frequently exist in student reports. In addition, they raise the issue of students' difficulty in articulating these sections. However, they do not address the way non-native English speaking students organize the sections following the IMRAD model. Another study was conducted by Vieira et al. (2019) on the discussion section of scientific research articles in different scientific domains. Although their research was not focused on laboratory reports specifically, it did shed light on the organizational characteristics and variations in scientific texts, leaving a gap in comprehending the modifications and adaptions found in laboratory report discussion sections. Additionally, Parkinson (2019) contends that students of sciences use personal pronouns in their laboratory reports to refer to themselves and they utilize obligation/necessity modal verbs to indicate their actions and decisions arising from the necessities of the experimental work. Despite the fact that the study offers valuable data about the grammatical features of laboratory reports, it does not particularly address how non-native English speaking students organize their laboratory reports.

On reviewing and examining the results obtained from some prior studies, it becomes apparent that the existing body of research highlights how scientific texts are generally structured, how disciplinary practices differ, and how writing assignments affect students' learning. Yet, the literature conveying these issues is scarce to the best of the researchers' knowledge. Consequently, more research is required, with a specific emphasis on the organizational structure of English-language laboratory reports and its variations within the IMRAD format in order to communicate proficiently research results within the scientific community.

Method

The Research Approach

The researchers adopted a qualitative approach to gain in-depth insights about the organizational structure of the English-language laboratory reports written by students of Biology in Ouargla University. This type of approach typically focuses on the systematic portrayal and the examination of the characteristics of a phenomenon or a subject in a detailed manner (Creswell & Creswell, 2017). It enables deep examination of a certain instance or cautiously selected cases (Gilbert & Stoneman, 2015).

The Corpus of the Study

The corpus of the study consisted of fifty laboratory reports that were written in English by students at Ouargla University, Algeria during this specific academic year 2022-2023, because during previous years students at Algerian universities predominantly relied on the French language in their scientific writings, but from this year they started adopting the English language in their writings. For the purpose of creating a balanced corpus and ensuring the credibility and reliability of the research results, a random selection was made of an equal number of laboratory reports from Biology sub-disciplines taught at Ouargla University. To clarify further, ten laboratory reports were chosen randomly from Agricultural Sciences, Microbiology, Marine and Continental Hydrobiology, Biochemistry, and Plant Biotechnology. By using a diverse corpus, the study aimed at capturing a wide range of writing practices and organizational patterns that emerge across various contexts and different disciplines. The length of reports varied, ranging roughly from 6 to 10 pages, depending on the type of research, the type of discipline, the scope of investigation, the level of detail required, the experimental design adopted, and the specific guidelines provided to students.

Data Analysis

The study employed an inductive thematic analysis to analyze the corpus. One crucial feature of thematic data analysis lies in its ability to enhance the validity of the analysis, attributed to its accessibility, transparency, and flexibility (Braun & Clarke, 2006). The analysis of the corpus followed Braun and Clarke's (2006) six-phase framework. The analysis was devoted to identifying patterns, variations, and adaptations within the organizational structure of students' laboratory reports, following the IMRAD model.

Ethical Considerations

Participants received detailed information about the investigation aim. Informed consent to the use of laboratory reports was obtained from all participants. Students agreed to provide their reports for analysis, supporting the aim of the research. The ethical principles of research were strictly respected throughout the whole research process to guarantee the confidentiality and anonymity of the participants. The laboratory reports utilized in the analysis were cautiously anonymized, eliminating any identifying information that might jeopardize the students' privacy.

Results and Discussion

The themes and sub-themes that emerged from the analysis process are presented in Table 1 below. Detailed explanations, exemplifications and discussions are provided for each theme and sub-theme.

Table 1
Themes and sub-themes emerging from data analysis

Theme	Sub-themes
Adherence to the IMRAD Model	Variations in Section Length
Variances in Subheadings within the Laboratory Reports Methods Section	Labelling Subheadings
	The Arrangement of Subheadings
Transitions between Sections	The Use of Linking Phrases
	Referencing Previous Sections
Structure of the Discussion Section	Data Analysis and Interpretation
	Locating Findings in the Existing Literature
	Stating Limitations

Adherence to the IMRAD Model

Students of Biology at Ouargla University structure their laboratory reports according to the IMRAD pattern. That is to say, they start their reports with an Introduction followed by the Methods, Results, and Discussion sections, which is in line with Artus et al.'s (2016) instructions concerning writing and organizing laboratory reports. In the Introduction section, students briefly presented background information about the research variables, stated the research question, the hypothesis, and the objectives as well as clarifying the key scientific concepts involved in the experiment. Next, they gave a thorough account of the experimental design and materials used, and the experimental steps in the Methods section. Then, they clearly and concisely presented the findings of the experiment, including the data, the figures, and the statistical analyses in the Results section. Finally, they devoted the Discussion section to explaining and discussing the findings, incorporating them within the existing body of knowledge and addressing any limitations in addition to drawing conclusions about the studied issue. With this content organization, they support Swales & Feak's (2004) assertion regarding the writing of the content of these sections. Moreover, with the adherence to the IMRAD pattern in structuring their reports, students of Biology at Ouargla University ensured a logical flow of information that enables readers to navigate the report effortlessly, in accordance with Sollaci & Pereira's (2004) claim.

However, although students generally adopt the IMRAD model, a clear difference can be detected. This difference can be traced back to disciplinary conventions and specificities.

Variations in Section Length

Some fields of Biology such as Agricultural Sciences prioritize and value the experimental process of research due to the sensitivity and research nature in this field in which pieces of research are likely to be replicated by researchers, if necessary, in order to

find solutions to uncovered issues addressed by this domain. Thus, providing sufficient explanation about the methodological and experimental protocol paves the way for researchers to decide which conditions should be changed in the intended research (Nair & Nair, 2014). Hence, in this case, the greater length of the Methods section in the students' laboratory reports, highlighting all the steps adopted in the methodological phase. One illustrative example of a laboratory report conforming to this observation is a detailed description of the adopted experimental design to investigate the quality of dates in stocks in the Ouargla region. This part includes a "presentation of the study context, description of stocks, justification of choice, sample collection, attack rate of dates in stock, physiochemical study, PH determination, electrical conductivity determination, and simulation test of favorable conditions for pest installation in storage location" (students' laboratory reports, Agricultural Sciences, Ouargla University, 2023). It should be noted that the students who are working in such fields of Biology amplified the clarification of the selected experimental designs.

Overall, the stated variation can be justified by disciplinary norms and the unique features of the research because it was observed in laboratory reports rather than other genres of different domains of Biology. Adherence to the IMRAD model assures a clear and coherent communication of scientific findings, while the slight difference displays the flexibility needed to accommodate disciplinary factors.

Variances in Subheadings within the Laboratory Reports' Methods Section

The examination of the Methods section revealed differences in the subheadings within Biology laboratory reports in Ouargla University. Variations are noticed at the level of labelling and arrangement of subheadings, reflecting diverse options in the experimental approaches and different research objectives.

Labelling Subheadings

Students of Biology across different subfields in Ouargla University employed a variety of labels for the Methods section subheadings. The frequently used subheadings observed in the corpus are Materials and Apparatus, Biological Materials / Experimental Design, Experimental Protocol, Experimental Site, Preparation of the Experiment / Data Collection Procedures, Data Collection Phases / Experimental Measurements, Statistical Analysis, Exploitation of the Results (students' lab reports, Microbiology, Biochemistry, Plant Biotechnology, Marine and Continental Hydrobiology, Ouargla University, 2023). Therefore, variations are extensively detected in the language and the terminology used to label the stated subheadings. The current researchers noticed that the labels of vary with the change in the type of biological discipline that students are working on. The aforementioned findings align with Council's (2009) claim that the type of scientific discipline can somewhat influence the wording of headings and subheadings when researchers report their research outcomes.

The Arrangement of Subheadings

In the context of this research, the arrangement of subheadings of the Methods section in the laboratory reports denotes the sequential order of several subsections or categories. The analysis revealed that the arrangement of these subheadings varies in Biology reports. In the process of writing scientific papers, including laboratory reports, the sequence of headings and subheadings of sections can differ. This variability, as suggested by Swales & Feak (2004) and McMillan (2012), is influenced by many factors, mainly the researchers' and the students' experimental design or the focus of their research. To illustrate, in the analyzed corpus, students of Marine and Continental Hydrobiology started the Methods section of their laboratory reportswith the sample preparation and experimental design, followed by subheadings dedicated to data collection procedures and research tools, concluding with statistical measurements and data interpretation. By contrast, other students in the same field but with different research objectives adopted a distinct order, starting with data collection, moving to sample preparation, and experimental design, finishing with analytical methods. The different arrangements of subheadings mirror the unique decision-making process and research objectives of individual students. Different experimental designs or research objectives can necessitate a different sequencing of subheadings to assure clarity and logical flow within the Methods section.

Transitions between Sections

Essentially, coherence and the flow of ideas in laboratory reports are greatly influenced by the use of transitions between sections. Therefore, transitions are essential to guide readers in their understanding of reports and roadmap the organization of them (Hyland, 2008; Swales & Feak, 1994). Students confirm this viewpoint by demonstrating a skillful use of transitions between sections of their Biology laboratory reports. They make use of linking phrases and they reference the previous sections of their reports.

The Use of Linking Phrases

Students of Biology in Ouargla University displayed a good use of linking phrases to create seamless transitions between sections. The connecting words act as guideposts that logically direct readers through the whole report. By using words and phrases such as 'moreover, in addition, also, furthermore, in contrast…", they can establish relations and demonstrate the interconnectedness of different sections. Some examples from the corpus are "in addition, the results of the experiment are…", "moreover, the sample of the research demonstrated a quick reaction to the used reagent", "besides, the methods opted for discussing the results will highlight the significance of the research as a whole" (students' laboratory reports, Microbiology, Biochemistry, Plant Biotechnology, Ouargla University, 2023).

Referencing Previous Sections

Students demonstrated the ability to connect the current section to previous sections in their laboratory reports. By referencing sections of reports, they ensure continuity and progression between several parts of the text. This can be done, for instance, by referring to the discussion section when stating the implications of the research or building upon the introduction section in the discussion section. Some instances of this in the corpus are "with previous research mentioned above in the report, this result indicates that …", "basing on the findings discussed in the discussion section, the conclusion now will provide some implications" (students' laboratory reports, Microbiology, Biochemistry, Ouargla University, 2023).

In total, students' use of effective section transitions in Biology laboratory reports in Ouargla University improves the text's smooth flow and comprehensibility since they pave the way to the logical progression of ideas and indicate the relationship of various sections to one another in the report.

