

POVEZANOST OBRAZOVNIH KVALIFIKACIJA I SAMOPERCIPIRANE SAMOEFIKASNOSTI UČITELJA U RADU S UČENICIMA S TEŠKOĆAMA

RELATIONSHIP BETWEEN EDUCATIONAL QUALIFICATIONS AND SELF-PERCEIVED SELF- EFFICACY OF TEACHERS WORKING WITH STUDENTS WITH SPECIAL EDUCATIONAL NEEDS

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Primljeno/ Received: 27.08.2021.

Prihvaćeno/ Accepted: 10.02.2022.

Izvorni znanstveni rad/ Original research article

UDK: 37.091.321:376-057.874(497.571)

37.04:376-057.874(497.571)

doi: <https://doi.org/10.31299/hrii.58.1.3>

Sažetak: U radu se istražuje povezanost nekih čimbenika povezanih s educiranošću učitelja za poučavanje učenika s teškoćama i učiteljske samoefikasnosti za inkluzivno poučavanje. Cilj je istraživanja definirati latentnu strukturu obilježja učitelja povezanih s njihovom educiranosti za poučavanje učenika s teškoćama tijekom inicijalnog obrazovanja i kroz programe stručnog usavršavanja nakon studija. Ispitivanjem je obuhvaćeno 177 učitelja u Istarskoj županiji. Kao mjerni instrument korištena je subskala samoefikasnosti za inkluzivno poučavanje koja je sastavni dio Upitnika samoefikasnosti za inkluzivnu praksu. U obradi podataka korištene su jednosmjerna i multivarijatna analiza varijance i diskriminacijska analiza. Rezultati ukazuju na postojanje statistički značajnih razlika u samopercipiranoj samoefikasnosti za inkluzivno poučavanje između skupina učitelja s obzirom na razlike u njihovu inicijalnom obrazovanju i sudjelovanju u programima stručnog usavršavanja. Istraživanje je pokazalo da učitelji koji su se educirali za rad s učenicima s teškoćama kroz tri i više kolegija pokazuju najvišu razinu samoefikasnosti za inkluzivnu praksu. Također učitelji koji su pohađali 20 i više sati programa stručnog usavršavanja usmjerenog na rad s učenicima s teškoćama pokazali su višu razinu samoefikasnosti za inkluzivnu praksu u usporedbi s učiteljima koji su pohađali do 20 sati takvog usavršavanja ili ga uopće nisu pohađali. Diskriminacijska analiza pokazala je postojanje dviju diskriminacijskih funkcija koje značajno razlikuju ispitanike s obzirom na

Abstract: This paper investigates the relationship between factors related to the educational qualifications of teachers who work with students with special educational needs and their self-perceived self-efficacy. The aim of this study was to define the latent structure of the characteristics associated with the educational background/qualifications of teachers who work with students with special educational needs based both on their initial education, as well as in-service training programs. We conducted a survey of 177 teachers from Istria County in Croatia. The self-efficacy subscale for inclusive teaching, which is an integral part of the Self-Efficacy for Inclusive Practice Questionnaire, was used as a measuring instrument. Data were analysed using one-way and multivariate analysis of variance and discriminant analyses. Our results indicate statistically significant differences between groups of teachers in their self-perceived self-efficacy for inclusive teaching based on differences in their initial education and participation in in-service training programs. These findings reveal that teachers who attended three or more courses aimed at working with students with special educational needs showed the highest level of self-efficacy for inclusive practices. Similarly, teachers who attended 20 or more hours of in-service training programs aimed at working with students with special educational needs had higher levels of self-efficacy for inclusive practices than those who attended up to 20 hours of such training programs or no training at all. Based on the discriminant analyses, we found two discriminant functions that significantly differentiate

broj kolegija povezanih s inkluzivnim obrazovanjem koje su pohađali tijekom inicijalnog obrazovanja te broj sati stručnog usavršavanja za poučavanje učenika s teškoćama na kojem su sudjelovali nakon studija.

Ključne riječi: učenici s teškoćama, učiteljska samoeфикаsnost, inicijalno obrazovanje učitelja, stručno usavršavanje učitelja, inkluzivno obrazovanje

UVOD

Tijekom posljednjih tridesetak godina sve se veća pažnja posvećuje ulozi samoeфикаsnosti u uvjetima odgoja i obrazovanja i to trojako: kroz istraživanja veza između uvjerenja u ефикаsnost i izbora učiteljskog, to jest nastavničkog zanimanja, kroz istraživanje odnosa između samoeфикаsnosti učitelja i nastavnika i njihove učiteljske prakse te kroz istraživanje samoeфикаsnosti i učeničkog postignuća. Albert Bandura (1997) u svom djelu *Self-efficacy: Toward a Unifying Theory of Behavioral Change* učiteljsku samoeфикаsnost definira kao vjerovanje u vlastite sposobnosti planiranja, organiziranja i izvršavanja aktivnosti povezanih s obrazovnim zadacima.

Temeljena na socijalno-kognitivnoj teoriji učiteljska samoeфикаsnost može se konceptualizirati kao uvjerenje učitelja u vlastitu sposobnost planiranja, organiziranja i izvršenja aktivnosti koje su potrebne za ostvarenje odgojno-obrazovnih ciljeva (Skaalvik i Skaalvik, 2010). U posljednje vrijeme sve se više pozornosti usmjerava na izučavanje samoeфикаsnosti učitelja u radu s učenicima s teškoćama. Istraživanja pokazuju kako upravo učitelji imaju kritičnu ulogu u implementaciji inkluzivnog obrazovanja (Forlin i sur., 2010; Stančić, 1995; prema Ivančić 2012). Strategija školstva usmjerena je prema razvoju inkluzivne škole (Fulgosi-Masnjak, Igrić i Lisak, 2013), a svaki korak prema inkluziji zahtjeva od učitelja dobro poznavanje samoga sebe, upućenost u niz suvremenih nastavnih strategija poučavanja, poznavanje stilova učenja, posjedovanje i stalni razvoj vlastitih sposobnosti i vještinu da ih primijeni kako bi osigurao učinkovit pristup, sudjelovanje i učenje za sve učenike (Stančić i sur., 2014).

Na samoeфикаsnost učitelja snažno utječu individualni čimbenici poput vrijednosti, motivacije,

respondents in terms of the number of courses related to teaching students with special educational needs that they attended during their initial education, as well as the number of hours of in-service training programs attended.

Keywords: students with special educational needs, teacher self-efficacy, initial teacher education, in-service teacher training, inclusive education

INTRODUCTION

Over the last thirty years, significant attention has been paid to the role of self-efficacy in education through research on the relationship between efficacy beliefs and the choice of the teaching profession, the relationship between teacher self-efficacy and their teaching practice, as well as self-efficacy and student achievement. In his work, “Self-efficacy: Toward a Unifying Theory of Behavioural Change”, Albert Bandura (1997) defined teacher self-efficacy as a belief in one’s own ability to plan, organise, and execute activities related to educational tasks.

Research in the field of socio-cognitive theory corroborates the above-mentioned definition of teacher self-efficacy (Skaalvik and Skaalvik, 2010). Recent research has shifted focus to exploring self-efficacy among teachers who work with students with special educational needs. Research shows that teachers have a critical role in the implementation of inclusive education (Forlin et al., 2010; Stančić, 1995, according to Ivančić 2012). Education strategies are focussing on the development of more inclusive schools (Fulgosi-Masnjak, Igrić and Lisak, 2013). Each step towards inclusion requires teachers to have adequate knowledge about themselves, numerous modern teaching strategies, and an excellent awareness of different learning styles. Furthermore, teachers must possess and constantly develop their own abilities and skills in order to ensure effective access, participation, and learning across all students (Stančić et al., 2014).

Teacher self-efficacy is strongly influenced by individual factors such as values, motivation, confidence or ability to meet challenges as well as factors related to the environment (Valenčić Štemberger and Lepičnik Vodopivec, 2016). Previous research has suggested that a teacher’s belief about self-efficacy plays a key role in the success of in-

samopouzdanja ili spremnosti za suočavanje s izazovima, ali i čimbenici povezani s okruženjem (Valenčić Štemberger i Lepičnik Vodopivec, 2016). Većina dostupnih istraživanja ukazuje na to da učiteljska uvjerenja o samoefikasnosti imaju ključnu ulogu u uspješnom inkluzivnom obrazovanju (Sharma, Loreman i Forlin, 2012). Procijenjena samoefikasnost učitelja pokazala se kao čimbenik povezan s boljom organiziranošću i sposobnošću planiranja, entuzijazmom, pravičnošću i jasnoćom poučavanja (Allinder, 1994). Samoefikasni učitelji pokazali su sklonost isprobavanju različitih nastavnih materijala i pristupa poučavanju te implementaciji progresivnih i inovativnih strategija, kako bi pronašli bolje načine poučavanja svojih učenika. Konkretnije, efikasni učitelji imaju tendenciju pokazivanja veće osjetljivosti, predanosti, otpornosti i ustrajnosti u inkluzivnoj učionici pokazujući inovativnost u implementaciji strategija kojima će poboljšati usvajanje ishoda kod učenika (Mohamed Emam i Al-Mahdy, 2019).

Filozofija inkluzije ishodište je razvoja procesa edukacijske inkluzije, definirane kroz prisutnost učenika s teškoćama u istim školama u kojima su i njihovi vršnjaci bez teškoća, prirodnu zastupljenost učenika s teškoćama u pojedinim školama, odsutnost odnosa odbacivanja te dobro formirane skupine i razredne zajednice bez posebnih razreda za učenike s teškoćama (Sailor, 1991; prema Bratković, 2004). Koncept inkluzivnog obrazovanja pretpostavlja da svi učenici imaju mogućnost zajedničkog učenja, bez obzira na međusobne različitosti. Ovaj je koncept usmjeren na potrebe svih učenika, s posebnim naglaskom na učenike kojima prijete marginalizacija, diskriminacija ili isključenje iz sustava odgoja i obrazovanja (Livazović, Alispahić i Terović, 2015).

