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RESEARCH ARTICLE

A SYSTEMATIC REVIEW (SR) AND META-ANALYSIS (MA) RELATED TO TRAINER COMPETENCIES IN HIGHER EDUCATION INSTITUTIONS (HEI) IN GULF COUNTRIES

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ABSTRACT

Background: In higher education, the trainer required some essential competencies. The term competence is understood as skills, knowledge, and characteristics that enable tasks to be carried out effectively and objectives to be accomplished effectively in a given role in the context of the organization's strategic goals. The study's primary purpose is to understand the ongoing educational reforms aiming to facilitate student competencies demands clarification, development, and evaluation of what competencies are required for teachers, university instructors, and trainers. **Methods:** The present study was carried out as a systematic review and meta-analysis. This review adhered to guidelines set by the PRISMA statement for systematic reviews and meta-analysis. We systematically searched Google Scholar, ERIC (education), Scopus, ProQuest, EBSCO HOST, Sociological Abstracts (sociology), and Psych INFO (psychology) with the appropriate key terms databases to identify eligible articles on trainer competencies in HEI with the appropriate key terms. Heterogeneity in effect sizes was assessed for the single-level analyses using Cochrane's Q for significance testing and I^2 to indicate the level of heterogeneity in interpretable form. **Results:** In an initial literature search, a total of 1282 articles were found on the trainer competencies in HEI.Fifty-three studies with measurable skills were finally included for meta-analyses. A total of 23 outcome measures were included in the current review. Many studies reported that the communication skills that developed Teacher competency were 14.63% (95% CI 8.92%-22.10%) followed by interdisciplinary/ collaboration work, which created teacher competency 16.86% (95% CI 10.08% - 24.96%). **Conclusion:** A teaching competency framework that can be used as a starting point for teacher assessment in higher education has been developed and validated. In contemporary society, the career of an academic trainer is special in both place and role. In addition, there is an association among learning materials, teachers, and students in the educational process, so it is essential to train teachers for the career, which should concentrate on equipping them with relevant skills and competencies.

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INTRODUCTION

In higher education, teaching approaches are becoming more centered on students, which require specific teaching competencies (Tigelaar *et al*., 2004). The word competence is defined as a combination of skills, characteristics, and knowledge, making for successful mission fulfillment and successful target accomplishment in a specific role within the organization's adopted strategic goals.

Such composition of skills, personal characteristics, and expertise can be described as the profile of competence required for successful role fulfillment at a work position. This way, the competencies related may be applied to both the work role and the individual carrying out the work (Bie kowska *et al*., 2011). Throughout Higher Education Institutions (HEIs), the question of competence and administration in this group is often of special significance (Bieńkowska *et al*., 2019). Leadership in HEIs (also called educational leadership, university leadership, and academic leadership) influences the achievement of goals and defines these institutions' success. Hence, both the practice and leadership theory in HEIs are

experiencing serious difficulties nowadays (Bolden *et al*., 2008). Zlatic *et al*. (2014) describe teachers' communication competence in their attitudes, motivational dispositions, abilities, skills, and knowledge. It is considered a teacher's ability to choose appropriate behavior to achieve social interaction goals. Communication skills are seen as essential for optimizing student performance and increasing the productivity of teachers in all parts of the teaching process. There is a number of teaching methods available to choose from to meet the goals of a given course. Therefore, the skills relating to its proper selection and use are of particular importance in this field of work. In most Universities, lecturing as a means of information exchange and teaching is still a common way of teaching. Nevertheless, new courses are increasingly present (Nilson, 2010). While over the past few years, there have been studies relating to trainer competencies in HEIs. The analysis of a trainer's competency is essential in the HEIs. Stakeholders in higher education, including the trainer, course developers, instructors, administrators, and leaders, need to familiarize themselves with various applications and learning methods in higher education (Scheffel *et al*., 2014). The word 'attribute' applies to a trait or characteristic of someone that may be part of the essence of the individual or may be formed by life experience. The word 'skills' applies to the capacity to conduct a specific activity or task acceptably. Key elements for employability are skills and attribute. They also contribute to the capacity to adapt awareness of information awareness way to achieve a task or mission. Knowledge is described as the relationship between the opportunity (situation) and capacity (intelligence) to know more; it includes concepts and theory. The word competence applies to basic skills (attitudes, knowledge, and skills) (Abdulwahed *et al*., 2013).