The Structure of the Discussion Section

The discussion section has a decisive role in research papers, including laboratory reports, because this is the section "where the authors explain meanings of results, state whether or not the hypothesis is confirmed, interpret the results in the light of known facts, and show the importance and the value of the work" (Nair & Nair, 2014, p.21). That is why "it is the longest part of the report" (Pechenik, 1993, p.151). Students generated a consistent structure of the Discussion section of their laboratory reports, validating the standpoint of the aforementioned scholars. A notable trend observed among students of Biology at Ouargla University is their inclination to focus the Discussion section of their reports on the following:

Data Analysis and Interpretation

In this part, students discussed their research results and explained their significance in relation to their research question and hypothesis. The level of detail and the depth of analysis change depending on the complexity of the results and the objectives of the whole work. Some examples found in the students' laboratory reports include statements such as "the obtained data run counter to the suggested hypothesis", "analysis of data revealed that there is a negative correlation between pest quantity and date well state", "the results obtained are significant in improving the used products to test this phenomenon" (students' laboratory reports, Biochemistry, Plant Biotechnology, Marine and Continental Hydrobiology, Ouargla University, 2023).

Locating Findings within the Existing Literature

Students, in their reports, provided contexts and made connections with the larger body of scientific knowledge by discussing how their findings related to or diverged from those of earlier studies. To exemplify this point, the following are some extracts from the

analyzed corpus: "the PH obtained in the present study for Deglat=5.6 is close to the PH obtained by Munier (1973)", "compared to Berhanu (2020), our results are superior", "our results support those obtained by El Haci et al. (2017)" (students' laboratory reports, Plant Biotechnology, Biochemistry, Plant Biotechnology, Ouargla University, 2023).

Stating Limitations

Students of Biology tended to conclude their reports' Discussion sections by declaring the limitations of their studies, acknowledging their awareness of them and signposting to further research. For instance, they wrote "one limitation of our research is the small size which may prevent the generalizability of findings", "further research is needed using another research method", "the use of this instrument in our research may cause bias, thus we call for replicating this study using another research instrument" (students' laboratory reports, Biochemistry, Plant Biotechnology, Agricultural Sciences, Ouargla University, 2023).

Simply put, students of Biology in Ouargla University effectively communicate their findings, discuss them in relation to previous research and acknowledge the limitations of their studies by using a well-structured framework in the Discussion section of their reports.

In essence, the investigation of laboratory reports, as one type of academic discourse, produced in the university context, written by Algerian students of Biology at Ouargla University offered insightful details about the organizational structure and writing conventions within the scope of scientific communication. The research results are in accordance with the work of Milard & Tanguy (2018), Pangesti et al. (2023), Kumar (2023), and Moskovitz et al. (2023) in the field of STEM research papers, which validate that biology research writings predominantly adhere to the IMRAD format. The findings of the current research showed that although the IMRAD model is generally followed, there exist some variations due to disciplinary requirements as norms can differ across various academic disciplines, aligning with Parkinson (2013) and Nair &Nair (2014)'s claims regarding this point. The different subheading arrangements in the Methods section reflect the students' several experimental approaches and objectives. Additionally, transitions between sections are essential for establishing coherence, preserving reports' logical flow, and enhancing their readability. These outcomes support Popova et al.'s (2017) assertion that the IMRAD model encourages modular reading, simplifying the navigation process for readers. The use of linking words, making references to earlier sections and integrating each section within the overall context of research are all skills that students of Biology at Ouargla University exhibit. Lastly, the Discussion section, which includes the analysis of results, integration with prior literature, and discussion of limitations, reveals patterns in the structure and in the content of their reports.

Conclusion, Recommendations, and Limitations

The purpose of the present study was to investigate thoroughly the adherence of students of Biology in Ouargla University to the IMRAD model in organizing their laboratory

reports as a major type of academic discourse to disseminate the research findings. The findings of the study indicated that the students of Biology in Ouargla University adhere to the IMRAD pattern in their English-written laboratory reports while some variations exist within the subheadings, transitions between sections, and the structure of the Discussion section that reflect the impact of disciplinary conventions.

The research results emphasize the necessity of teaching the IMRAD format to students, particularly those in scientific fields who use English in their specialities. This widely used framework effectively organizes and disseminates scientific research. The observed variations, influenced by disciplinary norms, underscore the necessity for pedagogical approaches and training tailored to specific conventions and requirements in various fields. Increasing students' awareness of these differences plays a crucial role in enhancing their scientific communication and writing skills, consequently contributing to improved academic performance.

The study has some limitations. First, the focus of this investigation was only on the discipline of Biology; hence, its results cannot be generalized to other scientific disciplines that also need to be investigated to gain a complete picture of the topic. In light of the aforementioned, the results are firmly placed in the highly politicized English language landscape and the new policies of enforcing English as a medium of instruction in the Algerian institutions of higher education. Consequently, these results can benefit researchers and policy makers in similar contexts. Furthermore, in this research, the researchers examined only the organizational structure of laboratory reports and did not explore other aspects of scientific writing such as the linguistic and the rhetorical features of laboratory reports. Therefore, further studies can broaden the investigation to examine a variety of aspects in order to improve the writing practices of students in the scientific community, thereby ensuring effective knowledge dissemination and science communication.

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Istraživanje upotrebe IMRAD formata za laboratorijske izveštaje studenata biologije

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Apstrakt *Akademski diskurs služi kao platforma za sistematsku komunikaciju naučnih nalaza, pri čemu su laboratorijski izveštaji primarni tip koji koriste istraživači i studenti. Ovi izveštaji prate specifične konvencije i formate, obezbeđujući jasnoću i kredibilitet u naučnoj komunikaciji. Ova studija istražuje organizacionu strukturu laboratorijskih izveštaja iz biologije na engleskom jeziku, sa fokusom na pridržavanje studenata modela Uvod, Metode, Rezultati i Diskusija (IMRAD). Nakon sastavljanja korpusa od pedeset laboratorijskih izveštaja studenata biologije sa Univerziteta u Uargli, Alžir, istraživači su primenili kvalitativni pristup i tematsku analizu podataka. Rezultati su pokazali opšte pridržavanje IMRAD formatu, sa manjim varijacijama, posebno u podnaslovima u odeljku Metode, prelazima između odeljaka i strukturi odeljka Diskusija, što odražava disciplinarne norme. Ovi nalazi ukazuju na mogućnosti da nastavnici eksplicitno obrade nijanse IMRAD strukture i pisanja u oblasti biologije. Razumevanjem načina na koji studenti primenjuju ovaj model, instruktori mogu osmisliti efikasnije lekcije i instrukcije u pisanju koje podstiču jasnoću i disciplinarno razumevanje u pisanju laboratorijskih izveštaja. Ova studija naglašava značaj istraživanja uticaja eksplicitnih instrukcija na kvalitet studentskog pisanja i razumevanje IMRAD konvencija. Preporučuje se da se ove varijacije dalje istraže kako bi se poboljšalo razumevanje komunikacionih veština studenata, čime bi se unapredio kvalitet njihovog pisanja u akademskom kontekstu. Pored toga, ova istraživanja ističu važnost istraživanja uticaja eksplicitnih instrukcija na kvalitet studentskog pisanja i razumevanje IMRAD konvencija.*

Ključne reči: *akademski diskurs, biologija, disciplinarne norme, IMRAD model, laboratorijski izveštaji.*

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Foreign Language Teaching Anxiety of In-Service Teachers in Serbia – the Importance of Recognising and Alleviating It

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Abstract *Foreign language teaching anxiety (FLTA) is a characteristic of non-native FL teachers, which prevents them from using language-intensive activities and spontaneous communication in the classroom, thus reducing the effectiveness of teaching. It increases foreign language learning anxiety (FLLA), which is considered to have the most detrimental effect on FL learning of all affective factors. As there are no studies about FLTA in the Republic of Serbia, this paper aims to identify the level of FLTA experienced by Serbian in-service teachers, to find out whether they are familiar with the phenomenon, whether familiarity with FLTA can help to alleviate it, and whether good methodological instruction and practical training can help future teachers overcome the problem. The research was conducted using a questionnaire designed for this purpose, which elicited both quantitative and qualitative data. A total of 585 in-service FL teachers participated. The results show that the respondents experience FLTA to a moderate degree. However, the majority of the respondents are not aware that FLTA is studied as a specific and common phenomenon in international literature. According to the obtained results, FLTA can be reduced by raising FL teachers' awareness of it, and the faculties of philology can contribute to this by providing future teachers with high-quality methodological and practical training. If they overcome FLTA, FL teachers will be able to create a relaxed atmosphere in the classroom, boost learners' self-confidence, and reduce FLLA. Consequently, target language usage and learner engagement, as well as teaching efficiency, would be maximised.*

Keywords: *foreign language teaching, foreign language learning, foreign language anxiety, foreign language teaching anxiety, foreign language learning anxiety.*

Introduction

Foreign language (FL) teachers who are non-native speakers are educated for their job in the context of formal education, and as FL learners, they experience foreign language learning anxiety (FLLA). FLLA is defined as "a distinct complex of self-perceptions,

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beliefs, feelings, and behaviours related to classroom language learning, arising from the uniqueness of the language learning process" (Horwitz et al., 1986, p. 128). It is, therefore, considered a characteristic of non-native learners of a language, and an affective factor with the most detrimental impact on the success of FL learning, more detrimental than the impact of motivation and students' attitudes towards language learning (Arnold & Brown, 1999; MacIntyre & Gregersen, 2012). As such, FLLA has become one of the most comprehensively studied affective variables within the realm of FL learning (Dörnyei & Ryan, 2015).

According to the existing research findings, while learning an FL, learners' self-esteem and self-awareness are more pronounced than while learning other subjects due to the impossibility of authentic communication and desired self-representation, caused by their inability to achieve native-like fluency (Horwitz et al., 1986). Speaking, as a productive skill which requires the automatic combination of several stages, such as conceptualisation, formulation, articulation and self-control, is the greatest source of FLLA despite the fact that the automatism itself is what non-native speakers of a language inherently lack in order to be able to achieve native-like competence (Carter & Nunan, 2001).

FL teachers' attitudes, behaviour and choice of methods can arouse and significantly increase FLLA, but the teacher's role in helping the learners overcome the problem has also been proven to be of paramount importance (Dörnyei, 2005; Patil, 2008). Unfortunately, there is still a paucity of research studies on FL teachers' ability to play this role successfully given that, despite the high level of proficiency acquired during their studies, they are actually learners of the language they teach (Horwitz, 1996; İpek, 2006; Öztürk, 2016). Therefore, it would be rather unreasonable to expect that the FLLA they experience as FL learners would disappear automatically with "the award of teacher certification upon the completion of the required course of study" (Horwitz, 1996, p. 366). On the contrary, becoming certified to teach a language does not mean that one's language learning is complete, nor does it confer immediate self-confidence. FL teachers are actually lifelong language learners, and the FLLA they experienced as FL learners persists, but in a different form, due to the influences of numerous other factors closely intertwined with teaching practice. Such anxiety is termed "foreign language teaching anxiety" (FLTA).