Prema definiciji OECD-a (2005) učenici s teškoćama heterogena su skupina učenika podijeljena na tripartitnu taksonomiju temeljem uočenih uzroka njihova obrazovnog neuspjeha: a) učenici s teškoćama u razvoju (engl. *disabilities*) – uključuje učenike s teškoćama ili oštećenjima koja se u medicinskom smislu smatraju organskim poremećajima koji se mogu pripisati organskim patologijama; b) učenici s teškoćama u učenju,

clusive education (Sharma, Loreman, & Forlin, 2012). Teachers self-efficacy has been reported as a factor associated with better organisation and planning ability, enthusiasm, fairness, and clarity while teaching (Allinder, 1994). Self-effective teachers have shown a tendency to experiment with different teaching materials and approaches, as well as to implement progressive and innovative strategies in order to find better ways to teach their students. More specifically, effective teachers tend to show greater sensitivity, commitment, resilience, and perseverance in an inclusive classroom, thus demonstrating innovation in the implementation of strategies to improve student adoption of outcomes (Mohamed Emam and Al-Mahdy, 2019).

The philosophy of inclusion is the starting point for the development of educational inclusion, and it is accomplished through the presence of students with special educational needs in the same schools as their peers, the natural representation of students with special educational needs in some schools, as well as the absence of rejection, age groups, and class communities without special classes (Sailor, 1991; according to Bratković, 2004). The concept of inclusive education assumes that all students can learn together, regardless of their differences. This concept is aimed at addressing the needs of all students, with a special emphasis on students who are at risk of being marginalised, discriminated against, or excluded from the education system (Livazović, Alispahić & Terović, 2015).

According to the Organisation for Economic Co-operation and Development (OECD; 2005), students with special educational needs are a heterogeneous group that can be further subdivided into a tripartite taxonomy based on perceived causes of educational failure: a) Disabilities – includes students with disabilities or impairments that are viewed in medical terms as organic disorders attributable to organic pathologies. Their educational needs are considered to arise primarily from problems attributable to these disabilities; b) Difficulties – includes students with behavioural or emotional disorders, or specific difficulties associated with learning; c) Disadvantages – includes students with disadvantages arising from socio-economic, cultural, and/or linguistic factors.

problemima u ponašanju i emocionalnim problemima (engl. *difficulties*); c) učenici s teškoćama uvjetovanim odgojnim, socijalnim, ekonomskim, kulturnim i/ili jezičnim čimbenicima (engl. *disadvantages*).

Kao značajan čimbenik koji pozitivno utječe na učiteljsku samoefikasnost u inkluzivnim uvjetima možemo, očekivano, istaknuti i formalno stečena znanja i stručna usavršavanja o tome kako poučavati u inkluzivnoj učionici (Sharma, Shaikat i Furlonger, 2014; Song, 2016; Fazlagić i Kolić, 2018; Kuyini, Desai i Sharma, 2018; Lopes i Oliveira, 2021). Učitelji koji imaju kompetencije za korištenje efektivnih strategija poučavanja, suradnju s drugima i upravljanje ometajućim ponašanjem biti će efikasniji u poučavanju u inkluzivnoj učionici (Sharma i sur., 2012).

Malo je istraživanja koja su proučavala povezanost samoefikasnosti učitelja i njihove uključenosti u programe stručnog usavršavanja, no svi nalazi govore u prilog pretpostavci da će permanentno usavršavanje i profesionalni razvoj imati pozitivan utjecaj na opaženu samoefikasnost učitelja (Rimm-Kaufmann i Sawyer, 2004; Ross i Bruce, 2007; Powell-Moman i Brown-Schild, 2011). Izrazi „cjeloživotno učenje“ i „stručno usavršavanje“ koriste se naizmjenično kako bi opisali profesionalni razvoj učitelja, kao i pokušaje kontinuiranog poboljšanja ponude obrazovnih usluga. U posljednje se vrijeme najčešće koristi izraz „trajni profesionalni razvoj“ (Tzivinikou, 2015). Međutim u studiji OECD-a tvrdi se da je koncept „profesionalnog razvoja“ širi od koncepta „usavršavanja“ i prikladniji za izražavanje novih stavova koji se tiču obrazovnih ustanova kao „organizacija koje uče“ (OECD, 1998; prema Tzivinikou, 2015). Sudjelovanje u stručnom usavršavanju koje obrađuje teme poput osobitosti učenika s teškoćama, inkluziju, prilagodbe kurikulumu, upravljanje ponašanjem i asistivne tehnologije, pokazalo se, povezano je s višim rezultatima samoefikasnosti za percipiranu sposobnost učitelja za rad s učenicima s teškoćama (Brownell i Pajares, 1999; Buell i sur., 1999; prema Leyser, Zeiger i Romi, 2011). Što se tiče studenata učiteljskih fakulteta, često je njihov jedini doticaj s inkluzivnim obrazovanjem pohađanje obveznih

Formally acquired knowledge and in-service training on how to teach in an inclusive classroom is considered to be a significant factor that positively affects the self-efficacy of teachers working with students with special educational needs (Sharma, Shaikat and Furlonger, 2014; Song, 2016; Fazlagić and Kolić, 2018; Kuyini, Desai and Sharma, 2018; Lopes and Oliveira, 2021). Teachers who have the competency to use effective teaching strategies, collaborate with others, and manage disruptive behaviour will be more effective in teaching in an inclusive classroom (Sharma et al., 2012).

There are few studies that have investigated the relationship between teacher self-efficacy and their involvement in in-service training programs, and all findings support the assumption that in-service training can have a positive impact on perceived teacher self-efficacy (Rimm-Kaufmann and Sawyer, 2004; Ross and Bruce, 2007; Powell-Moman and Brown-Schild, 2011). The terms “lifelong learning” and “in-service training” are used interchangeably when referring to the professional development of teachers, as well as their attempt to continuously improve the educational services offered. Recently, “continuing professional development” has been the most widely used term for on-going education and training for these professions (Tzivinikou, 2015). However, it is argued that the concept of “professional development” is broader than the concept of “training” and more suitable for expressing new attitudes concerning educational institutions as “learning organisations” (OECD, 1998; according to Tzivinikou, 2015). Participation in in-service training that addresses topics such as characteristics of students with disabilities, inclusion, curriculum adaptation, behavioural management, and assistive technology has been associated with higher self-efficacy scores associated with the perceived ability of teachers to work with students with special educational needs (Brownell and Pajares, 1999; Buell et al., 1999; according to Leyser, Zeiger, & Roma, 2011).

As far as future teachers are concerned, often their only contact with the education of students with special educational needs is participation in compulsory courses that enable the acquisition of competencies in this field. Competencies specific to the education of students with special educational needs are “knowledge of the specifics of certain developmental

kolegija koji omogućuju stjecanje kompetencija iz ovog područja, a unatoč činjenici da se sve više ulaže u dizajn programa inicijalnog obrazovanja koji će osigurati stjecanje navedenih kompetencija, postoji raširena zabrinutost u vezi s tim jesu li budući učitelji adekvatno osposobljeni za rad u inkluzivnom obrazovanju (Lancaster i Bain, 2007).

Specifične kompetencije za rad u obrazovanju učenika s teškoćama uključuju „poznavanje specifičnosti pojedinih teškoća u razvoju i drugih teškoća socijalne integracije; sposobnost identifikacije teškoća u razvoju i drugih teškoća socijalne integracije; poznavanje didaktičko-metodičkog pristupa i planiranja prilagođenog kurikulumu; poznavanje dostupnih didaktičko-metodičkih metoda, sredstava i pomagala (uključujući informacijsku tehnologiju); poznavanje savjetodavnih tehnika rada; praktično iskustvo u odgoju i obrazovanju djece s pojedinim teškoćama socijalne integracije, spremnost na timski rad, suradnju i cjeloživotno obrazovanje“ (Bouillet 2010: 269).

Učitelji koji navode da su tijekom studija pohađali obvezne kolegije za stjecanje kompetencija za rad u inkluzivnoj nastavi pokazuju pozitivnije stavove prema inkluzivnom obrazovanju od učitelja koji takve kolegije nisu pohađali (Skočić Mihić, Gabrić i Bošković, 2016). Jednako tako važnost inicijalnog obrazovanja usmjerenog prema stjecanju kompetencija za rad s učenicima s teškoćama, kako za razvoj pozitivnih stavova prema odgojno-obrazovnom uključivanju tako i za samoefikasnost u inkluzivnom poučavanju, pokazala su i druga istraživanja (Loreman i sur., 2005; Savolainen i sur., 2011; Sharma i sur., 2014).

CILJ I ISTRAŽIVAČKA PITANJA

S obzirom na to da se učiteljska samoefikasnost navodi u literaturi kao jedan od najznačajnijih indikatora uspješnosti implementacije inkluzivnog obrazovanja (Sharma i sur., 2012), čini se korisnim utvrditi povezanost nekih čimbenika povezanih s educiranošću učitelja za rad s učenicima s teškoćama i učiteljske samoefikasnosti za inkluzivno poučavanje. Cilj je ovog istraživanja definirati latentnu strukturu obilježja učitelja povezanih s njihovom educiranošću za rad s učeni-

difficulties and other difficulties of social integration, the ability to identify developmental difficulties and other difficulties of social integration, knowledge of the didactic-methodological approach and customised curriculum planning, knowledge of available didactic and methodological methods, tools and aids (including information technology), knowledge of counselling techniques, practical experience in raising children with certain difficulties of social integration, willingness to work in teams, cooperation, and lifelong learning” (Bouillet 2010, page 269).