A wide range of defining skills has been required for trainer skills in HEIs. The current systematic review and meta-analysis were conducted to identify trainer competencies' various roles and skills in higher education institutions. Thus, the present study aimed to comprehensively review the different roles and competencies involved in the different types of HEIs and to identify the knowledge, skills, and attitude making up the competencies and their specific roles, followed by identifying the various theoretical foundations applied to study the competencies in higher education and dominant research methods employed to examine the different roles and competencies in HEIs. The present study helps develop and validate a framework in higher education of trainer competencies in Gulf Countries that can be used to design, evaluate, and deliver training through a research-based approach.

METHODOLOGY

Research Objectives: The present study addresses the following main research question: What are the essential trainer competencies in higher education? The primary purpose of the study is to understand the ongoing educational reforms aiming to facilitate student competencies demands clarification, development, and evaluation of what competencies are required for teachers, university instructors, and trainers. The answer to the research question was obtained by performing a systematic review and meta-analysis of the studies available in the field.

Study Design: The present study was carried out as a systematic review and meta-analysis. This review adhered to guidelines set by the PRISMA statement for systematic reviews and meta-analysis.

Inclusion and exclusion criteria: All original research articles published between the years 2000 to 2020 related to trainer competencies in higher education institutions, articles published in the English language, and all study designs, including empirical, qualitative, or quantitative studies, were included in this review.

Exclusion criteria were grey literature, including presented abstracts, letters to the editors, commentaries, systematic review or meta-analysis articles, unavailability of the full text of the article, studies that only had procedural information, and articles published before the year 2000 were also excluded.

Data collection: A literature search was carried out on the following databases, including Google Scholar, ERIC (education), Scopus, ProQuest, EBSCO HOST, Sociological Abstracts (sociology), and PsychINFO (psychology) with the appropriate key terms. Key search terms included "ICT competencies of teachers," "higher education teaching universities," "distance educations," "trainer competencies," "e-learning," "higher education," "institutions," "university," "university instructors," "trainers," "training program," "postsecondary education," and "college." The bibliographic lists were also screened for the included articles.

Data evaluation and analysis: In an initial literature search, a total of 1282 articles were found on the trainer competencies in higher education institutions (HEI). Authors independently reviewed articles related to trainer competencies in higher education institutions for eligibility assessment. Instead, both authors reviewed the complete text of relevant articles for identification inclusion eligibility.

The articles were initially screened based on their title, followed by the article's abstract. The case title and abstract of the articles were irrelevant to the present investigation; these were excluded from the secondary screening. The full text assessed articles were further excluded based on insufficient information regarding the trainer competencies in higher education institutions. The characteristics included in this study were sample size, setting, experimental design, theoretical grounding, and overall findings.

Statistical analysis: Revman software was used for analyses. I^2 statistics were used for the assessment of heterogeneity across studies. Using the fixed-effect model, the pooled effect size estimations were done if heterogeneity was not significant or the random-effect model if there was substantial heterogeneity. Visual inspections of funnel plots investigated publication bias.

RESULTS

Characteristics of studies: In an initial literature search, a total of 1282 articles were found on the trainer competencies in higher education institutions (HEI).