FLTA enhances FLLA, and undermines the effectiveness of FL teaching (Horwitz, 1996). Due to a lack of self-confidence, FL teachers, both consciously and unconsciously, avoid using the target language in the classroom and spontaneous interaction with learners, as well as innovations and communication activities which would encourage learners to speak and actively use the passively acquired FL knowledge (Horwitz, 1996; Tum, 2014). According to Horwitz (1996, p. 366), "when language teachers are not comfortable using the target language, they may unconsciously choose instructional strategies that shield themselves from having to use the language publicly and actively", and resort to "linguistic interactions that are predictable and more easily controlled", thus failing to serve as positive role models as language learners. On the other hand, when they notice that their teacher is not comfortable using an FL, learners cannot feel comfortable either.

Therefore, more extensive research into the sources of FLTA and strategies for overcoming or at least alleviating it would inevitably help to reduce FLLA, and consequently

improve FL teaching efficiency, thus maximising learners' achievements as well (Kim & Kim, 2004). It would raise FL teachers' awareness that they are not exceptions, and that FLA is a natural phenomenon, inherently tied to learning an FL and therefore cannot disappear automatically once one becomes a teacher. Unfortunately, FLTA is a topic that FL teachers dare not speak about as they are not willing to admit they experience it. As a result, each individual struggles with the problem, and tries to overcome it in their specific ways.

In the Republic of Serbia, this is the first paper dealing with the FLTA issue. Unfamiliarity with this specific phenomenon has led to the widely held misconception among both educational stakeholders and the entire society that FL teachers have to develop native-like competence, which they can hardly accomplish even if they spend an extended period of time living in the target language community. Generally speaking, "few non-native teachers will have the necessary time and access to a target community to achieve such a result', i.e. to become able to speak an FL flawlessly and as spontaneously as their native tongue" (Horwitz, 1996, p. 367).

This paper is therefore aimed at determining the FLTA level of Serbian FL teachers, and initiating a discussion about this serious and common phenomenon, the understanding of which may improve the quality of FL teaching as an important segment of education driven by internationalisation and globalisation, and help to educate successful language users.

Literature review

The research presented in this paper is grounded in the seminal paper titled 'Even Teachers Get the Blues', written in 1996 by Elaine K. Horwitz, who is considered the pioneer in studying the FLA of both FL learners and teachers. In this paper, the author explains FLTA, underlining the complexity of the phenomenon. She claims that FLA should not be regarded exclusively as a consequence of target language deficiencies as it is often the high achievers that recognise and magnify "small imperfections in target language productions" (Horwitz, 1996, p. 367). She goes even further to explain that the language learners who want to master an FL sincerely may be more susceptible to FLA than those "who have no personal stake in the effort", because motivation and ego investment are closely related to FLA. FL teachers serve as perfect examples. Similarly to teachers of other subjects, they have knowledge gaps even though they are expected to be experts in their teaching specialty. However, whereas other teachers can thoroughly prepare the material necessary for a specific lesson, FL teachers must always be ready to speak the language in front of the class, and if they aim to encourage spontaneous language use, they can by no means predict the path a classroom conversation might take, which increases the risk of mistakes and vocabulary lapses "at every moment of every class" (Horwitz, 1996, p. 367). The result is usually the avoidance of spontaneous interaction and extensive use of the target language, which seriously impacts the effectiveness of FL instruction.

Horwitz (1996, p. 368) emphasises that even if FLTA did not affect instruction at all, it would be worth exploring as it seems to be "a substantial detriment to the mental

well-being and job satisfaction of foreign language teachers", who speak in the FL to a student audience on a daily basis. The reason is the complexity of FL instruction, reflected in the fact that "the language being taught is both the subject-matter and medium of instruction, the two being in constant interdependence" (Reves & Medgyes, 1994, p. 364). However, international papers dealing with in-service teachers' FLTA are scarce because in-service teachers have proven to be difficult to approach, reluctant to reveal their emotions and problems, and opposed to being interviewed or observed while delivering lectures (Merç, 2010; Tum, 2012; Yoon, 2012). So, most of the existing papers worldwide have studied the FLA of student teachers or pre-service teachers, and confirmed that they experience it despite high proficiency (Gregersen & Horwitz, 2002; Tum, 2014).

Horwitz (1996) also suggests some strategies that can alleviate FLTA. She agrees with Powell (1991) that the very acknowledgement of anxiety is the most important way of alleviating it, explaining that if a teacher expresses his/her feelings of FLTA, they "may find support and possibly a fellow sufferer" (Horwitz, 1996, p. 368). She also points out to the necessity of giving oneself permission to be less than perfect, and giving oneself credit for the target language achievement by recognising what one actually can do with the target language, but at the same time making a plan to improve one's FL proficiency. She also calls for FL instructors' attentiveness to their students' FLA.

It was long before Horwitz that Peter Medgyes (1983), a Hungarian Professor of Applied Linguistics, claimed that despite their high proficiency level, non-native FL teachers are actually FL learners, who have the feelings of dissatisfaction and guilt because their mastery of an FL is not as perfect and spontaneous as they expect it to be. So, although he did not use the term FLTA, he actually wrote about it in his paper "The Schizophrenic Teacher", explaining its occurrence by the fact that FL teachers are constantly trying to teach their students something they themselves have not fully mastered.

FLTA is defined as "an emotional and affective state experienced by a language teacher because of personal, perceptual, motivational, and technical concerns of language teaching before, during, and after the teaching practice" (Aydin, 2016, p. 639). The author agrees that those concerns characterise only non-native FL teachers (Aydin & Uştuk, 2020).

Tum (2014, p. 631) traced the roots of the concerns to three crucial periods in FL teachers' lives: first they experience FLLA, and then, as they approach the end of their studies, they become aware of the challenges of the teaching profession, and "fall prey to the common misconception that only full proficiency and perfect performance in the target language are acceptable for language teachers". Lastly, instead of boosting their self-confidence, getting a diploma additionally emphasises numerous obligations awaiting them in the classroom.

Based on the aforementioned, it can be concluded that FL teachers' educators bear huge responsibility for making the transition from an FL learner to an FL teacher less intimidating and stressful by making their students aware of FLTA in the first place, but also by providing them with sufficient practical experience, and equipping them with successful coping strategies (Tum, 2012).

Research methodology

Given the detrimental effects of FLTA on the quality of FL instruction and FL teachers' satisfaction with their job, together with the fact that the number of non-native FL teachers is increasing worldwide (Braine, 2010), addressing FLTA is becoming more important than ever. Given that no studies about it have been published in the Republic of Serbia as yet, this paper aims to investigate in-service teachers' experiences of FLTA by addressing the following research questions:

1. Are Serbian in-service FL teachers familiar with the concept of FLTA?
2. Do Serbian in-service FL teachers experience FLTA?
3. Can in-service FL teachers' awareness of FLTA help to alleviate it?
4. Can good methodological instruction and practical training during their studies help future teachers overcome the burden of FLTA?

The data used in the research were collected within the framework of a more extensive research endeavour carried out for the purpose of a doctoral dissertation (Marinković, 2024). A total of 585 in-service FL teachers, with at least one year of teaching experience, took part. About half of the respondents teach in primary schools, a quarter in secondary schools, whereas about 10% of the respondents are teachers in higher-education institutions. The percentage of the respondents teaching at two levels of education, or in both state and private schools is 14%. Most respondents have between 5 and 25 years of teaching experience (77.6%), whereas the percentage of the least and most experienced teachers is much lower, i.e. 14% and 8.4%, respectively. English teachers (65.6%) by far outnumber the teachers of German (13.3%), French (9.1%), Italian (2.4%), and Spanish (1.5%). The remaining teachers (8%) teach some other language, or two or more languages.

Due to the general scarcity of research into in-service teachers' FLTA, the available instruments designed to measure student teachers' and pre-service teachers' FLA were not fully applicable to this specific research context. So, a more convenient instrument was designed, which comprised three parts: a combination of yes/no, multiple choice and open-ended questions aimed at eliciting the respondents' background information, a 29-item scale to measure FLTA, and four open-ended questions eliciting the respondents' opinion on FLTA sources, coping strategies, the role of FL teachers' educators in alleviating FLTA, and their comments about the issue. The questionnaire was administered via the Facebook profiles of FL teachers in Serbia, and emailed to all the primary and secondary schools and higher education institutions in our country, the information on which is available in the database "Edukacija".

Before the data analyses, the metric properties of the scale were tested, and it was found to be reliable, with an acceptable Cronbach's alpha value (α=0.872) (Nunnally, 1978; De Vellis, 2003). The appropriateness of the data for factor analysis was checked using Burtlett's Test of Sphericity and the Kaiser-Meyer-Olkin Measure of Sampling Adequacy, the former yielding a statistically significant value ($p < 0.01$), and the latter being 0.889, i.e. higher than the recommended value of 0.6 (Kaiser, 1970). By means of the Principal Component Analysis and Promax rotation, and based on Catell's criterion, three subscales were identified: *Fear of negative evaluation* (Subscale 1), *Fear of failure of language-intensive activities* (Subscale 2), and *Fear caused by insufficient preparation for classes* (Subscale 3).

The identified components coincided with some of the FLTA sources reported in the available literature (Aydin & Uştuk, 2020; Horwitz, 1996; Kim & Kim, 2004; Tum, 2014; Yoon, 2012). The normality test showed normal distribution at the level of the scale ($D(585) = 0.027$, $p = 0.200$).

For the purpose of this paper, the quantitative data analysis was performed using the descriptive statistics techniques of the SPSS software, whereas the obtained results were supported by the findings of the inductive thematic analysis of the qualitative data collected through the respondents' answers to the open-ended questions in the final part of the questionnaire.

Research results and discussion

Are Serbian in-service FL teachers familiar with the concept of FLTA?

This question was inspired by the lack of discussion about and research into FLTA in the Republic of Serbia. Namely, while there are several papers about FLLA in our country (Ćirković-Miladinović, 2019; Radić-Bojanić, 2017; Suzić, 2015; Šafranj, 2018), there are neither papers nor accredited professional development programmes dealing with FLTA. The latter, together with the fact that the majority of FL teachers in Serbia work in primary and secondary schools, and are not required to engage in research work and write scientific papers, supports the idea that the majority of FL teachers are not familiar with the concept of FLTA.

According to the results obtained, most respondents, 62.2% to be precise, had never heard of FLTA before they took part in this research. However, far more respondents, i.e. 92.1%, agreed that FLTA is a common, natural phenomenon, which requires discussion and open dialogue both in seminars and conferences, and throughout the education for this profession. This clearly indicates that most in-service FL teachers in Serbia actually experience FLTA, but are not ready to admit that, nor initiate the discussion about the issue themselves.

Do Serbian in-service FL teachers experience FLTA?

The question was inspired by the existing literature showing that FLTA is a common problem among non-native teachers, caused primarily by their lack of self-confidence due to the impossibility of achieving native-like competence. Given that a lot of current teachers were educated during the sanctions in the 1990s, when it was impossible to leave the country and get in contact with native speakers, when language use was classroom-based and therefore strictly controlled and artificial, and practical training narrowed down to the passive observation of a few classes in primary schools, we expected to find that FLTA is common among Serbian in-service FL teachers.