Even though significant investments are being made to design initial education programs that ensure the acquisition of these competencies, there are widespread concerns regarding whether future teachers are being adequately trained to work with students with special educational needs (Lancaster and Bain, 2007). However, teachers who state that they have attended compulsory courses aimed at acquiring the aforementioned competencies show more positive attitudes toward inclusive education than teachers who have not attended such courses (Skočić Mihić, Gabrić and Bošković, 2016). Similarly, several studies have reported the importance of initial education aimed at acquiring competencies for working with students with special educational needs for the development of both positive attitudes towards educational inclusion and self-efficacy for inclusive teaching (Loreman et al., 2005; Savolainen et al., 2011; Sharma et al., 2014).

OBJECTIVES AND RESEARCH QUESTIONS

Given that teacher self-efficacy is cited in the literature as one of the most important indicators of successful implementation of inclusive education (Sharma et al., 2012), it is important to determine the relationship between factors related to the educational qualifications of teachers who work with students with special educational needs and teacher self-efficacy for inclusive teaching. The aim of this study was to define the latent structure of the characteristics associated with the educational qualifications of teachers who work with students with special educational needs based on their initial education and in-service training programs. We aimed

cima s teškoćama tijekom inicijalnog obrazovanja i kroz stručno usavršavanje nakon studija te dati pregled ukupne strukture tih obilježja temeljene na objektivnim pokazateljima.

Postavljena su sljedeća istraživačka pitanja:

Istraživačko pitanje 1: Je li broj pohađanih kolegija usmjerenih na poučavanje učenika s teškoćama tijekom inicijalnog obrazovanja povezan sa samopercipiranom samoeфикасношћu učitelja za inkluzivnu praksu?

Navedeno uključuje utvrđivanje postojanja statistički značajnih razlika u pojedinim komponentama učiteljske samoeфикасношћu za inkluzivno poučavanje između učitelja koji se tijekom svog inicijalnog obrazovanja uopće nisu educirali za rad s učenicima s teškoćama, onih koji su se educirali kroz jedan ili dva kolegija te onih koji su se educirali kroz tri ili više kolegija.

Istraživačko pitanje 2: Je li trajanje edukacija za poučavanje učenika s teškoćama kroz stručno usavršavanje povezano sa samopercipiranom samoeфикасношћu učitelja za inkluzivnu praksu?

Navedeno uključuje utvrđivanje postojanja statistički značajnih razlika u pojedinim komponentama učiteljske samoeфикасношћu za inkluzivno poučavanje između učitelja koji se nakon inicijalnog obrazovanja uopće nisu osposobljavali za rad s učenicima s teškoćama, onih koji su se osposobljavali u trajanju do 20 sati i onih koji su se osposobljavali u trajanju 20 i više sati.

METODE

Uzorak ispitanika

Istraživanjem je obuhvaćeno 177 učitelja iz 10 osnovnih škola u Istarskoj županiji. Uzorak čine učitelji obaju spolova (22 muškog i 155 ženskog). S obzirom na radno mjesto uzorak čini 106 učitelja predmetne nastave i 71 učitelj razredne nastave. Istraživanje je provedeno u studenom 2020. godine putem *online*-upitnika. Prilikom ispitivanja poštovani su etički standardi. Nacrt istraživanja prethodno je odobren od strane Povjerenstva za procjenu etičnosti istraživanja Sveučilišta Jurja Dobrile u Puli. Prethodno provođenju istraživanja

to provide an overview of the overall structure of these characteristics based on objective indicators.

The following research questions were addressed:

Research question 1: Is there an association between teacher self-perceived self-efficacy for inclusive practice and the number of courses attended by a teacher during their initial education that focus on teaching students with special educational needs?

This question was addressed by determining the existence of statistically significant differences between teachers in individual components of teacher self-efficacy for inclusive teaching. Here we compared teachers who did not receive any education on how to work with students with special needs during their initial education, those who were educated through one or two courses, and those who were educated through three or more courses.

Research question 2: Is there an association between teacher self-perceived self-efficacy for inclusive practices and the duration of education received through in-service training programs by teachers who work with students with special educational needs?

This question was addressed by determining the existence of statistically significant differences between teachers in individual components of teacher self-efficacy for inclusive teaching. Here we compared teachers who did not undergo additional training after their initial education on how to teach students with special educational needs, those who trained for up to 20 hours through in-service training programs, and those who trained for 20 or more hours through in-service training programs.

METHODS

Sample

In this study, we included 177 teachers from 10 primary schools in Istria County, Croatia. The sample consisted of teachers of 22 male and 155 female teachers. Based on the workplace, the sample consisted of 106 subject teachers and 71 primary school teachers. The survey was conducted in November 2020 using an online questionnaire. All ethical standards were respected during the study, and the study was approved by the Commission for

Tablica 1: *Raspodjela učitelja s obzirom na broj pohađanih kolegija usmjerenih na rad s učenicima s teškoćama tijekom inicijalnog obrazovanja* / **Table 1:** *Distribution of teachers based on the number of courses they attended during their initial education that focused on teaching students with special educational needs*

Number of courses focused on teaching students with special educational needs during initial education	n
None (UI1)	101
1 to 2 courses (UI2)	63
3 or more courses (UI3)	13
Total	177

Tablica 2: *Raspodjela učitelja s obzirom na broj sati stručnog usavršavanja za rad s učenicima s teškoćama nakon studija* / **Table 2:** *Distribution of teachers based on the number of hours of in-service training attended after their initial education that focused on teaching students with special educational needs*

Number of hours of in-service training that focused on teaching students with special educational needs	n
None (US1)	71
Up to 20 hours (US2)	87
20 hours and more (US3)	19
Total	177

ispitanici su bili upućeni u cilj i svrhu istraživanja te im je ponuđen informirani pristanak. U Tablicama 1 i 2 prikazana je raspodjela učitelja u uzorku.

Mjerni instrument

Ispitivanje je provedeno u školskoj godini 2020/2021. u okviru pilot-predtestiranja Upitnika samoefikasnosti za inkluzivnu praksu konstruiranog za potrebe istraživanja samoprocjene samoefikasnosti učitelja u inkluzivnom obrazovanju u Istarskoj županiji. Upitnik samoefikasnosti za inkluzivnu praksu konstruirali su autori ovog članka. Ispitanici u njemu izražavaju svoju samopercipiranu samoefikasnost slaganjem ili neslaganjem sa svakom od izjava na petostupanjskoj skali Likertova tipa („uopće se ne slažem“, „donekle se ne slažem“, „ne mogu odlučiti“, „donekle se slažem“ i „u potpunosti se slažem“). U ovom istraživanju korištena je subskala Samoefikasnosti za inkluzivno poučavanje koja je sastavni dio Upitnika samoefikasnosti za inkluzivnu praksu. Subskalu samoefikasnosti za inkluzivno poučavanje čini 11 varijabli. Analiza mjernih značajki subskale pokazala je njezinu visoku pouzdanost. Cronbachov α koeficijent za subskalu iznosi ,895, a standardna mjera pouzdanosti $r_{tt} = ,873$. Guttman-Nicewanderov koeficijent iznosi $\lambda_6 = ,914$. Koeficijent ho-

the Evaluation of the Ethics of Research at the University of Juraj Dobrila in Pula. Prior to conducting the research, the respondents were informed about the goal and purpose of the research study. All included participants provided informed consent for their anonymised data to be analysed and published for research purposes. Tables 1 and 2 represent the distribution of teachers in the sample.

Instrument

The survey was conducted during the school year 2020/2021 under the framework of the pilot program pre-testing the Self-Efficacy for Inclusive Practice Questionnaire, which was constructed for the purpose of conducting self-efficacy self-assessments of Istrian teachers involved in inclusive education. The Self-Efficacy for Inclusive Practice Questionnaire was developed in 2020 by the author/s of the present study. Respondents expressed their self-perceived self-efficacy by agreeing or disagreeing with each of the statements provided in the Likert-type five-point scale questionnaire (“I completely disagree”, “I somewhat disagree”, “I can’t decide”, “I somewhat agree”, and “I completely agree”). This study also used the Self-efficacy for Inclusive Teaching Subscale, which is an integral part of the Self-Efficacy for Inclusive Practice Questionnaire. The Self-effi-

mogenosti za subskalu samoefikasnosti za inkluzivno poučavanje iznosi $\text{hom1} = ,455$.

Metode obrade podataka

Podaci su obrađeni računalnim programima SPSS 24 (IBM, Armonk, New York, USA) i R 4.2 (R Core Team, Beč, Austrija). U obradi podataka korištene su jednosmjerna i multivarijatna analiza varijance te diskriminacijska analiza.

REZULTATI I RASPRAVA

Inicijalno obrazovanje

Za testiranje razlika između skupina učitelja s obzirom na inicijalno obrazovanje u odnosu na kombinaciju varijabli subtesta samoefikasnosti za inkluzivno poučavanje korištena je multivarijatna analiza varijance. Wilksovom lambda prikazan je odnos postotka varijance u zavisnoj varijabli koji nije objašnjen razlikama u razinama nezavisne varijable (Field, 2018). Analiza je pokazala postojanje statistički značajnih razlika u samoefikasnosti za inkluzivno poučavanje između taksonomskih skupina učitelja koji tijekom studija nisu pohađali nijedan kolegij usmjeren na rad s učenicima s teškoćama, onih koji su pohađali 1 do 2 kolegija i onih koji su pohađali 3 i više kolegija $\Lambda = ,792$, $F(22, 328) = 1,84$, $p = ,013$.