Author, year, (with hyperlinks)	Country	Objective	Type of University	Target population	Sample size (M/F)	Study design	Tool used	Competencies measured	Theory applied	Education type (online vs. face to face)
Spendlove, M. (Spendlove, 2007)	UK	Investigate the role of the Pro-Vice-Chancellor, Rector, or Principal of a university & the competencies (AKB) needed for effective leadership in HEIs	English universities	Pro-vice-Chancellors (PVC)	N=10, PVCs agreed to participate: five from post-1992 universities (former polytechnics) and five from pre-1992 universities.	Qualitative	Sem-structured Interview Interview: Face to Face	Attitudes, knowledge, and behaviors	Transformation al Leadership theory & Competency model by Bartram's (2005)	face to face
Tigelaar *et al* (Tigelaar *et al*., 2004)	Netherland	To develop a framework for teaching competency and validate it	University of Maastricht, Netherlands	Teaching competency in higher education	63	Factor analysis model	Interview	Pedagogical competencies of an online teacher	NR	Online
Guasch *et al* (Guasch *et al*., 2010)	European Universities	To evaluate the educational ICT Competency Framework for University Teachers	The Open University of Catalonia,	Roles of online teachers within the European higher education context,	Professional teacher n =40 Teacher trainer n=40	Focus group & Delphi method	Interview	Essential competancies For higher education	NR	FF
Williams (2003)	America	To identify the roles and competencies needed in distance education in higher education	Distance education programs in American Universities	HE via distance education programs	Professionals n=18 Directors n=7 Distance education professors n=4 Deans n=2 Instructional designers n=2 Coordinator & Manager n=1+1=2	Multistep Delphi analysis	Interview: Face to Face	Competency essential for distance education in HE	NR	FF
Nworie *et al* (Nworie *et al*., 2012)	USA	To evaluate the qualities and qualifications sought in distance education leaders by institutions of higher education in the United States	Multiple teaching universities of the USA that offered distance education	Qualities and Qualificationsought by HE Institutions for distance education	191 Announcements (Dean, director, provost, Vice president, Coordinator & Manager)	Content analysis Qualification coding scheme	Information retrieval the from internet	Competencies and qualifications for distance education	Non-reactive unobtrusive measures (W*et al*.t al, 1981)	Web-based study
Duta &Rafaila(1976)	Romania	To compare the competencies of teachers for students Spain and Romania	Technical Universities from Romania &spain	Teachers and professionals	Teachers n=485	Integrated Quantitive&Qualitative analysis	Written Questionaire	Relational competencies of university teachers	Competence model (Zaharia*et al*, 2008)	Structured interview
Sharma (Sharma, 2015)	India	To develop a competency guide for the "Managers to be".	Management Institution	Functional Managaers&Managemenstudents	Functional Managers n=200 Management students n=500 (Pharma, IT, power)	By acceptable standard methods	Structured interview	Role of HE in developing human capital – competency analysis	NR	Face to Face Interview
Shuttuck *et al* (Shattuck *et al*., 2011)	Maryland	To study inter-institutional competencies to train HE to teach online	Maryland Online faculty, University of Maryland	Adjunct faculty	Faculty n=27 Managers n=13 Faculty traners& Technologists n=13	Certificate for Online Adjunct Teaching	Structured questionnaire	Competencies to train Higher Education Adjunct Faculty to Teach Online	NR	Web-based survey (sent by mail)
Martin *et al* (Martin *et al*., 2019)	USA	To identify the roles of the online instructor and categorize critical competencies for online teaching based	HE Universities in the USA	Faculty Y member, online tutors	Faculty &Oline tutors n=8 (6F/2M)	Three 3 distinct study semi	structured questionnaire	Roles and responsibilities of online instructors	NR	Semi-structured interview
Aydin *et al*. (Aydin, 2005)	Turkey	To identify roles, competencies, and resources for online teaching in Turkey by asking online mentors	Anadolu University	Online mentors	Mentors N-55	Online Teaching Roles, Competencies and Resources Questionnaire" (OTRCRQ)	Survery Questionnaire	Online mentor	Quantitative analysis	Survey

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Briggs (Briggs, 2005)	Scotland	To study the changing roles and competencies of academics	Post-92 Uiversity, Business School	Academicians	Business tutorsn=105 N=59 both online and offline teaching	Snowball sampling method	Questionnaire	Competency of online and offline tutor in business school	NR	Face to face Interview
Darab *et al*. (2006)	USA	To identify and validate distance education (DE) instructor competencies	Distance Teaching universities	Faculty members & Instructors	Mentors & Faculty from -23 Universities, 2-Canada, Netherlands & Australia	Fink's (1998) recommendation	Questionnaire	To evaluate the competency for DE	NR	Face to face Interview
Trung *et al* (Trung & Swierczek, 2009)	Vietnam	To explore the status quo of skills development	4 Teaching universities in Ho Chi Minh City	Students	Department managers n=251 Students n=717	Factor analysis	Questionnaire	To study the graduate competencies & employer needs	5-point Likert scale model	Survey interview
Rieckmann *et al* (2012)	Europe & Latin americ	To identify the key competency for HE in university teaching & learning	4 Teaching universities from Great Britain, Chile, Ecuador, Mexico	Mentors	18 Experts	Delphi analysis	Questionnaire	Key Competency for sustainable development teaching universities	NR	Structured questionnaire survey
Mishra (2005)	India	To identify roles and competencies of academic counselors in DE	Indira Gandhi National Open University (IGNOU)	Academic Counsellors	8 experts	Descriptive measures, ANOVA	Questionnaire	Competency of Academic counselors	NR	Structured questionnaire survey
Thomas & Graham (2019)	USA	To study the Online teaching competencies in observational rubrics	Post-secondary institutions in the USA	Researchers	2 trained researchers	Percentage analysis of coded rubrics	Questionnaire	Competency for successful online teaching	NR	Coding questionnaire
Kirschner *et al* (Kirschner *et al*., 1997)	America	To study the Business Game Learning Environment (BuGLE)	Ou University, Distance Education	Business Faculty	Business mentors n=20	An integrated system approach	Questionnaire	Competencies of faculty in Business DE	NR	Face to face interview
Roberts *et al*. (2018)	South Africa	TInvestigatesthe perceptions of the teaching and research staff	University of South Africa	Distance Educators	Academic teachers and researcher n=10	Factor analysis	Questionnaire	Competency of distance education staff	NR	Email Questionnaire
Williams (Hyatt & Williams, 2011)	USA	To study the competencies necessary for faculty members of doctoral leadership programs	Doctoral problems in Us Universities	Faculty members	Doctoral researcher n=10	Delphi study	Questionnaire	Competencies for faculties teaching doctoral researchers	NR	FF & telephonic interview
Pearson *et al*. (2007)	UAE	Competency skills of teachers In UAE universities	Teaching universities	Teaching faculties	23 Universities n=23	NR	Questionnaire	Competencies of teachers in UAE	NR	FF interview
Hijazi *et al*. (2008)	UAE	To Study the UAE Higher Education Sector in Dubai's Strategic Objectives	United Arab Emirates University	Teacher faculties & Employers	Employees n-1455	Manova and students t-test	Questionnaire	Competencies of teachers in UAE	NR	FF interview
Allen *et al* (Allen *et al*., 2005)	USA	To study the competency of graduate students	Graduate universities of USA	Graduate teachers	Graduate students	Factor analysis	Questionnaire	Competencies of graduate students	New Conceptual model	Survey