The respondents expressed their agreement with the scale items on a five-point Likert scale. The obtained means and standard deviations per item, and the average mean score are given in Table 1.

Table 1
FLTA means per individual item

	Item	*M*	*SD*
T1	I feel nervous when I am not well prepared for the class.	2.92	1.00
T2	I worry that my students will be bored in my classes.	3.43	1.02
T3	I feel nervous when I speak in the target language in the classroom.	1.85	0.84
T4	I become so nervous during the lesson that I forget the things that I know.	1.70	0.79
T5	I am afraid that my students will not understand the instructions given in the target language.	2.60	1.00
T6	I feel uncomfortable when I use Serbian in the classroom.	2.18	0.96
T7	I avoid talking to people who are proficient in the language I teach.	2.00	1.01
T8	I feel embarrassed when speaking in the target language in the presence of my colleagues and people I am not familiar with.	2.61	1.18
T9*	I feel calm in the classroom because I can easily improvise.	2.00	0.81
T10	When teaching in the target language, I am anxious about making a grammar or pronunciation mistake.	2.74	1.08
T11	While writing on the board, I worry about misspelling a word.	2.35	1.02
T12	I notice the mistakes I make while speaking in the target language.	3.63	0.93
T13	I feel uncomfortable when I realise that I have mispronounced a word.	3.03	1.06
T14	I worry that people might think I am not competent enough because of my imperfect pronunciation.	2.41	1.13
T15*	I am satisfied with my pronunciation.	2.07	0.79
T16*	I often discuss current issues with my students.	2.42	0.98
T17*	If I make a mistake during the lesson, I tell my students that I have made it.	1.75	0.74
T18*	The use of contemporary teaching methods makes foreign language instruction more efficient and interesting.	1.90	0.79
T19*	I like to experiment with new teaching methods in the classroom.	2.23	0.89
T20	I feel more comfortable when teaching less proficient students.	2.02	0.92
T21	I find it hard to teach students with different proficiency levels.	3.08	1.08
T22	I worry that I will not know the answers to the questions students might ask.	2.06	0.96
T23	I worry that I will finish the activities before the class ends.	2.01	0.93
T24	I feel uneasy when assessing students' knowledge.	2.29	1.01
T25	I feel as if my students are testing my knowledge.	2.12	0.94
T26	My students are not interested and active enough.	2.74	0.93
T27	I feel more comfortable when I teach grammar than during the activities aimed at the development of students' speaking or listening skills.	2.34	0.99
T28	I avoid group work because I am afraid that I will not be able to keep the class under control.	2.33	0.98
T29	I feel worried about problematic students even before entering the classroom.	2.97	1.07
	Average mean score:	2.39	0.96

According to some research studies in this field (Öztürk, 2016; Tum, 2012), low FLTA levels include mean scores lower than the difference between the average mean score and average standard deviation (in this case: 1–1.43). On the other hand, high FLTA levels comprise mean scores higher than the sum of the average mean score and average standard deviation (in this case: 3.35–5), whereas the mean values falling within this range (i.e. 1.44–3.34) indicate moderate FLTA levels. Based on the results given in Table 1, it can be concluded that FL teachers who took part in this research experience a moderate level of FLTA.

As shown in Table 1, FL teachers experience high levels of FLTA when they notice the mistakes they make while speaking in the target language, which supports the findings of some other researchers that the tendency to achieve native-like competence and fear of negative evaluation are the greatest sources of FLTA (Cook, 1999; Horwitz, 1996). High FLTA is also caused by the respondents' fear that students will be bored in their classes, whereas the situations described in other items cause moderate FLTA, though their values significantly vary within this range, and none of the situations included cause low FLTA. The average mean scores per subscale are shown in Table 2.

Table 2
FLTA means per subscale

Subscale	*M*	*SD*
Fear of negative evaluation	2.34	0.63
Fear of failure of language-intensive activities	2.38	0.99
Fear caused by insufficient preparation for classes	2.48	0.53

All the means given in Table 2 indicate moderate FLTA, and their differences are not significant. A closer look at the values shown points out to the importance of thorough preparation for classes as an effective means of alleviating FLTA.

Can in-service FL teachers' awareness of FLTA help to alleviate it?

The comparison between the FLTA level of the respondents who were familiar with the phenomenon and those who were not was performed using the *t*-test of independent samples. At the level of the whole scale, the difference proved to be statistically significant ($t(583) = -2.64$, $p < 0.01$) (Table 3). As for individual subscales, a statistically significant difference was revealed only with regard to the fear of failure of language-intensive activities (Subscale 2) ($t(583) = -3.640$, $p < 0.01$). Therefore, it can be concluded that by introducing FL teachers to the problem of FLTA, and by initiating open discussions about it, it may be possible to significantly alleviate their fear of failure in activities which require intensive language use in the classroom. Given that contemporary FL teaching approaches insist precisely on the intensive use of the FL in various classroom

activities, we could expect that if in-service FL teachers' FLTA decreased, such activities would be more frequently used in the FL classroom in our country. Furthermore, less anxious teachers would be able to create a more relaxed atmosphere, which would help reduce FLLA and boost learners' engagement, thus improving the efficiency of both FL teaching and learning (Horwitz, 1996).

Table 3
FLTA levels with regard to respondents' familiarity with it

	Have you ever heard about the phenomenon of FLTA?	*M*	*SD*
Whole scale	Yes	**2.33**	0.46
	No	**2.43**	0.46
Subscale 1	Yes	2.28	0.61
	No	2.38	0.65
Subscale 2	Yes	**2.27**	0.51
	No	**2.44**	0.55
Subscale 3	Yes	2.46	0.57
	No	2.50	0.50

Note. The significantly different values are bolded. $N = 221$ for the group of respondents who answered affirmatively; $N = 364$ for the group who answered negatively.

As shown in Table 3, the respondents who were familiar with FLTA, who had read or inquired about it, reported lower FLTA levels than those who had never heard about the phenomenon. This corresponds to the conclusions of existing studies, according to which the very realisation that one is not an exception, and that other teachers experience FLTA too can give one significant relief (Powell, 1991). Therefore such a conclusion confirms that the scarcity of the literature devoted to this phenomenon is unjustified, underscoring the necessity of raising FL teachers' awareness about it, and introducing them to the studies where they can read about others' experiences, and about coping strategies that have proven to be successful in the teaching practice.

Can good methodological instruction and practical training during their studies help future teachers overcome the burden of FLTA?

One of the questions aimed at eliciting the respondents' background information referred to their satisfaction with the FL teaching methodology courses and practical training organised during their studies. The majority of the respondents (60.34%) answered negatively. The mean FLTA scores of both groups are given in Table 4.

Table 4
FLTA levels with regard to satisfaction with methodology courses and practical training

	Are you satisfied with the practical training experience and knowledge of FL teaching methodology acquired during your studies?	*M*	*SD*
Whole scale	Yes	**2.29**	0.45
	No	**2.46**	0.46
Subscale 1	Yes	**2.20**	0.56
	No	**2.43**	0.59
Subscale 2	Yes	**2.28**	0.51
	No	**2.44**	0.56
Subscale 3	Yes	2.43	0.51
	No	2.52	0.51

Note. The significantly different scores are bolded. *N*=232 for the group of satisfied respondents; *N*=353 for the group of dissatisfied ones.

The results of the *t*-test of independent samples show that the differences in FLTA between the group of respondents who were satisfied with the methodological knowledge acquired and practical experience gained during their studies and the group of dissatisfied ones are significant at the level of the whole scale, $t(583) = -4.246$, $p < 0.001$, Subscale 1 (*Fear of negative evaluation*), $t(583) = -4.229$, $p < 0.001$, and Subscale 2 (*Fear of failure of language intensive activities*), $t(583) = -3.310$, $p < 0.01$, whereas the difference at the level of Subscale 3 (*Fear caused by insufficient preparation for classes*) is not significant. So, high quality methodological instruction and practical experience can help reduce the fear of negative evaluation and fear of the failure of the activities which require intensive FL use, and consequently can alleviate FLTA.

Such a conclusion is supported by the answers to the open-ended questions in the third part of the questionnaire. The respondents emphasised that student teachers should have more methodology-related courses in each year of their studies at the expense of studying literature, that they should have more speaking practice, and that their practical training should be more seriously organised in order to provide them with opportunities of teaching at different levels of education, after which they would discuss their emotions and experiences with peers and mentors, instead of passively observing the work of experienced teachers in primary schools only. The dissatisfied respondents complained about too much theory, either outdated or related to ideal FL learning conditions, which had almost nothing in common with the typical FL classroom in our country. The pedagogical implications suggested by the respondents highlight the role of the faculties of philology in alleviating FLTA and preventing ineffective language teaching, and call for changes that should be taken into consideration by educational decision-makers in order to bridge the gap between the FL learning outcomes as stated in the national curricula and those actually achieved.

Conclusion

The results of research into FLTA worldwide have shown that it is worth further exploring in individual societies, given that its sources can be closely intertwined with the educational, cultural, and economic specificities of different countries. So, this paper focuses on in-service FL teachers in the Republic of Serbia, introducing the topic into the national academic literature, and offering a contribution to filling the gap between the abundance of studies about FLLA and the paucity of those about FLTA at the international level.

The findings presented in the paper show that most in-service FL teachers who participated in the research were not familiar with the concept of FLTA. Therefore, the fact that there are neither studies nor discussions about it in our country comes as no surprise. On the other hand, the fact that Serbian FL teachers are not familiar with the phenomenon does not mean that they do not experience it. On the contrary, the participants were found to experience FLTA to a moderate degree, and each of the factors covered by the research, such as fear of negative evaluation, fear of language-intensive activities, and fear of insufficient preparation for classes was found to cause moderate FLTA.

The study revealed that the teachers who were familiar with the concept of FLTA reported lower levels of this phenomenon than those who had never heard of it. Such a finding is promising given that simply by talking about the problem publicly, and with fellow teachers, FLTA can be alleviated. The issue should be demystified by FL teacher educators, who are supposed to prepare future teachers for what awaits them upon graduation. This can be achieved only if future teachers are provided with thorough methodological knowledge and sufficient practical experience in order to be able to understand the causes of the problem. Therefore, this study has significant pedagogical implications, and calls for serious changes in the structure of teacher training programmes in the FL domain.

The paper also points to the necessity of including FLTA as a topic of professional development programmes designed for in-service FL teachers in order to raise their awareness of the phenomenon, and encourage them to discuss the issue openly, exchange experiences, and share successful coping strategies.

Reducing FLTA is a burning issue in the contemporary FL teaching practice if the goal of educating autonomous language users, able to communicate with native and non-native speakers without constraints and meet the demands of the global labour market is to be achieved.