Dakle multivarijatna analiza varijance otkrila je da je broj pohađanih kolegija usmjerenih na poučavanje učenika s teškoćama tijekom inicijalnog obrazovanja uistinu povezan s učiteljskom samoefikasnosti za inkluzivnu praksu. Izdvojeni univarijatni testovi, prikazani u Tablici 3, pokazali su kako statistički značajne razlike postoje za tri varijable: „Znam koristiti različite metode poučavanja učenika s teškoćama (perceptivnu prilagodbu, spoznajnu prilagodbu, jezičnu prilagodbu, prilagođavanje zahtjeva)“, $F(2, 174) = 6,03$, $p = ,003$; „Mogu informirati druge o zakonskoj regulativi i pravima povezanim s inkluzijom učenika s teškoćama“, $F(2, 174) = 6,56$, $p = ,002$; „Znam kako organizirati edukacije i radionice za roditelje na temu različitosti među učenicima“, $F(2, 174) = 6,69$, $p = ,009$.

cacy for Inclusive Teaching Subscale consists of 11 variables, and an analysis of the Subscale's measurement characteristics showed good reliability. Cronbach's α for the Subscale was 0.895 and the standard measure of reliability (rtt) was 0.873. The Guttman-Nicewander coefficient (λ_6) was 0.914 and the Homogeneity Coefficient for the Self-efficacy for Inclusive Teaching Subscale (hom1) was 0.455.

Data analysis

All statistical analyses were performed using SPSS 24 (IBM, Armonk, NY, USA) and R 4.2 (R Core Team, Vienna, Austria). Data were analysed using one-way and multivariate analysis of variance, as well as discriminant analyses.

RESULTS

Initial education

Multivariate analysis of variance was used to assess the differences between groups of teachers with respect to the relationship between their initial education and data corresponding to the combination of variables addressed in the Self-efficacy for Inclusive Teaching Subscale. Wilks' lambda shows the ratio of the percentage of variance in a dependent variable that is not explained by differences in the levels of the independent variable (Field, 2018). Our analysis showed the existence of statistically significant differences in self-efficacy for inclusive teaching between groups of teachers who did not attend any courses focused on working with students with disabilities, those who attended one to two courses, and those who attended three or more courses ($\Lambda = 0.792$, $F(22, 328) = 1.84$, $p = 0.013$).

Furthermore, multivariate analysis of variance revealed that the number of courses attended during initial education that focused on teaching students with special educational needs is, indeed, related to teacher self-efficacy for inclusive practice. The results of the univariate tests (presented in Table 3) show the existence of statistically significant differences with respect to the following three variables: "I can use different methods to teach students with special educational needs (perceptual adaptation, cognitive adaptation, language adaptation, adjustment of

Tablica 3: Rezultati jednosmjerne analize varijance – F-omjeri (F), njihova statistička značajnost (P) i aritmetičke sredine za varijable samoefikasnosti za inkluzivno poučavanje za skupine učitelja koji tijekom studija nisu pohađali nijedan kolegij usmjeren na rad s učenicima s teškoćama (UI1), učitelje koji su pohađali jedan ili dva kolegija (UI2) i one koji su pohađali tri i više kolegija (UI3). / Table 3: Results of one-way analysis of variance including F-ratios (F), their statistical significance (p), and arithmetic means for self-efficacy variables for inclusive teaching for groups of teachers who did not attend any courses focused on working with students with special educational needs during their initial education (UI1), teachers who attended one or two courses (UI2), and those who attended three or more courses (UI3).

Variable	UI1	UI2	UI3	F	p
I can use different strategies for monitoring and evaluating students (customised tests, assessment of task performance, evaluation based on personal achievement, time adjustment).	4.00	4.02	4.61	2.99	0.052
I know how to use different methods to teach students with special educational needs (perceptual adaptation, cognitive adaptation, language adaptation, adjustment of requirements).	3.73	3.95	4.61	6.03	0.003*
I know how to adapt teaching materials considering the individual needs of students with special educational needs.	3.95	4.06	4.23	0.77	0.466
I can inform others about the legislation and rights related to the inclusion of students with special educational needs.	2.94	3.14	4.15	6.56	0.002*
I know how to adapt teaching materials to students with special educational needs during distance learning.	3.76	3.87	4.30	2.19	0.115
I know how to create an IEP/individualised curriculum for students with special educational needs.	3.69	3.65	4.00	0.53	0.592
I can work with other professionals and staff (teaching assistants or professional communication mediators, doctor, social worker, psychologist, members of the mobile team, other teachers) for the purpose of teaching students with special educational needs.	4.09	4.36	4.39	1.97	0.143
I know how to work with other professionals (educational rehabilitator or speech therapist) in creating a curriculum for students with special educational needs.	3.76	4.08	4.15	2.07	0.129
I know how to organise educations and workshops for parents on the topic of diversity among students.	2.90	3.41	3.62	4.83	0.009*
I know how to create assignments by considering the individual needs of students with special educational needs.	4.22	4.16	4.39	0.545	0.581
I know how to choose a place for a student in the classroom from where they can follow the lessons better.	4.25	4.43	4.23	1.02	0.364

Rezultati jednosmjerne analize varijance, prikazani u Tablici 3, pokazali su kako učitelji iz skupine koja se tijekom inicijalnog obrazovanja educirala za rad s učenicima s teškoćama kroz tri i više kolegija postižu najbolje rezultate na svim varijablama subtesta samoefikasnosti za inkluzivno poučavanje osim na varijabli „Znam odabrati za učenika mjesto s kojeg će najbolje pratiti nastavu“, gdje najbolje rezultate postižu učitelji iz druge skupine koja se tijekom inicijalnog obrazovanja educirala za rad s učenicima s teškoćama kroz jedan do dva kolegija. Učitelji iz skupine koja se uopće nije educirala za rad s učenicima s teškoćama tijekom svog inicijalnog obrazovanja općenito postižu najlošije rezultate, osim u rani-

requirements)” [F (2, 174) = 6.03, p = 0.003]; “I can inform others about the legislation and rights related to the inclusion of students with special educational needs” [F (2, 174) = 6.56, p = 0.002]; and “I know how to organise educational programs and workshops for parents on the topic differences among students” [F (2, 174) = 6.69, p = 0.009].

The results of the one-way analysis of variance (Table 3) reveal that teachers from the group that attended three or more courses during their initial education on how to work with students with special educational needs achieve the best results on all variables of the Self-efficacy for Inclusive Teaching Subscale, except for the variable “I know how to choose a place for a student in the classroom from

je spomenutoj varijabli koja govori o učiteljevoj samoefikasnosti povezanoj s odabirom mjesta s kojeg će učenik najbolje pratiti nastavu.

Stručno usavršavanje nakon studija

Za testiranje razlika između skupina učitelja s obzirom na stručno usavršavanje nakon studija u odnosu na kombinaciju varijabli subtesta samoefikasnosti za inkluzivno poučavanje također je korištena multivarijatna analiza varijance. Analiza je pokazala postojanje statistički značajnih razlika u samoefikasnosti za inkluzivno poučavanje između taksonomskih skupina učitelja koji se nakon studija nisu uopće usavršavali za rad s učenicima s teškoćama, onih koji su se usavršavali kroz, sveukupno, maksimalnih 20 sati i onih koji su se usavršavali kroz 20 i više sati stručnog usavršavanja $\Lambda = ,800$, $F(22, 328) = 1,76$, $p = ,020$. Prema tome analiza podataka pokazala je kako je trajanje edukacija za rad s učenicima s teškoćama kroz stručno usavršavanje povezano s učiteljskom samoefikasnosti za inkluzivnu praksu.

Izdvojeni univarijatni testovi, prikazani u Tablici 4, pokazali su kako statistički značajne razlike postoje za šest varijabli: „Znam koristiti različite strategije praćenja i vrednovanja učenika (prilagođene testove, procjene izvedbe zadatka, vrednovanje s obzirom na osobno postignuće, vremenska prilagodba i slično)“, $F(2, 174) = 10,53$, $p < ,001$; „Znam koristiti različite metode poučavanja učenika s teškoćama (perceptivnu prilagodbu, spoznajnu prilagodbu, jezičnu prilagodbu, prilagođavanje zahtjeva)“, $F(2, 174) = 6,72$, $p = ,002$; „Mogu informirati druge o zakonskoj regulativi i pravima vezanim uz inkluziju učenika s teškoćama“, $F(2, 174) = 3,40$, $p = ,036$; „Znam izraditi IOOP/individualizirani kurikulum za učenike s teškoćama“, $F(2, 174) = 3,51$, $p = ,032$; „Znam kako organizirati edukacije i radionice za roditelje na temu različitosti među učenicima“, $F(2, 174) = 10,35$, $p < ,001$ i „Znam kreirati zadatke tako da uzmem u obzir individualne potrebe učenika s teškoćama“, $F(2, 174) = 3,72$, $p = ,026$.

where they can follow the lessons better”. In this case, the best results were achieved by teachers from the second group, who attended one or two courses during their initial education on how to work with students with special educational. Teachers who had not undergone any education on how to work with students with special educational needs during their initial education generally performed the worst, except in the variable that is associated with teacher self-efficacy in choosing the place from where a student can follow the lessons better.

In-service training

Multivariate analysis of variance was also used to assess the differences between groups of teachers with respect to the relationship between in-service training programs attended and data corresponding to the combination of variables addressed in the Self-efficacy for Inclusive Teaching Subscale. Our analysis showed the existence of statistically significant differences in self-efficacy for inclusive teaching between groups of teachers who did not undergo training on how to work with students with special educational needs after their initial education, those who underwent in-service training for up to 20 hours, and those who underwent in-service training for 20 or more hours ($\Lambda = 0.800$, $F(22, 328) = 1.76$, $p = 0.020$). Our findings show that the duration of in-service training received on how to teach students with special educational needs was associated with teacher self-efficacy for inclusive practices.

Additional univariate tests show statistically significant differences between groups of teachers in the following six variables: “I can use different strategies for monitoring and evaluating students (customized tests, assessment of task performance, evaluation based on personal achievement, time adjustment)” [$F(2, 174) = 10.53$, $p < 0.001$]; “I know how to use different methods to teach students with special educational needs (perceptual adaptation, cognitive adaptation, language adaptation, adjustment of requirements)” [$F(2, 174) = 6.72$, $p = 0.002$]; “I can inform others about the legislation and rights related to the inclusion of students with special educational needs” [$F(2, 174) = 3.40$, $p = 0.036$]; “I know how to create an IEP/individualised curriculum for students with special educational

Tablica 4: Rezultati jednosmjerne analize varijance – *F*-omjeri (*F*), njihova statistička značajnost (*P*) i aritmetičke sredine za varijable samoefikasnosti za inkluzivno poučavanje za skupine učitelja koji se nakon studija uopće nisu stručno usavršavali za rad s učenicima s teškoćama (US1), učitelje koji su se stručno usavršavali u trajanju do 20 sati (US2) i one koji su se stručno usavršavali 20 i više sati (US3). / **Table 4:** Results of one-way analysis of variance including *F*-ratios (*F*), their statistical significance (*p*), and arithmetic means for self-efficacy variables for inclusive teaching for groups of teachers who did not undergo any in-service training focused on working with students with special educational needs after their initial education (US1), those who underwent in-service training for up to 20 hours (US2), and those who underwent in-service training for 20 and more hours (US3).

Variable	US1	US2	US3	F	p
I can use different strategies for monitoring and evaluating students (customised tests, assessment of task performance, evaluation based on personal achievement, time adjustment).	3.86	4.03	4.84	10.53	<0.001*
I know how to use different methods to teach students with special educational needs (perceptual adaptation, cognitive adaptation, language adaptation, adjustment of requirements).	3.78	3.81	4.58	6.72	0.002*
I know how to adapt teaching materials considering the individual needs of students with special educational needs.	3.94	3.98	4.42	2.41	0.092
I can inform others about the legislation and rights related to the inclusion of students with special educational needs.	2.96	3.08	3.74	3.40	0.036*
I know how to adapt teaching materials to students with special educational needs during distance learning.	3.78	3.79	4.32	3.01	0.056
I know how to create an IEP/individualised curriculum for students with special educational needs.	3.56	3.68	4.32	3.51	0.032*
I can work with other professionals and staff (teaching assistants or professional communication mediators, doctor, social worker, psychologist, members of the mobile team, other teachers) for the purpose of teaching students with special educational needs.	4.14	4.23	4.37	0.49	0.616
I know how to work with other professionals (educational rehabilitator or speech therapist) to create a curriculum for students with special educational needs.	3.86	3.90	4.11	0.39	0.677
I know how to organise educations and workshops for parents on the topic of diversity among students.	2.99	3.01	4.26	10.35	<0.001*
I know how to create assignments by considering the individual needs of students with special educational needs.	4.09	4.23	4.58	3.72	0.026*
I know how to choose a place for a student in the classroom from where they can follow the lessons better.	4.23	4.30	4.68	2.41	0.093

Slično kao i kod taksonomskih skupina ispitanika koji se razlikuju prema trajanju edukacije za rad s učenicima s teškoćama tijekom svojeg inicijalnog obrazovanja i ovdje je vidljivo da najbolje rezultate postižu učitelji iz skupine koja se nakon studija stručno usavršavala za rad s učenicima s teškoćama u trajanju od 20 i više sati. Učitelji koji se uopće nisu stručno usavršavali za rad s učenicima s teškoćama postigli su najniže rezultate na svim varijablama subtesta samoefikasnosti za inkluzivno poučavanje.

needs” [$F(2, 174) = 3.51, p = 0.032$]; “I know how to organise education programs and workshops for parents on the topic of diversity among students” [$F(2, 174) = 10.35, p < 0.001$]; and “I know how to create assignments by considering the individual needs of students with special educational needs” [$F(2, 174) = 3.72, p = 0.026$] (Table 4).

Similar to the groups of respondents who differed in the duration of their initial education on how to work with students with special educational needs, univariate analysis of variance revealed that the best results were achieved by teachers who had undergone 20 or more hours of in-service training after their initial education on how

REZULTATI DISKRIMINACIJSKE ANALIZE

Inicijalno obrazovanje

Diskriminacijska analiza omogućila je uvid u razlike među skupinama učitelja i u to koliko individualne varijable pridonose tim razlikama. Rezultati diskriminacijske analize pokazali su da se subtest od 11 varijabli samoefikasnosti za inkluzivno poučavanje može svesti na dvije diskriminacijske funkcije. Prva od njih objašnjava 58,1% varijance, s koeficijentom kanoničke korelacije $R = ,354$, dok druga objašnjava preostalih 41,9% varijance, s koeficijentom kanoničke korelacije $R = ,307$.

U kombinaciji ove dvije diskriminacijske funkcije značajno razlikuju skupine ispitanika s

to work with students with special educational needs. Teachers who did not undergo any in-service training scored the lowest on all variables of the Self-efficacy for Inclusive Teaching Subscale.

RESULTS OF DISCRIMINANT ANALYSES

Initial education

The discriminant analysis helped reveal how groups of teachers differed from each other and how much individual variables contributed to the differences identified. The results of the discriminant analysis showed that the subscale consisting of 11 variables of self-efficacy for inclusive teaching can be reduced to two discriminant functions.

Tablica 5: Postotak objašnjene varijance (%var), koeficijent kanoničke korelacije (R), Wilksova lambda (Λ), hi-kvadrat (χ^2), stupnjevi slobode (df), statistička značajnost diskriminacijske funkcije (P) – inicijalno obrazovanje / **Table 5:** Results of discriminant analysis with respect to initial education on how to work with students with special educational needs, including percentage of variance explained (Var), canonical correlation coefficient (R), Wilks's lambda (Λ), chi-square (χ^2), degrees of freedom (df), and the statistical significance of the discriminant function (p)

Function	Var (%)	R	Λ	χ^2	df	P
1	58.1	.354	.792	39.38	22	.013
2	41.9	.307	.906	16.69	10	.082

Tablica 6: Struktura diskriminacijskih funkcija – inicijalno obrazovanje / **Table 6:** Structure of discriminant functions - Initial education

Variables	Function 1	Function 2
I can inform others about the legislation and rights related to the inclusion of students with special educational needs.	0.716*	0.126
I know how to use different methods to teach students with special educational needs (perceptual adaptation, cognitive adaptation, language adaptation, adjustment of requirements).	0.664*	0.240
I can use different strategies for monitoring and evaluating students (customised tests, assessment of task performance, evaluation based on personal achievement, time adjustment).	0.486*	- 0.066
I know how to adapt teaching materials to students with special educational needs during distance learning.	0.409*	0.105
I know how to adapt teaching materials considering the individual needs of students with special educational needs.	0.212*	0.152
I know how to create an IEP/individualised curriculum for students with special educational needs.	0.189*	- 0.092
I know how to create assignments by considering the individual needs of students with special educational needs.	0.163*	- 0.153
I know how to organise educations and workshops for parents on the topic of diversity among students.	0.388	0.571
I can work with other professionals and staff (teaching assistants or professional communication mediators, doctor, social worker, psychologist, members of the mobile team, other teachers) for the purpose of teaching students with special educational needs.	0.199	0.403
I know how to work with other professionals (educational rehabilitator or speech therapist) to create a curriculum for students with special educational needs.	0.231	0.394
I know how to choose a place for a student in the classroom from where they can follow the lessons better.	- 0.028	0.334

obzirom na to jesu li tijekom studija pohađali jedan do dva kolegija usmjerena na rad s učenicima s teškoćama, tri i više takvih kolegija ili uopće nisu pohađali kolegije čiji ishodi uključuju rad s učenicima s teškoćama: $\Lambda = ,792$, $\chi^2(22) = 39,38$, $p = ,013$. Međutim uklanjanje prve funkcije ukazuje na to da druga funkcija ne razlikuje značajno skupine ispitanika: $\Lambda = ,906$, $\chi^2(10) = 16,69$, $p = ,082$, što je prikazano u Tablici 5.

Temeljem analize korelacije varijabli s prvom diskriminacijskom funkcijom, prikazane u Tablici 6, vidljivo je da s njom značajno koreliraju varijable koje su u najvećem dijelu povezane s neposrednom podrškom učeniku s teškoćama u nastavi, poput korištenja različitih metoda poučavanja učenika s teškoćama ($r = ,664$), korištenje različitih strategija praćenja i vrednovanja učenika ($r = ,486$) i prilagodba nastavnih materijala tijekom nastave na daljinu ($r = ,409$). Stoga je prva funkcija imenovana kao *samoefikasnost za neposrednu podršku*.

Budući da rezultati diskriminacijske analize koji nisu značajni ne dozvoljavaju interpretaciju strukture diskriminacijskih funkcija, odnos varijabli s drugom funkcijom samo će se prikazati u Tablici 6.

Uzimajući u obzir predznak centroida skupina te njihove vrijednosti za svaku skupinu, kako je prikazano u Tablici 7, možemo zaključiti kako skupina ispitanika koji su se tijekom inicijalnog obrazovanja educirali za rad s učenicima s teškoćama kroz tri i više kolegija postiže najviše rezultate u području samoefikasnosti za pružanje neposredne podrške učenicima s teškoćama. Skupina ispitanika koji se tijekom inicijalnog obrazovanja nisu uopće educirali za rad s učenicima s teškoćama pokazuje usporedno s ostalim skupinama najniže rezultate.