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Jezička anksioznost nastavnika stranog jezika u Srbiji – značaj njenog prepoznavanja i ublažavanja

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Apstrakt *Jezička anksioznost (JA) nastavnika stranog jezika je pojava svojstvena neizvornim govornicima koji se bave nastavom stranog jezika. Dovodi do izbegavanja nastavnih aktivnosti koje zahtevaju intenzivnu upotrebu stranog jezika i spontane konverzacije sa učenicima, pa samim tim umanjuje efikasnost nastave. Negativno se odražava i na JA učenika stranog jezika, koja ima najštetniji uticaj na učenje stranog jezika od svih afektivnih činilaca. Pošto u Republici Srbiji nisu vršena istraživanja o JA nastavnika stranog jezika, cilj rada je da se utvrdi nivo JA prisutan kod nastavnika stranog jezika u našoj zemlji i ispita da li buđenje svesti nastavnika o ovoj pojavi može doprineti njenom smanjenju, kao i da li kvalitetna metodička nastava i stručna praksa tokom studija mogu pomoći da se problem prevaziđe, sudeći po mišljenju ispitanika. Istraživanje je sprovedeno pomoću upitnika kreiranog u tu svrhu, koji je omogućio prikupljanje i kvantitativnih i kvalitativnih podataka. Učestvovalo je 585 nastavnika stranog jezika. Dobijeni rezultati pokazuju da je kod ispitanika prisutan umeren nivo JA. Iako se suočavaju sa ovim problemom, većini ispitanika nije poznato da se JA nastavnika stranog jezika izučava kao posebna pojava u stranoj literaturi. Rezultati pokazuju da se ova vrsta anksioznosti može ublažiti osvešćivanjem nastavnika stranog jezika o njoj, kao i da filološki fakulteti mogu značajno doprineti njenom prevazilaženju kroz kvalitetnu metodičku nastavu i stručnu praksu. Ukoliko bi prevazišli problem JA, nastavnici stranog jezika bi obezbedili opuštenijeu atmosferu na času, povećali samopouzdanje učenika i ublažili njihovu JA. Samim tim bi upotreba stranog jezika na času bila intenzivnija, učenici aktivniji, a nastava efikasnija.*

Ključne reči: *nastava stranog jezika, učenje stranog jezika, jezička anksioznost, jezička anksioznost nastavnika stranog jezika, jezička anksioznost učenika stranog jezika.*

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Analiza povezanosti vršnjačkog nasilja i dosade kod učenika u školama u Srbiji

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Apstrakt *U radu se ispituje povezanost pretrpljenih oblika vršnjačkog nasilja sa prisustvom osećaja dosade kod učenika na osnovu podataka dobijenih iz PISA 2022. Posledice pretrpljenog vršnjačkog nasilja su veoma negativne i dugotrajne, pri čemu se odražavaju na sve aspekte života učenika: akademske, psihološke, zdravstvene, socijalne i dr. Stoga je važno ispitivati faktore povezane sa vršnjačkim nasiljem u cilju suzbijanja i prevencije svih oblika agresije u školama. Novija istraživanja pokazala su pozitivnu povezanost osećaja dosade sa vršnjačkim nasiljem. U ovom radu korišćeni su podaci PISA istraživanja sa teritorije Republike Srbije. Uzorkom je obuhvaćeno 6 413 učenika iz 181 škole. Iz upitnika za učenike su odabrane dve grupe stavova kojima je merena učestalost trpljenja nasilja s jedne strane i osećaja dosade s druge strane. Faktorskom analizom izdvojeni su faktori pretrpljenog nasilja: relacijsko i fizičko sa verbalnim, dok su kod osećaja dosade izdvojena takođe dva faktora: distrakcija i odbacivanje zadataka/interesovanja. Daljom analizom utvrđeno je da između ovih faktora postoji značajna pozitivna veza, naročito između dosade i pretrpljenog fizičkog nasilja sa verbalnim. Ovakvi nalazi ukazuju na neophodnost obrazovnog sistema da prepoznaje učenike sa ispoljavanjem viših nivoa dosade jer su takvi učenici u riziku od potencijalnog trpljenja vršnjačkog nasilja. Takođe, u obrazovnim strategijama je poželjno planirati i primenjivati strategije intervencije i postupke koji mogu efikasno smanjiti dosadu i viktimizaciju kod učenika u obrazovnim okruženjima.*

Ključne reči: *vršnjačko nasilje, dosada u školi, žrtve vršnjačkog nasilja, distrakcija, odustajanje od zadataka i interesovanja.*

Uvod

Funkcija škole kao obrazovno-vaspitne ustanove jeste stvaranje pozitivne školske klime koja doprinosi da se svi učesnici obrazovno-vaspitnog procesa u školskom okruženju osećaju socijalno, emocionalno i fizički sigurno, čime se pospešuje pravilan

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individualni razvoj i postignuća mladih (Tadić i Kordić, 2024). Takođe, kao jedan od ciljeva obrazovanja i vaspitanja, Zakon o osnovama sistema obrazovanja i vaspitanja Republike Srbije definiše obezbeđivanje podsticajnog i bezbednog okruženja za celoviti razvoj deteta, učenika i odraslog, kao i razvijanje nenasilnog ponašanja i uspostavljanje nulte tolerancije prema nasilju (Zakon o osnovama vaspitanja i obrazovanja, 2023). Uprkos tome, svedoci smo sveprisutnije pojave nasilja i agresivnog ponašanja u školama svuda u svetu. Prema podacima Organizacije za ekonomsku saradnju i razvoj (u daljem tekstu: *OECD*), približno 20% učenika koji su učestvovali u istraživanju Programa međunarodne evaluacije obrazovnih postignuća 2022 (u daljem tekstu: *PISA*) izjavilo je da su izloženi vršnjačkom nasilju u školi najmanje nekoliko puta mesečno, dok je u Srbiji taj podatak 15,9% (OECD, 2023). Zbog negativnog uticaja vršnjačkog nasilja, posebno u adolescenciji, koji može dovesti do narušavanja zdravstvenog stanja, rizika od anksioznosti, depresije i slabijeg akademskog postignuća kod žrtava (Man et al., 2022), važno je utvrditi prediktore, manifestacije i posledice ovakvog ponašanja. Odnos između dosade i vršnjačkog nasilja dobija sve više pažnje u obrazovnim istraživanjima, otkrivajući složenu interakciju koja značajno utiče na ponašanje učenika (Pfattheicher et al., 2023; Vasileia et al., 2017; Zhao et al., 2022).

Osnovni cilj ovog rada je da se ispita povezanost između pretrpljenog vršnjačkog nasilja i osećaja dosade kod učenika u Republici Srbiji na osnovu istraživanja PISA 2022.

Teorijska polazišta istraživanja

Vršnjačko nasilje je specifična vrsta agresivnog ponašanja, koje uključuje neželjene i negativne radnje u kojima neko namerno i ponavljano nanosi štetu i nelagodu drugoj osobi, koja se teško može odbraniti. Zlostavljanje je karakterisano sistematskom zloupotrebom moći i nejednakim odnosom između zlostavljača i žrtve, i ono može biti fizičko (udaranje, pesničenje, šutiranje), verbalno (vređanje i ismevanje) i relacijsko.

Relacijsko nasilje odnosi se na fenomen socijalne isključenosti, gde neka deca budu ignorisana, isključena iz igara ili zabava, odbijena od vršnjaka, ili su žrtve govora mržnje i drugih oblika javnog ponižavanja i sramote. Međunarodna literatura ističe da su dečaci češće uključeni u vršnjačko nasilje nego devojčice i više fizički nasilni, dok devojčice imaju tendenciju da više pokazuju agresiju u međusobnim odnosima (Čaprić i Videnović, 2024; Olweus, 1991; Woods & Wolke, 2004). Poslednjih godina se kao poseban oblik zlostavljanja u svetu, pa i u Srbiji, izdvaja „elektronsko siledžijstvo" (engl. *cyber bullying*), koje se definiše kao slanje ili objavljivanje povređujućih ili surovih tekstova ili slika koristeći internet ili druga digitalna komunikaciona sredstva (Kuzmanović i sar., 2019; Popadić, 2009). U svim zemljama i ekonomijama, bez obzira na razvijenost, verbalno i relacijsko maltretiranje (npr. ismevanje drugih učenika, širenje zlih glasina) dešava se češće nego fizičko maltretiranje (npr. udaranje ili guranje drugih učenika, oduzimanje ili uništavanje stvari koje pripadaju drugim učenicima). Individualne karakteristike, kao što je pol, mogu oblikovati način na koji učenici učestvuju u vršnjačkom nasilju. U Srbiji su u proseku devojčice (19%) izloženije nasilju od dečaka (17%),

a dobijena razlika je statistički značajna (Čaprić i Videnović, 2024; OECD, 2017; OECD, 2019; OECD, 2023; Pavlović i Žunić Pavlović, 2008; Popadić i Plut, 2007; Smith et al., 2010). Škole koje imaju bolju klimu i jaču podršku vršnjaka mogu uspostaviti okruženje u kojem je relacijsko nasilje manje verovatno (Estévez, 2013), čak i ako postoji dosada među učenicima. Međutim, fizičko nasilje učenika je teže kontrolisati, posebno ako se dešava impulsivno i spontano, dakle, kao odgovor na dosadu.

Žrtve zlostavljanja doživljavaju značajan psihološki stres, osećaj izolacije, kao i izražen osećaj tuge, usamljenosti, narušene porodične odnose, pa čak i suicidne misli (Fleming et al., 2010; Özcan, 2024). Biti žrtva nasilja može negativno uticati na akademske uspehe (Nakamoto & Schwartz, 2010) jer emocionalne, bihejvioralne i psihološke posledice viktimizacije utiču na sposobnost učenika da se koncentrišu na akademske zadatke. Vršnjačko nasilje suzbija socijalne i kognitivne resurse neophodne za akademski uspeh, jer žrtve mogu gajiti negativne osećaje prema svom školskom okruženju. Ovo nezadovoljstvo može da se ispolji kao dosada jer se ti učenici mogu osećati isključenim iz društva i manje motivisanim za učešće u školskim aktivnostima (Bokkel et al., 2021; Jang & Shin, 2010). Razumevanje prirode, obima i posledica školskog zlostavljanja od suštinske je važnosti za razvoj efikasnih strategija za prevenciju i intervenciju.

Osećaj i ispoljavanje agresije, kao i trpljenje zlostavljanja u školama, može biti povezan sa dosadom koja je relativno rasprostranjen problem među učenicima savremenog doba. Istraživanja ukazuju da dosada ne samo da smanjuje angažovanost, već može dovesti i do negativnog ponašanja, uključujući agresiju. Ova negativna emocija može pokrenuti impulsivna ponašanja iz dva uočena razloga: prvi uzrok je da učenici, u ispitivanju adolescenti, traže stimulaciju, drugi nalaže da poseduju neudovoljene psihološke potrebe, te njihovo ispunjenje traže u agresivnom ponašanju i rizičnim ili delinkventnim postupcima (Khavula, 2022; Macklem, 2015; Vasileia et al., 2017). Dosada se smatra neprijatnim iskustvom pojedinca koje se javlja usled nemogućnosti da se uključi u zadovoljavajuće aktivnosti, kao i inhibicije želje ili motivacije da se nešto uradi. Takođe, dosada utiče na iskustvo pojedinaca u aktivnostima kojima se bave, budući da su u stanju neadekvatne stimulacije, nedovoljnog uzbuđenja i nedostatka motivacije (Liu et al., 2022).