Tablica 7: *centroidi skupina – inicijalno obrazovanje*
/ **Table 7:** *Group centroids - Initial education*

Group	Function 1	Function 2
UI1	- 0.154	- 0.244
UI2	- 0.025	0.429
UI3	1.318	- 0.182

The first discriminant function explained 58.1% of the variance and had a canonical correlation coefficient (R) of 0.354, while the second explained the remaining 41.9% of the variance and had a canonical correlation coefficient (R) of 0.307.

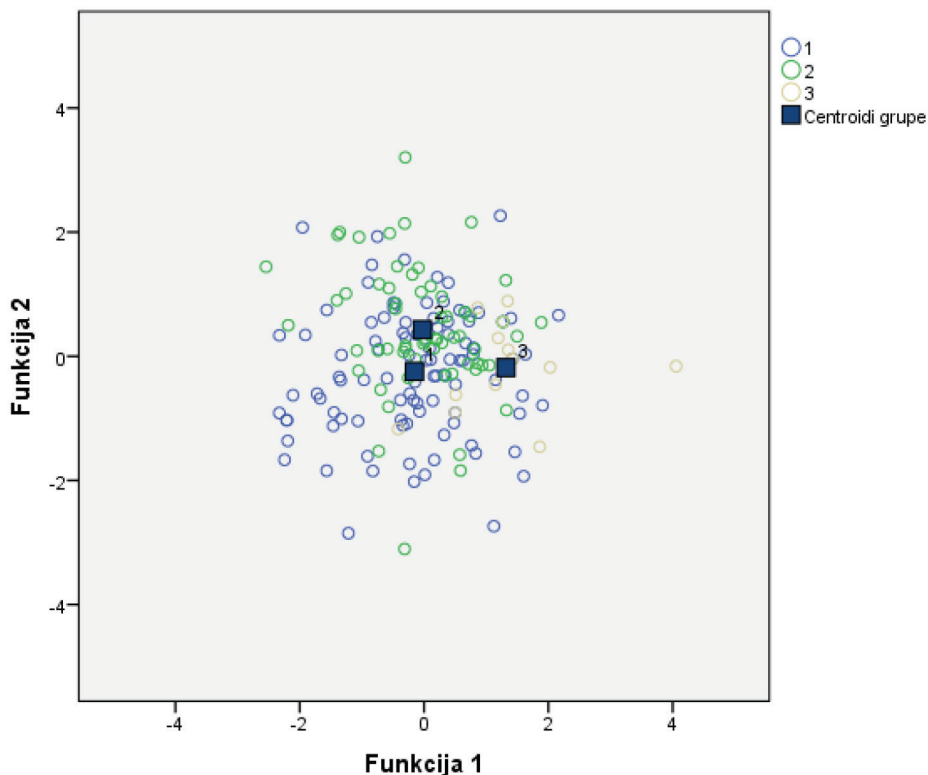
In combination, these two discriminant functions were able to significantly differentiate between groups of respondents based on whether they attended one to two courses focused on working with students with special educational needs, three or more such courses, or no such courses ($\Lambda = 0.792$, $\chi^2(22) = 39.38$, $p = 0.013$). However, the removal of the first function indicated that the second function alone was not able to significantly differentiate between the groups of subjects ($\Lambda = 0.906$, $\chi^2(10) = 16.69$, $p = 0.082$; Table 5).

The analysis presented in Table 6 shows the significant association between the first discriminant function and variables that are mainly related to directly supporting students with special educational needs, such as the use of different teaching methods for students with disabilities ($r = 0.664$), use of different strategies for monitoring and evaluating students ($r = 0.486$), and adaptation of teaching materials during distance learning ($r = 0.409$). Therefore, the first function was named '*self-efficacy for immediate support*'.

Based on our analysis, there is no significant association between the variables and the second discrimination function (Table 6).

Considering the positive or negative signs of the group centroids and their values for each group, we can conclude that the group of respondents who participated in three or more courses on how to work with students with special needs during their initial education achieved the best results with respect to self-efficacy for immediate support (Table 7). The group of respondents who did not attend any courses on how to work with students with special needs during their initial education showed the lowest results compared to the other groups.

Slika 1: Grafički prikaz položaja skupine učitelja koja tijekom inicijalnog obrazovanja nije pohađala nijedan kolegij usmjeren na rad s učenicima s teškoćama (1), skupine učitelja koja je pohađala jedan do dva takva kolegija (2) i skupine učitelja koja je pohađala tri i više kolegija (3) u koordinatnom sustavu definiranom diskriminacijskim osima Funkcija 1 i 2 / **Figure 1:** Graphical representation of the position of teachers who did not attend any courses focused on working with students with special educational needs during their initial education (1), teachers who attended one to two courses (2), and teachers who attended three or more courses (3) as defined by Functions 1 and 2 on the discriminant axes.



Stručno usavršavanje

Rezultati diskriminacijske analize i ovdje pokazuju kako se subtest od 11 varijabli samoefikasnosti za inkluzivno poučavanje može svesti na dvije diskriminacijske funkcije. Prva od njih objašnjava čak 91,8% varijance, s koeficijentom kanoničke korelacije $R = ,429$, dok druga objašnjava preostalih 8,2% varijance, s koeficijentom kanoničke korelacije $R = ,141$.

U kombinaciji ove dvije diskriminacijske funkcije značajno razlikuju skupine ispitanika s obzirom na to jesu li se nakon studija educirali za rad s učenicima u trajanju do 20 sati, više od 20 sati ili se uopće nisu uključivali u edukacije vezane uz rad s učenicima s teškoćama: $\Lambda = ,800$, $\chi^2(22) = 37,78$, $p = ,019$. Međutim uklanjanje prve funkcije ukazuje

In-service training

The results of the discriminant analysis showed how the subtest of 11 variables of self-efficacy for inclusive teaching can be reduced to two discriminant functions. The first function explained 91.8% of the variance and had a canonical correlation coefficient (R) of 0.429, while the second explained the remaining 8.2% of the variance and had a canonical correlation coefficient (R) of 0.141.

In combination, these two discriminant functions were able to significantly differentiate between the groups of respondents based on whether they attended in-service training programs on how to work with students with special educational needs for up to 20 hours, more than 20 hours, or did not participate in such training programs at all

Tablica 8: Postotak objašnjene varijance (%var), koeficijent kanoničke korelacije (R), Wilksova lambda (Λ), hi-kvadrat (χ²), stupnjevi slobode (df), statistička značajnost diskriminacijske funkcije (P) – stručno usavršavanje / **Table 8:** Results of discriminant analysis with respect to initial education on how to work with students with special educational needs, including percentage of variance explained (Var), canonical correlation coefficient (R), Wilks's lambda (Λ), chi-square (χ²), degrees of freedom (df), and statistical significance of the discriminant function (p)

Function	Var (%)	R	Λ	χ ²	df	P
1	91.8	0.429	0.800	37.78	22	0.019
2	8.2	0.141	0.980	3.38	10	0.971

Tablica 9: Struktura diskriminacijskih funkcija – stručno usavršavanje / **Table 9:** Structure of discriminant functions – In-service training

Variables	Function 1	Function 2
I can use different strategies for monitoring and evaluating students (customised tests, assessment of task performance, evaluation based on personal achievement, time adjustment).	0.729*	0.218
I know how to organise education programs and workshops for parents on the topic of diversity among students.	0.715*	- 0.416
I know how to use different methods to teach students with special educational needs (perceptual adaptation, cognitive adaptation, language adaptation, adjustment of requirements).	0.579*	- 0.283
I know how to create an IEP/individualised curriculum for students with special educational needs.	0.422*	0.064
I know how to create assignments by considering the individual needs of students with special educational needs.	0.417*	0.412
I can inform others about the legislation and rights related to the inclusion of students with special educational needs.	0.415*	0.074
I know how to adapt teaching materials to students with special educational needs during distance learning.	0.387*	- 0.196
I know how to choose a place for a student in the classroom from where they can follow the lessons better.	0.350*	0.068
I know how to adapt teaching materials to students with special educational needs during distance learning.	0.349*	- 0.109
I know how to work with other professionals (educational rehabilitator or speech therapist) to create a curriculum for students with special educational needs.	0.141*	0.021
I can work with other professionals and staff (teaching assistants or professional communication mediators, doctor, social worker, psychologist, members of the mobile team, other teachers) for the purpose of teaching students with special educational needs.	0.142	0.227

na to da druga funkcija ne razlikuje značajno skupine ispitanika: $\Lambda = ,980$, $\chi^2(10) = 3,38$, $p = ,971$. Rezultati su prikazani u Tablici 8.

Analiza korelacije varijabli s prvom diskriminacijskom funkcijom, prikazana u Tablici 9, pokazuje da sve varijable s njom pozitivno koreliraju. Rezultati diskriminacijske analize koji nisu značajni ne dozvoljavaju interpretaciju strukture diskriminacijskih funkcija te će se odnos varijabli s drugom funkcijom samo prikazati u Tablici 9.

Analiza centroida skupina, prikazana u Tablici 10, pokazuje kako Funkcija 1 jasno razlikuje skupinu ispitanika koji se nakon studija uopće nisu usavršavali za rad s učenicima s teškoćama i skupinu

($\Lambda = 0.800$, $\chi^2(22) = 37.78$, $p = 0.019$). However, the removal of the first function indicated that the second function was no longer able to significantly differentiate between the groups of subjects ($\Lambda = 0.980$, $\chi^2(10) = 3.38$, $p = 0.971$; Table 8).

The first discriminant function showed a positive correlation with all variables associated with self-efficacy (Table 9). This was not the case with the second discriminant function (Table 9).