Mehanizam koji povezuje dosadu sa vršnjačkim nasiljem među adolescentima je višeslojan i uključuje emocionalnu disregulaciju, socijalne dinamike i bihejvioralne odgovore. Dosada je emocija relativno niskog intenziteta i prilično visoke učestalosti, što potvrđuju rezultati empirijskih istraživanja, prema kojima između 20% i 66% adolescenata često doživljava dosadu u školi. Novije studije su pokazale da dosada u školi, ne samo da je posledica nedostatka angažovanja, nego da može predviđati viktimizaciju. Na primer, akademska dosada je identifikovana kao značajan prediktor tradicionalnog i elektronskog vršnjačkog nasilja, sugerišući cikličnu povezanost gde dosada može pogoršati osećaje viktimizacije i obrnuto (Dragoslavić & Bilić, 2021). Ova međuzavisnost sugeriše da su učenici koji doživljavaju dosadu možda podložniji nasilju, potencijalno zbog svoje udaljenosti od socijalnih interakcija koje bi mogle pružiti zaštitne faktore protiv zlostavljanja.

Socijalni kontekst igra važnu ulogu u oblikovanju ponašanja adolescenata, posebno kada su u pitanju njihove reakcije na okruženja sa niskim nivoom stimulacije. Adolescenti

u okruženjima koja ne nude stimulacije skloniji su uključivanju u nasilje. Drugim rečima, visok nivo dosade kod učenika može dovesti do socijalnog povlačenja ili agresivnih reakcija prema vršnjacima (Furlong et al., 2021; Wegner, 2011). Odnosi sa vršnjacima i podrška autonomiji mogu ublažiti negativne efekte dosade, što ukazuje na to da podržavajuće društvene mreže mogu smanjiti verovatnoću nasilja (Ma et al., 2023). S druge strane, neka istraživanja ukazuju na to da nisu svi adolescenti koji osećaju dosadu, uključeni u nasilje. Umesto toga, mogu se povući ili potražiti alternativne, neagresivne načine za izražavanje svojih osećanja, što ističe složenost uticaja dosade na ponašanje (Hurd et al., 2010; You et al., 2014).

Shodno teorijskim polazištima koja razjašnjavaju značaj proučavanja povezanosti između dosade i nasilja u školskom okruženju, ciljevi ovog rada su da se: (1) Utvrdi učestalost dosade i pretrpljenog nasilja kod učenika u školama u Srbiji; (2) Identifikuje način ispoljavanja osećaja dosade i nasilja kod učenika izdvajanjem faktora, odnosno, grupa, na osnovu stavova, emocija i ponašanja koji su međusobno povezani; (3) Analizira stepen korelacije izdvojenih faktora pretrpljenog nasilja i dosade.

Metodologija istraživanja

U ovom radu korišćeni su podaci PISA istraživanja sprovedenog 2022. godine. Najpre je preuzeta baza podataka čiju građu čine javno dostupni podaci iz Upitnika za učenike iz 2022. godine (OECD, 2023), u kojem je učestvovala 81 država, a zatim su izdvojeni podaci za Republiku Srbiju. Upitnik za učenike iz Srbije obuhvatio je 183 škole i 6 413 petnaestogodišnjih učenika. Uzorak svih zemalja koje učestvuju formira se po istim standardima, čime se obezbeđuje reprezentativnost koja omogućava validnost zaključaka (Čaprić i Videnović, 2024; Pavlović-Babić i Baucal, 2013). Upitnik za učenike sadržao je 331 pitanje grupisano u nekoliko tema koje su obuhvatile stavove o njima samima i njihovom životu, porodici, školskom okruženju itd.

U empirijskoj analizi biće korišćene mere deskriptivne statistike radi utvrđivanja prisutnosti i učestalosti pretrpljenog vršnjačkog nasilja kod učenika i osećaja dosade. Zatim će se primenjivati faktorska analiza grupe stavova, emocija i ponašanja sa ciljem izdvajanja faktora koji na osnovu međusobne povezanosti objedinjuju stavove, emocije i ponašanje u cilju identifikacije i izdvajanja načina ispoljavanja dosade i pretrpljenog nasilja kod učenika. Daljom analizom će se primenjivati metode korelacione analize: najpre bivarijatne između svakog od faktora ispoljavanja dosade; između svakog od faktora pretrpljenog nasilja, kao i između faktora ispoljavanja dosade i faktora pretrpljenog nasilja – zbog ispitivanja smera i jačine uzajamnih povezanosti – a zatim i multivarijacione, kanoničke korelacione analize – u cilju utvrđivanja stepena povezanosti faktora dosade sa faktorima pretrpljenog nasilja.

Indikatori

Promenljive u ovom istraživanju su stavovi učenika i obuhvataju sledeće: pretrpljeno vršnjačko nasilje u školi (uključujući verbalno, fizičko i relacijsko) i dosadu

u školi. Iz PISA upitnika odabrano je svih devet tvrdnji koje mere učestalost nasilja četvorostepenom Likertovom skalom (1 – nikad ili skoro nikad; 2 – nekoliko puta godišnje; 3 – nekoliko puta mesečno; 4 – nekoliko puta nedeljno i češće). Te tvrdnje su odgovor na pitanje „*U prethodnih 12 meseci koliko često je prisutan sledeći oblik nasilja?*" i formulisane su sledećim iskazima*: Drugi učenici me ismevaju; Drugi učenici šire o meni zlonamerne glasine; Izostavljaju me iz aktivnosti; Uzimaju i uništavaju mi stvari; Doživljavam pretnje; Guraju me i udaraju*; *Učestvovao sam u tuči u školi; Propuštena škola jer se osećam nebezbedno i Dat novac nekome jer mi je prećeno*. Pouzdanost ovog dela upitnika, iskazana koeficijentom Cronbach's α, ima visoku vrednost (*α* = .835). Primenom faktorske analize, kao i metode analize glavnih osa (engl. *Principal Axis Factoring*) u okviru date faktorske, radi ekstrakcije faktora koji najbolje objašnjavaju zajedničku varijansu, izdvojena su dva faktora u domenu varijable vršnjačkog nasilja. Prvi faktor je fizičko nasilje/pretnje (guranje i udaranje, učestvovao u tuči, doživljavao pretnje), dok drugi faktor obuhvata relacijsko nasilje (širenje zlonamernih tračeva, ismevanje, izostavljanje iz aktivnosti).

Za merenje dosade u školama razvijeni su različiti indikatori i alati, uključujući samoprocenske skale. Samoprocenske mere uobičajeno uključuju *Skalu sklonosti dosadi* i *Anketu o stavovima prema školi*, koji mere subjektivna iskustva učenika u vezi sa dosadom (Martarelli et al., 2023). Shodno ovim skalama procene za indikator dosada izdvojeno je osam tvrdnji, merenih petostepenom Likertovom skalom (1– nimalo se ne slažem; 2 – ne slažem se; 3 – niti se slažem, niti se ne slažem; 4 – slažem se, 5 – veoma se slažem): *Smatram dosadnim učenje novih stvari; Lako budem ometen; Odustajem od domaćeg zadatka ako traje predugo; Često mi lutaju misli; Gubim interesovanje dok traju lekcije; Lako odustajem; Veoma često menjam raspoloženja i Promenljivog sam raspoloženja*. Pored stavova koji se direktno odnose na dosadu, u ovaj indikator su uključeni i stavovi prema odustajanju od zadataka i prema lakom ometanju jer mogu poslužiti kao pouzdani indikatori dosade u obrazovnim okruženjima. Ovi stavovi često odražavaju manjak unutrašnje motivacije za učenjem, učeničkim trudom i samoregulacijom (Sharp et al., 2021). U ovu grupu stavova uključena su i dva stava koja iskazuju česte promene raspoloženja, budući da učenici često doživljavaju mešavinu emocija, uključujući anksioznost i bes, koji mogu pojačati promene raspoloženja kada je dosada prisutna (Parthi & Gupta, 2017). Autori Ankete o akademskoj dosadi (engl. *The Academic Boredom Survey Instrument*, ABSI) ističu kako osobine i stanja dosade mogu predvideti emocionalne reakcije, što sugeriše da su promene raspoloženja kod učenika usko povezane sa njihovim nivoom angažovanja u akademskim aktivnostima (Sharp et al., 2021). Pouzdanost ovog dela upitnika ima zadovoljavajuću vrednost iskazanu koeficijentom Cronbach α (*α* = .771). Daljom primenom faktorske analize izdvojena su dva objedinjujuća faktora: distraktivnost – faktor koji je obuhvatio manifestacije dosade u vidu otežanog održavanja pažnje, lake distrakcije i „lutanja" misli – i odbacivanje zadataka/interesovanja – faktor koji je obuhvatio manifestacije dosade u vidu lakog odustajanja od bilo koje aktivnosti, lakog odustajanja od zadataka koji zahtevaju dužu posvećenost, kao i izricanja eksplicitnog stava da je učenje dosadno i da se gubi interesovanje za sadržaj na časovima.

Za obradu podataka korišćen je softver *IBM SPSS 21.0* (*Statistical Package for the Social Sciences – for Windows*).

Rezultati istraživanja

Deskriptivna analiza

Deskriptivna analiza vršnjačkog nasilja pokazuje da je najveće učešće relacijskog nasilja kroz širenje zlonamernih glasina 21,4%, dok je manje zastupljeno verbalno i fizičko. Svaki peti učenik je doživeo da se o njemu šire zlonamerni tračevi, svaki šesti da ga ismevaju, a svaki dvadeseti da ga guraju i udaraju jednom godišnje ili češće (Tabela 1; Tabela 2). Ovi rezultati su u skladu sa teorijskim postavkama i istraživačkim rezultatima autora o učestalijim oblicima relacijskog i verbalnog u odnosu na fizičko zlostavljanje (Qamar et al., 2023).

Tabela 1
Deskriptivne mere najznačajnijih stavova uključenih u faktor relaciono vršnjačko nasilje

Stav	*N*	*Mean*	*SD*	*CP (%)*
RVN1	6147	1,28	0,68	17,7
RVN2	6153	1,35	0,76	21,4
RVN3	6172	1,23	0.65	14,2

Napomena. RVN1 – Ismevaju me*;* RVN2 – Šire zlonamerne tračeve; RVN3 – Izostavljaju me iz aktivnosti, *CP* – kumuliran procenat onih koji su nasilje doživeli nekoliko puta godišnje i češće.

Tabela 2
Deskriptivne mere najznačajnijih stavova uključenih u faktor fizičko vršnjačko nasilje i pretnje

Stav	*N*	*Mean*	*SD*	*CP (%)*
VN1	6150	1,10	0.44	5,4
VN2	6138	1,13	0.50	8,7
VN3	6152	1,14	0,51	8,7

Napomena. VN1 – Guraju me i udaraju; VN2 – Učestvovao sam u tuči; VN3 – Prete mi, *CP* – kumuliran procenat onih koji su nasilje doživeli nekoliko puta godišnje i češće.

Rezultati koji se odnose na osećaj dosade ukazuju na visok stepen prisutnosti među učenicima u našoj zemlji. Čak 42,2% učenika se slažu da lako budu ometani, svaki četvrti (25,3%) odustaje od domaćeg zadatka ako traje predugo, njih 15,4% (svaki sedmi) se slaže da učenje novih stvari smatra dosadnim (Tabela 3).

Tabela 3
Deskriptivne mere najznačajnijih stavova uključenih u faktore dosade

Stav	*N*	*Mean*	*SD*	*CP (%)*
D1	3830	2,71	0,89	19,6
D2	2895	2,47	1,05	15,4
D3	2985	2,63	1,18	25,3
D4	3048	3,13	1,20	42,2

Napomena. D1 – Često mi misli odlutaju; D2 – Učenje smatram dosadni; D3 – Odustajem ako je domaći predugačak; D4 – Lako me je ometati; *CP* – kumuliran procenat onih koji se delimično slažu ili potpuno slažu sa tvrdnjom.

Korelaciona analiza

Skorovi dobijeni faktorskom analizom za izdvojene faktore dosade i trpljenja vršnjačkog nasilja testirani su na prilagođenost normalnoj raspodeli Kolmogorov–Smirnov (Kolmogorov-Smirnov) testom i rezultati su pokazali da raspodele oba faktora nasilja značajno odstupaju od normalne (faktor fizičko nasilje i pretnje: $KS = 0{,}359$, $p < 0{,}001$; faktor relacijsko nasilje: $KS = 0{,}364$, $p < 0{,}001$), te je za testiranje bivarijatne povezanosti između posmatranih faktora korišćen neparametrijski Spirmanov koeficijent korelacije. Dobijeni rezultati su prikazani u Tabeli 4.

Faktor trpljenja fizičkog nasilja/pretnje pokazuje srednje statistički značajne povezanosti sa faktorima dosade, u nešto jačoj meri sa faktorom distraktivnost (,561) i nešto manjoj meri sa faktorom dosade – odbacivanje zadataka/interesovanja (,439), što ukazuje na to da porast pretrpljenog fizičkog nasilja može dovesti do veće mere izražavanja distraktivnosti učenika, što je u saglasnosti sa ranijim istraživanjima koja potvrđuju ovu povezanost (Bokkel et al., 2021; Dragoslavić & Bilić, 2021). Povezanost između faktora dosade – odbacivanje zadataka/interesovanja sa faktorima pretrpljenog nasilja nije statistički značajna. Uočena je slaba statistički značajna negativna povezanost između faktora vršanjačkog nasilja/pretnji (-,265) i relacijskog nasilja, što ukazuje da su učenici koji su u većoj meri izloženi relacijskom nasilju u manjoj meri izloženi fizičkom nasilju i pretnjama, i obrnuto; dok između pojedinih faktora dosade postoji umerena statistički značajna povezanost (,520) što može da znači da učenici kod kojih je u većoj meri prisutna laka distrakcija jesu većem riziku od odustajanja od školskih zadataka i gubitka interesovanja i obrnuto.

Tabela 4
Spirmanov koeficijent korelacije

		FNP	RN	D1	D2
Fizičko vršnjačko nasilje/pretnje	FNP		-,265**	,561**	,439**
Relacijsko vršnjačko nasilje	RN			,118	,106
Distraktivnost	D1				,520**
Odbacivanje zadataka/interesovanja	D2				

Napomena. **p < .01

Kanonička korelaciona analiza

Kanonička korelaciona analiza između faktora vršnjačkog nasilja (relacijsko nasilja i fizičko nasilje) i faktora dosade (distraktivnost i odbacivanje zadataka i interesovanja) sprovedena je kako bi pokazala stepen i prirodu povezanosti između ovih skupova varijabli. Konkretno, kanonička korelaciona analiza ima za cilj da utvrdi koliko se varijacija u faktorima dosade mogu objasniti varijacijama u faktorima pretrpljenog vršnjačkog nasilja, i obrnuto. Potrebno je imati u vidu da kanonička korelaciona analiza identifikuje linearne kombinacije unutar svakog skupa varijabli (koje se nazivaju kanoničke varijable), tako da je korelacija između tih kombinacija maksimizovana, odnosno, da ova analiza meri najjaču moguću vezu između dva skupa varijabli. U ovom slučaju se radi o vezi između skupa varijabli pretrpljeno vršnjačko nasilje i skupa varijabli dosada (Kovačić, 1998). Dobijen je jedan visok statistički značajan koeficijent kanoničke korelacije 0,749 (*Wilks* = 0,394; *p* = 0,002) koji ukazuje na prisustvo visokog nivoa pozitivne povezanosti posmatranih setova varijabli. Rezultati su prikazani u Tabeli 5.

Tabela 5
Koeficijenti kanoničke korelacije

	Eigenvalue	*Rho*	*Wilks*	*Sig of F*
1	1,280	0,749	0,394	0,002

Napomena. Eigenvalue – karakterističan koren; *Rho* – koeficijent kanoničke korelacije; *Wilks* – Vilksova lambada

U Tabeli 6 su prikazani standardizovani kanonički koeficijenti i koeficijenti korelacije faktora nasilja na kanoničku varijablu pretrpljeno nasilje. Možemo uočiti da veći relativan uticaj na kanoničku varijablu pretrpljeno nasilje ima faktor fizičko nasilje/pretnje u odnosu na relacijsko nasilje, koje ima veoma slab uticaj na kanoničku varijablu, čak i negativan.

Tabela 6
Kanonički koeficijenti i koeficijenti korelacije kanoničke varijable vršnjačko nasilje

Faktor	Kanonički koeficijenti	Koeficijenti korelacije
Fizičko vršnjačko nasilje/ pretnje	1,025	,985
Relacijsko vršnjačko nasilje	-,176	,054

Tabela 7 prikazuje gore pomenute kanoničke koeficijente faktora dosade na izvedenu kanoničku varijablu. Uočava se da u formiranju kanoničke varijable dosada značajno veći uticaj ima faktor – odbacivanje zadataka/interesovanja sa značajno većim koeficijentima u odnosu na distraktivnost.

Tabela 7
Kanonički koeficijenti i koeficijenti korelacije kanoničke varijable dosada

Faktor	Kanonički koeficijenti	Koeficijenti korelacije
Distraktivnost	,078	,562
Odbacivanje zadataka i interesovanja	,959	,998

Diskusija

Osnovni cilj ovog istraživanja je bio da se ispita povezanost osećaja dosade i pretrpljenog vršnjačkog nasilja kod učenika, učesnika PISA 2022 istraživanja u školama u Republici Srbiji, zajedno sa utvrđivanjem učestalosti dosade i pretrpljenog nasilja kod učenika, kao i identifikovanjem načina ispoljavanja osećaja dosade i nasilja. Na osnovu samoprocena učenika, nalazi su pokazali da postoji visok stepen prisutnosti dosade kod učenika. Utvrđena je pozitivna veza između pretrpljenog fizičkog nasilja i pretnji sa osećajem dosade (ispoljene odustajanjem i gubljenjem interesovanja za sadržajem tokom samih časova). Pretrpljeno relacijsko vršnjačko nasilje nije povezano sa osećajem dosade.

Ovi rezultati su u skladu sa istraživanjima koja pokazuju da učenici koji su izloženi vršnjačkom nasilju često pokazuju smanjeno interesovanje za učenje, jer emocionalni uticaj nasilja ometa njihovu sposobnost da se fokusiraju i angažuju u školskim aktivnostima. Žrtve nasilja često doživljavaju osećanja nesigurnosti, niskog samopoštovanja i odbačenosti, što može doprineti odsustvu interesovanja za akademske aktivnosti. Ove emocionalne borbe mogu stvoriti sveobuhvatan osećaj dosade, jer žrtve mogu smatrati izazovnim angažovanje u školskom radu kada su zaokupljene negativnim osećanjima o sebi i svom socijalnom okruženju. Pritom, studije su pokazale da vršnjačko nasilje može dovesti do nedostatka motivacije za angažovanjima u školi, jer žrtve mogu smatrati da su njihovi napori uzaludni u okruženju u kojem se osećaju nebezbedno ili nedovoljno vrednovani (Cornell et al., 2013; Hateriah & Sarkiah, 2023; Siyahhan et al., 2012).

Pored navedenog, socijalne dinamike u vezi sa fizičkim nasiljem mogu doprineti kulturi straha i izolacije. Žrtve mogu osećati da ne mogu da traže pomoć od vršnjaka ili nastavnika zbog stigme povezane sa tim da su žrtve nasilja, što dovodi do pojačanih osećanja usamljenosti i dosade. Ovaj tip izolacije može biti posebno izražen u slučajevima fizičkog nasilja, gde žrtva može biti ismevana od strane svojih vršnjaka, što dodatno smanjuje njihovu motivaciju za učešće u školskim aktivnostima (Pontes et al., 2018; Yazdanmehr et al., 2021). S druge strane, žrtve relacionog nasilja mogu i dalje upravljati socijalnim interakcijama, održavati socijalne veze, iako na složeniji način, što im može pružiti određeni nivo angažovanja u školskom životu (Bilgili et al., 2017).

U analizi faktora osećaja dosade i povezanosti sa pretrpljenim nasiljem uočava se nešto značajnija korelacija faktora odbacivanje zadataka/interesovanja nego faktora distraktivnosti, mada su oba faktora značajno povezana sa fizičkim nasiljem i pretnjama, direktnim srednjim intenzitetom. Takođe, na kanoničku varijablu dosada veći je uticaj prvog faktora. Imajući u vidu tvrdnje koje su imale najveće uticaje na izdvajanje faktora distraktivnosti (*Lako budem ometen*; *Misli mi često odlutaju*; *Često menjam raspoloženja*) i tvrdnje sa najvećim uticajem na faktor odbacivanje zadataka (*Smatram učenje novih stvari dosadnim*; *Odustajem od zadataka ako traju predugo*; *Lako odustajem*), kao i gore navedene povezanosti dosade sa trpljenjem nasilja, ističe se potreba za razvijanjem mehanizama u obrazovnom sistemu i školskim politikama koje bi identifikovale učenike sa većim stepenom prisutnosti ovakvih manifestacija dosade. Potrebno je razviti i instrumente rada sa datim mehanizmima u cilju blagovremenog prepoznavanja eventualnog trpljenja nasilja kod njih i pružanja adekvatnih mera zaštite i podrške.