The analysis of group centroids showed that Function 1 was able to clearly distinguish the group of subjects who did not attend any in-service training on how to work with students with

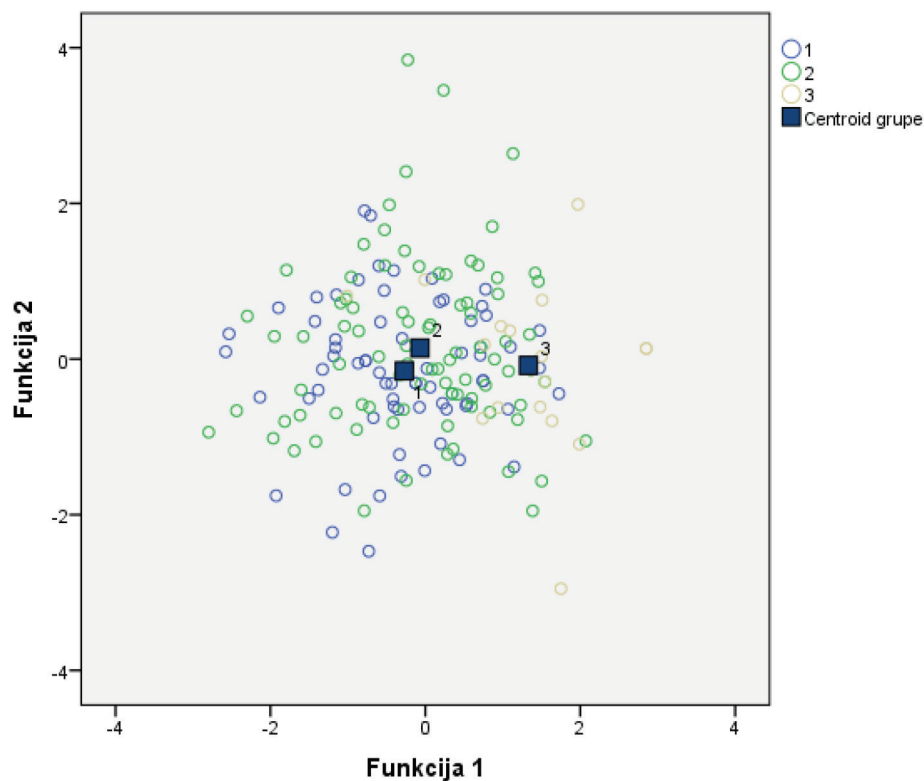
koja se usavršavala manje od 20 sati od skupine ispitanika koji su se usavršavali u trajanju od 20 i više sati. Uzimajući u obzir predznak centroida skupina te njihove vrijednosti za svaku skupinu, možemo zaključiti kako skupina ispitanika koji su se za rad s učenicima s teškoćama educirali kroz 20 i više sati stručnog usavršavanja postižu najviše rezultate u većini varijabli.

Tablica 10: centroidi skupina – stručno usavršavanje
/ **Table 10:** Group centroids – In-service training

Group	Function 1	Function 2
US1	- 0.271	- 0.152
US2	- 0.069	0.142
US3	1.331	- 0.082

special educational needs and those who trained for less than 20 hours from a group of subjects who attended in-service training for 20 or more hours. Considering the positive or negative sign of the group centroids and their values for each group, we can conclude that the group of respondents who were trained to work with students with special educational needs through 20 or more hours of in-service training achieved the best results in most variables.

Slika 2: Grafički prikaz položaja skupine učitelja koji se u okviru stručnog usavršavanja nisu educirali za rad s učenicima s teškoćama (1), skupine učitelja koji su se educirali manje od 20 sati (2) i skupine učitelja koji su se educirali u trajanju od 20 i više sati (3) u koordinatnom sustavu definiranom diskriminacijskim osima Funkcija 1 i 2. / **Figure 2:** Graphical representation of the position of teachers who did not attend any in-service training on how to work with students with special educational needs (1), teachers who attended in-service training programs for less than 20 hours (2), and teachers who attended in-service training programs for 20 or more hours (3) as defined by Functions 1 and 2 on the discriminant axes



RASPRAVA I PREPORUKE

Nekoliko istraživanja pokazalo je da sudjelovanje u ciljanim pripremim programima obrazovanja pozitivno utječe na efikasnost budućih učitelja budući se takvi programi odnose na rad s učenicima koji imaju različite obrazovne potrebe (Carol i sur., 2003.; Palmer, 2006.; Lambe, 2007.; Burton & Pac, 2009; prema Lancaster i Bain, 2010). Analiza podataka u ovom radu potvrdila je nalaze prethodnih istraživanja i pokazala da je broj pohađanih kolegija usmjerenih na poučavanje učenika s teškoćama tijekom inicijalnog obrazovanja pozitivno povezan sa samopercipiranom samoefikasnošću učitelja za inkluzivnu praksu. Učitelji koji su pohađali najveći broj kolegija poveznih s poučavanjem učenika s teškoćama pokazali su najvišu razinu samopercipirane samoefikasnosti za inkluzivnu praksu. Prethodna istraživanja (Lancaster & Bain, 2007; Woodcock, Hemmings & Kay, 2012) postavljaju pitanje je li priprema koju budući učitelji dobivaju za rad s učenicima s teškoćama dovoljna. Ako učitelji početnici uđu u učiteljsko zvanje sa samopouzdanjem i pozitivnim stavovima prema inkluzivnoj nastavi, onda će to vjerojatno rezultirati korištenjem uspješnijih inkluzivnih praksi i nastavkom tih dobrih praksi tijekom njihove karijere, što dovodi do više samopercipirane samoefikasnosti za inkluzivnu praksu (Haugh, 2003). Ovo ukazuje na praktične implikacije za kreatora visokoškolskih programa, koje sugeriraju da bi bilo korisno povećati broj kolegija koji se bave radom s učenicima s teškoćama na učiteljskim studijima. Ovo istraživanje pokazalo je i kako je najmanji broj učitelja u uzorku pohađao tri ili više ovakvih kolegija tijekom svog inicijalnog obrazovanja, što ukazuje na postojanje prostora za poboljšanje.

Kao i u nekim drugim zemljama poput Hong Konga i Grčke (Tzivinikou, 2015.; Chao, Forlin i Ho, 2016), nažalost, u Hrvatskoj se stručno usavršavanje nedovoljno temelji na znanstvenim istraživanjima. Iako se programi stručnog usavršavanja koji se nude učiteljima stalno unapređuju, ovaj razvoj nije sustavan i nije utemeljen na znanstveno dokazanim činjenicama. Međutim pokazalo se da stručno usavršavanje ima značajan pozitivan utjecaj na samoefikasnost učitelja za in-

DISCUSSION AND RECOMMENDATIONS

Several studies have shown that participation in targeted preparatory courses positively influences the efficacy of future teachers, especially in courses focussed on working with students who have a range of educational needs (Carol et al., 2003; Palmer, 2006; Lambe, 2007; Burton & Pac, 2009; according to Lancaster and Bain, 2010). Consistent with the findings of previous studies, our results show a positive association between teacher self-perceived self-efficacy for inclusive practices and the number of courses attended by teachers on how to work with students with special educational needs during their initial education. Teachers who attended three or more courses related to teaching students with special educational needs showed the highest level of self-perceived self-efficacy for inclusive practices.

Previous studies (Lancaster & Bain, 2007; Woodcock, Hemmings & Kay, 2012) have questioned whether the preparation that future teachers receive for working with students with special educational needs is sufficient. If novice teachers enter the teaching profession with confidence and positive attitudes towards teaching in inclusive classrooms, then it is likely that they will employ more successful inclusive practices and continue to use these good practices throughout their careers, which in turn leads to higher self-perceived self-efficacy for inclusive practice (Haugh, 2003). This points to the practical implications for those who develop higher education programs, suggesting that it would be useful to increase the number of courses related to working with students with special educational needs. The present study also showed that the smallest number of teachers in this sample attended three or more such courses during their initial education, indicating the need for improvement in such courses and education programs.

Unfortunately, similar to other countries such as Hong Kong and Greece (Tzivinikou, 2015; Chao, Forlin and Ho, 2016), professional development in Croatia is rarely based on research. Although the in-service training programs offered to teachers are constantly being improved, this development is not systematic, nor is it based on scientifically proven facts. However, professional development has been

kluzivnu praksu, na pozitivne stavove i spremnost za rad s učenicima s teškoćama (Forlin, Sharma i Loreman, 2013; Forlin, Loreman i Sharma, 2014., Chao, Forlin i Ho, 2016). Najmanji broj učitelja u ovom istraživanju pohađao je 20 ili više sati stručnog usavršavanja usmjerenog na podučavanje učenika s teškoćama. Međutim analiza podataka pokazala je da je trajanje edukacija za rad s učenicima s teškoćama kroz stručno usavršavanje pozitivno povezano sa samopercipiranom samoeфикасношću učitelja za inkluzivnu praksu.

Pretpostavlja se da dodatni programi stručnog usavršavanja, temeljeni na znanstvenim istraživanjima, ne bi samo povećali samopercipiranu samoeфикасност učitelja za inkluzivnu praksu nego i unaprijedili potencijale učenika s teškoćama, poboljšali njihovu prihvaćenost i osnažili učitelje u pružanju podrške svim učenicima. Ograničenja ovog istraživanja leže prvenstveno u činjenici da se ono ne bavi drugim poznatim čimbenicima koji mogu pozitivno utjecati na samoeфикасност učitelja za inkluzivnu praksu. Također značajno bi bilo istražiti utjecaj ne samo trajanja edukacija već i njihovog sadržaja i kvalitete na učiteljsku samoeфикасност u ovom području. Osim toga preporuke za daljnja istraživanja svakako uključuju uzorak koji bi obuhvatio učitelje iz cijele države.