Programi koji se bave prevencijom nasilja i dosadom kroz obogaćen nastavni plan i društveno angažovanje mogu podstaći interpersonalnu bliskost, smanjujući rizik od vršnjačkog nasilja (UNICEF Srbija, 2017; Vasileia et al., 2017). Ograničenja rada su u nemogućnosti istraživanja prisustva dosade pouzdanijim skalama samoprocene, jer su korišćeni sekundarni izvori podataka, iako su odabrane stavke na skali relativno konzistentne i mere isti konstrukt. Takođe, ograničenje ovog istraživanja je nedostatak nekih od mogućih moderatorskih varijabli, kao što je pol, u samoj analizi, iako bi date varijable mogle dodatno rasvetliti složen odnos između vršnjačkog nasilja i dosade. U budućim istraživanjima bilo bi važno uključiti ispitivanje uticaja pola kako bi se bolje razumeli potencijalni rodni obrasci u ovoj povezanosti. Takvi rezultati mogli bi pružiti snažnu osnovu za kreiranje efikasnih intervencija koje bi bile prilagođene različitim grupama učenika i njihovim specifičnim potrebama.

Zaključak

U skladu sa drugim istraživanjima (Dragoslavić & Bilić, 2021; Sullivan et al., 2019; Vasileia et al., 2017) i u ovom istraživanju rezultati su pokazali povezanost dosade sa pretrpljenim vršnjačkim nasiljem u školama, kao i značaj identifikacije učenika sa većim stepenom ispoljavanja dosade u školskom okruženju u cilju ranog otkrivanja trpljenja nasilja. Škole bi ranim prepoznavanjem žrtava mogle da pruže neophodne resurse i sisteme podrške koji će im pomoći u cilju zaštite od daljeg nasilja, kao i da se nose sa svojim iskustvima, čime se smanjuje rizik od dugotrajnih psiholoških posledica.

U Srbiji se mogu identifikovati mnoge slabosti u sistemu prevencije i zaštite dece od nasilja, a jedna od njih je da je odgovor na potrebe i zaštitu dece u školama često razdeljen između različitih timova — kao što su Tim za zaštitu od diskriminacije, nasilja, zlostavljanja i zanemarivanja, Tim za inkluzivno obrazovanje i Tim za sprečavanje napuštanja škole — iako se ovaj rad može odnositi na istu decu. Pored toga, ne postoje sistematski preventivni programi za edukaciju i jačanje roditeljskih kompetencija, programi pripreme za roditeljstvo ili drugi programi iz grupe usluga podrške porodici. To su uglavnom mali ili pilot-projekti (UNICEF Srbija, 2017). Roditelji igraju ključnu ulogu

u prepoznavanju znakova nasilja. Istraživanja pokazuju da će deca verovatnije prijaviti slučajeve nasilja roditeljima nego školskim službenicima. Škole mogu osposobiti roditelje da prepoznaju kada je njihovo dete uključeno u nasilje, bilo kao žrtva ili kao nasilnik, putem osnaživanja roditelja znanjem i resursima. Efektivna partnerstva između roditelja i nastavnika mogu značajno poboljšati odgovor na slučajeve nasilja. Kada roditelji i nastavnici sarađuju, mogu stvoriti koherentniji pristup u suočavanju sa nasiljem (Jordan & Austin, 2012; Panda et al., 2020).

Podsticanje podržavajuće školske kulture koja ohrabruje otvorenu komunikaciju može omogućiti učenicima da prijave incidente nasilja bez straha od odmazde. Programi protiv nasilja, poput finskog "KiVa", pokazali su značajnu efikasnost u smanjenju nasilja i viktimizacije među učenicima, kao i uspeh u smanjenju incidenata nasilja i poboljšanju opšte školske klime, ističući važnost sistematskih pristupa prevenciji nasilja (Kärnä et al., 2011; Turner et al., 2014; Valle et al., 2018).

Škole bi trebalo da koriste višestruki pristup u implementiranju sveobuhvatnih programa protiv nasilja koji uključuju obrazovanje svih učesnika školskog sistema o nasilju, njegovim efektima i strategijama za prevenciju i intervenciju. Obuka za nastavnike i osoblje je od suštinskog značaja kako bi se osiguralo da mogu da prepoznaju znakove nasilja i adekvatno reaguju. Škole bi trebalo i da koriste alate za procenu kako bi efikasno pratili ponašanja nasilnika i stope trpljenja nasilja, čemu kao primer može da posluži razvijena verzija Kalifornijske skale trpljenja nasilja (engl. California Bullying Victimization Scale) koja pruža strukturisan način za procenu učestalosti i prirode nasilja unutar škole (Felix et al., 2011).

Stvaranje sistema podrške među vršnjacima i promocija pozitivnih odnosa među učenicima mogu pomoći u ublažavanju efekata nasilja i podsticanju otpornosti među žrtvama. Intervencije koje uključuju podršku vršnjaka takođe su ključne za minimiziranje posledica nasilja. Obuka vršnjaka da prepoznaju ponašanja koja ukazuju na nasilje i pruže podršku žrtvama može značajno izmeniti dinamiku situacija u kojima se nasilje dešava. Istraživanja su pokazala da intervencije vršnjaka mogu dovesti do smanjenja nasilničkih ponašanja, ohrabrujući posmatrače da reaguju i pruže podršku žrtvama. Ovaj pristup ne samo da osnažuje vršnjake da intervenišu, nego i podstiče osećaj zajedništva i pripadnosti među učenicima, što može ublažiti osećaj izolacije koji žrtve često osećaju (Du et al., 2018; Fanti & Kimonis, 2013; Kendrick et al., 2012).

Da bi se efikasno smanjila dosada među učenicima u školama, mogu se primeniti različite metode kao što su kreativni pristupi učenju (interaktivne aktivnosti i inovativni dizajni lekcija; aktivnosti za „razbijanje leda") za koje istraživanja pokazuju da su učenici izloženi kreativnim nastavnim modelima izveštavali o nižim nivoima dosade u poređenju sa onima u tradicionalnim okruženjima (Radeljić et al., 2020). Upotreba VR (virtualna realnost) učionica pojavila se kao nov način za borbu protiv dosade, posebno u kontekstu onlajn učenja. Ova metoda odgovara preferencijama učenika za interaktivne doživljaje, čime se povećava motivacija i smanjuje neangažovanost (Chansaengsee, 2023). Iako ove metode pokazuju ohrabrujuće rezultate, izazovi kao što su obuka nastavnika i dostupnost resursa mogu otežati njihovu primenu.

Povezanost dosade i vršnjačkog nasilja jeste složena i višeslojna, i obuhvata kvalitet odnosa sa vršnjacima i nastavnicima, emocionalne reakcije žrtava i šire školsko okruženje. Buduća istraživanja treba da nastave da istražuju ove dinamike, fokusirajući se na strategije intervencije koje efikasno mogu smanjiti i dosadu i viktimizaciju u obrazovnim okruženjima.

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Analysis of the Relationship Between Peer Bullying and Boredom in Schools in Serbia

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Abstract *This paper examines the relationship between forms of experiencing peer bullying and the presence of boredom in students in the school environment in the Republic of Serbia, based on data obtained from the PISA 2022 survey. The consequences of experienced peer bullying are highly negative and long-lasting, affecting all aspects of students' lives, including academic, psychological, health, and social domains. Therefore, it is crucial to explore the factors associated with bullying in order to mitigate and prevent all forms of aggression in schools, including peer violence. Recent research has shown a positive association between the feeling of boredom and peer bullying. This study utilizes data from the PISA survey conducted in the Republic of Serbia, with a sample of 6,413 students from 181 schools. Two groups of statements were selected from the student questionnaire: one measuring the frequency of experiencing bullying and the other assessing the feeling of boredom. Through factor analysis, two factors of bullying were identified: relational bullying and physical bullying combined with verbal abuse. Similarly, two factors related to boredom were identified: distraction and disengagement from tasks and interests. Further analysis revealed a significant positive correlation between these factors, particularly between boredom and physical/verbal bullying. These findings suggest that the educational system should recognize students exhibiting higher levels of boredom, as they may be at an increased risk of peer victimization. Additionally, it is advisable apply various methods and approaches that have proven effective in reducing boredom and victimization among students and integrate them into educational strategies.*

Keywords: *peer bullying, boredom in school, victims of peer bullying, distraction, disengagement from tasks and interests.*

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Naslovi i podnaslovi odeljaka. Naslovi i podnaslovi odeljaka ne označavaju se numerički, potrebno ih je jasno i precizno formulisati i formatirati prema uputstvu prikazanom u Tabeli 1.

Tabela 1

Način formatiranja naslova i podnaslova odeljaka prema nivoima

Nivo	Način formatiranja
1	**Centrirano, bold, font 12**
2	**Levo poravnanje, bold, font 12**
3	***Levo poravnanje, bold i kurziv, font 12***
4	**Uvučeno, bold, font 12, tačka na kraju. (tekst u nastavku)**
5	***Uvučeno, bold i kurziv, font 12, tačka na kraju.*** **(tekst u nastavku)**

Napomena. Primeri formata dati su samo za naslove i podnaslove odeljaka i ne odnose se na naslov rada.

Tabele i grafikoni. Svaka tabela, odnosno grafikon označava se odgovarajućim brojem. Jasno i precizno formulisan naslov tabele ili grafikona daje se u novom redu, u kurzivu. Naslov tabela ili grafikona treba da bude pozicioniran iznad tabele ili grafikona (videti Tabelu 1 ovog uputstva). Sve skraćenice navedene u tabelama i grafikonima treba da budu objašnjene. U objašnjenju (legendi), ispod tabele ili grafikona reč napomena piše se kurzivom sa tačkom na kraju reči (*Napomena*. ili *Note*. u zavisnosti od jezika rada, videti primer u Tabeli 1). Tabele ne treba da sadrže vertikalne linije. Horizontalne linije treba koristiti samo između zaglavlja tabele i prikazanih podataka (kao na primeru u Tabeli 1) i na dnu tabele. Izuzetno, horizontalne linije dozvoljene su i u okviru samog zaglavlja ukoliko to doprinosi preglednosti tabele.

Tabele i grafikone priložiti u Microsoft Word formatu, kreirati i dostaviti u programu koji omogućava njihovo dodatno uređivanje. Informacije na grafikonima se ne ističu bojama, već šrafiranjem. Digitalne fotografije ili slike dostavljaju se u rezoluciji najmanje 300 dpi, grayscale color mode.

Oznake statističkih testova i mera. Sve oznake statističkih testova i mera pisati kurzivom u celom tekstu rada, uključujući i tabele (*M, SD, F, t, p*).

Fusnote i skraćenice. Fusnote i skraćenice trebalo bi izbegavati.

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Emmer, E. T., & Stough, L. M. (2001). Classroom management: A critical part of educational psychology, with implications for teacher education. *Educational Psychology*, *36*(2), 103-112. https://doi.org/10.1207/S15326985EP3602_5

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Cruse, D. A. (2002). Hyponymy and its varieties. In R. Green, C. A. Bean, & S. H. Myaeng (Eds.), *The semantics of relationships: An interdisciplinary perspective* (pp. 3-22). Kluwer Academic Publishers.

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