ZAKLJUČAK

Inkluzivni model nije moguće provesti ako stručnjaci u praksi nisu pripremljeni kroz inicijalni i trajni profesionalni razvoj (Skočić Mihić i sur., 2016). Rezultati ovog istraživanja pokazuju kako postoje statistički značajne razlike u pojedinim komponentama učiteljske samoeфикасности za inkluzivno poučavanje s obzirom na edukaciju za rad s učenicima s teškoćama stečenu tijekom inicijalnog obrazovanja te s obzirom na edukaciju stečenu kroz stručno usavršavanje. Pokazalo se da učitelji koji su se tijekom inicijalnog obrazovanja educirali za rad s učenicima s teškoćama kroz tri i više kolegija pokazuju višu razinu samopercipirane samoeфикасности za inkluzivno poučavanje od učitelja koji su se educirali kroz jedan do dva kolegija te one koji uopće nisu pohađali kolegije povezane s inkluzivnim obrazovanjem (Istraživačko pitanje 1). Međutim te su razlike

shown to have a significant positive impact on teacher self-efficacy for inclusive practices, positive attitudes, and preparedness to work with students with special educational needs (Forlin, Sharma & Loreman, 2013; Forlin, Loreman & Sharma, 2014, Chao, Forlin & Ho, 2016). Very few teachers in the present study attended 20 or more hours of in-service training focused on teaching students with special educational needs. However, our analysis revealed a positive association between teacher self-efficacy for inclusive practices and the duration of in-service training attended that focussed on working with students with special educational needs.

It is assumed that additional in-service training programs, based on scientific research, would not only increase teacher self-efficacy for inclusive practices, but also improve the potential of students with special educational needs, enhance their acceptance, and empower teachers to support all students. The limitations of the present study lies primarily in the fact that it does not address other known factors that can positively affect teacher self-efficacy for inclusive practices. Also, it is important for future studies to investigate the impact of the duration of education, as well as their content and quality on teacher self-efficacy in this area. In addition, recommendations for further research include a sample that would incorporate teachers from across the country.

CONCLUSIONS

An inclusive model cannot be implemented if practicing professionals are not prepared through initial education and in-service training programs (Skočić Mihić et al., 2016). The results of the present study show that there are statistically significant differences in individual components of teacher self-efficacy for inclusive teaching, given the knowledge they gain during their initial education and through in-service training programs on how to work with students with special educational needs. Teachers who were educated to work with students with special educational needs through three or more courses during their initial education were more effective for inclusive teaching than teachers who attended one or two such courses and those who did not attend any inclu-

statistički značajne u tri varijable. Suprotnu situaciju pokazuje jedino varijabla – „Znam odabrati za učenika mjesto s kojeg će najbolje pratiti nastavu“ – gdje najbolje rezultate postižu učitelji iz druge skupine koja je tijekom inicijalnog obrazovanja pohađala jedan do dva kolegija usmjerena na poučavanje učenika s teškoćama, no ta razlika nije statistički značajna. Učitelji iz skupine koja se uopće nije educirala za rad s učenicima s teškoćama tijekom svog inicijalnog obrazovanja općenito postižu najlošije rezultate, osim u ranije spomenutoj varijabli koja govori o učiteljevoj samoefikasnosti povezanoj s odabirom mjesta s kojeg će učenik najbolje pratiti nastavu. Također istraživanje je pokazalo kako učitelji koji su se za rad s učenicima s teškoćama stručno usavršavali nakon studija u trajanju od 20 i više sati postižu općenito najviši stupanj samoefikasnost za inkluzivno poučavanje, a te su razlike statistički značajne u šest varijabli (Istraživačko pitanje 2). Učitelji koji se uopće nisu stručno usavršavali za rad s učenicima s teškoćama postigli su najniže rezultate na svim varijablama subtesta samoefikasnosti za inkluzivno poučavanje. Diskriminacijskom analizom rezultata ispitanika s obzirom na inicijalno obrazovanje utvrđene su dvije diskriminacijske funkcije od kojih je prva statistički značajna i može se definirati kao samoefikasnost za pružanje neposredne podrške. Rezultati ovog istraživanja pokazali su kako učitelji koji su se tijekom inicijalnog obrazovanja educirali za rad s učenicima s teškoćama kroz tri i više kolegija pokazuju najviše rezultate u području samoefikasnosti za pružanje neposredne podrške učenicima s teškoćama. Skupina ispitanika koja uopće nije pohađala kolegije usmjerene na rad s učenicima s teškoćama pokazuje, usporedno s ostalim skupinama, najniže rezultate. Rezultati diskriminacijske analize rezultata ispitanika s obzirom na trajanje stručnog usavršavanja za rad s učenicima s teškoćama nakon studija pokazuju također da su utvrđene dvije diskriminacijske funkcije. Funkcija 1 uključuje 10 od 11 varijabli subtesta samoefikasnosti za inkluzivno poučavanje te navodi na zaključak kako skupina ispitanika koji su se za rad s učenicima s teškoćama educirali kroz 20 i više sati stručnog usavršavanja postiže najviše rezul-

sive education courses at all (Research question 1). However, these differences are statistically significant with respect to three specific variables related to self-efficacy. In contrast, when we considered the variable “I know how to choose a place for a student in the classroom from where they can follow the lessons better”, we found that the best results were achieved by teachers who attended one to two courses focused on teaching students with special educational needs: unfortunately, this difference was not statistically significant. Teachers who had received no education on how to work with students with special educational needs during their initial education generally performed the worst, except in the case of the variable that is associated with teacher self-efficacy with respect to choosing the place from where a student can follow the lessons better.

In addition, our findings show that teachers who have been trained to work with students with special educational needs for 20 or more hours through in-service training programs generally achieve the highest level of self-efficacy for inclusive teaching, and these differences are statistically significant with respect to six variables of self-efficacy (Research question 2). Teachers who did not undergo any training on how to work with students with special educational needs scored the lowest on all variables of the Self-efficacy for Inclusive Teaching Subscale. Discriminant analyses of the respondents' results regarding initial education identified two discriminant functions, the first of which was statistically significant and can be defined as ‘self-efficacy for immediate support’. Our results show that teachers who attended three or more courses focussed on how to work with students with special educational needs during their initial education showed the best results with respect to self-efficacy for immediate support. Compared to the other groups, the poorest results were observed in the group of respondents who did not attend any courses focused on working with students with special educational needs. The results of the discriminant analysis of respondents' scores regarding the duration of in-service training program focused on working with students with special educational needs also identified two discriminant functions.

tate u većini varijabli, dok učitelji koji se uopće nisu stručno usavršavali postižu najniže rezultate. Druga funkcija nije se pokazala statistički značajnom za diskriminaciju ispitanika.

Možemo zaključiti kako ovi rezultati dopunjuju ranije provedena istraživanja o utjecaju inicijalnog obrazovanja i stručnog usavršavanja za rad s učenicima s teškoćama na stvaranje pozitivnih stavova prema inkluzivnom obrazovanju (Sze, 2009), na uspješnost provedbe inkluzivnog obrazovanja (Kudek Mirošević i Jurčević Lozančić, 2014), bolju pripremljenost za rad s učenicima s teškoćama i razvoj samopouzdanja za provedbu inkluzivne prakse (Lakkala and Määttä, 2011) te na uvjerenost u efikasnost poučavanja učenika s teškoćama (Bhatnagar i Das, 2013).

Važnost i vrijednost inicijalnog obrazovanja i stručnog usavršavanja učitelja za rad u inkluzivnoj nastavi naglašena je u značajnom broju radova (Stančić, 2001; Rakap i Kaczmarek, 2010; Strogilos i Tragoulia, 2013; prema Schmidt i Vrhovnik, 2015) koji ističu kako učiteljima treba trebaju edukacije koje će im pomoći da prepoznaju i procijene potrebe učenika te da planiraju i implementiraju efikasne strategije i podršku učenicima istovremeno surađujući i radeći zajedno s drugim stručnjacima i roditeljima na razvoju i provedbi individualiziranih programa odgoja i obrazovanja. Stoga je od iznimne važnosti nastaviti ulagati u kvalitetne studijske programe koji kroz dovoljan broj kolegija razvijaju kompetencije i podižu razinu samoeфикаsnosti budućih učitelja za provedbu inkluzivnog obrazovanja, kao i u programe stručnog usavršavanja koji će biti koncipirani na način da uzimaju u obzir utvrđene razlike među učiteljima.

Function 1 includes 10 of the 11 variables of the Self-efficacy for Inclusive Teaching Subscale and corresponds to the conclusion that a group of respondents who have been trained to work with students with special educational needs through 20 or more hours of in-service training can achieve the best results in most variables. Teachers who did not attend any in-service training programs achieved the lowest results. The second function did not prove to be a statistically significant discriminant of the respondents.

We can conclude that the results of the present study are consistent with previous research on the impact of initial education and in-service training programs focused on working with students with special educational needs on the creation of positive attitudes towards inclusive education (Sze, 2009), the success of inclusive education (Kudek Mirošević and Jurčević Lozančić, 2014), improved readiness to work with students with special educational needs, the development of self-confidence to implement inclusive practices (Lakkala and Määttä, 2011), as well as the confidence in the effectiveness of teaching students with special educational needs (Bhatnagar and Das, 2013).

The importance and value of initial education and in-service training programs for inclusive teaching has been emphasised in several studies (Stančić, 2001; Rakap and Kaczmarek, 2010; Strogilos and Tragoulia, 2013; according to Schmidt and Vrhovnik, 2015). These studies highlight that teachers need education that will help them identify and assess a student's needs, as well as plan and implement effective strategies and support, while collaborating and working with other professionals and parents to develop and implement individualised education programs. Therefore, it is extremely important to continue investing in high-quality study programs that develop competencies and increase the self-efficacy of future teachers for the implementation of inclusive education through a sufficient number of courses, as well as in-service training programs that are designed to take into account the differences between teachers.

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