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Teixeira and Davey(2010)	Portuguese	Competencies of HE students in venture creation	University of Porto	Rectors & Directors	Under & Postgraduate students n=4413	Multicourse approach	Questionnaire	Competencies of HE students	NR	Survey study
Gulevska&Atanasoska *et al* (Gulevska & Atanasoska, 2015)	Macedonia	Ethical competencies of teachers	Universities of Macedonia	Teachers & Faculty member	Graduate student n=240	Factor analysis	Questionnaire	Competencies of teachers	NR	Questionnaire
Iqdami and Branch (2016)	USA	Examining Multimedia Competencies for Educational Technologists in Higher Education	University of Georgia	Educationist	Experts, specialists, Associates, Bachelors M=71 F=69	Ordinal Logistic Regression	Questionnaire	Educational Technology Multimedia Competencies across Demographics	NR	Online interview
Schultz (2010)	South Africa	To study the HR competencies in a higher education institution	Teaching University in South Africa	Teachers	Permanent teachers n=1363	Principal factor analysis	Questionnaire	HR competencies at a emerged HE university	Quantitative research model	Survey type interview
Alghazo (Alghazo, 2006)	UAE	To study the computer competency of faculty members in college	United Arab Emirates University	Teaching faculty	Permanent teachers	Factor analysis	Questionnaire	Computer competencies at a university's	NR	Survey type interview
Badri *et al* (Badri *et al*., 2016)	Abudhabi, UAE	To study teacher development needs	Teaching schools in Abu Dhabi	Teaching faculties	Permanent teachers n=20	Delphi analysis	Questionnaire	Teaching and learning competencies	TALIS method	FF interview
Warn & Tranter (Warn & Tranter, 2001)	Australia	Measuring Quality in Higher Education: A competency approach	Graduates from the University of South Wales	Graduate Students	A graduate student (1640)	Perception analysis	Questionnaire	Graduate perception of quality in HE	NR	Survey type
Malkawi&Choudry (Malkawi & Choudhry, 2015)	UAE	Smart learning competency	Universities of Arabia	Postgraduate student	Postgraduate students n=120	Paired t-test	Questionnaire	Postgraduate competency	NR	FF interview
Fehér (Fehér, 2014)	UAE	e-learning & mobile competency	Arab open universities	Graduate students	Graduate students	Factor analysis	Questionnaire	e-learning & mobile competency	NR	Online survey
Bawane& Spector (Bawane & Spector, 2009)	USA	To study the Competency of distance education faculty	DE Universities in the USA	Faculty from DE universities	Teaching faculty	Regression analysis	Questionnaire	Competency of distance education faculty	NR	Online survey
Metz & Bezuidenhout (De Metz & Bezuidenhout, 2018)	South Africa	To investigate the role of the e-tutor within an open distance learning (ODL) HE institution	University of South Africa	E- tutors	E- tutors n-164	Factor analysis	Questionnaire	Competence analysis of the roles and competencies of e-tutors at an open distance learning institution	NR	Online survey
Gonzales (Patiño-González, 2009)	Mexico	To study the ethical and citizenship competencies of HE students	Graduate schools in Mexico	Undergradu studentdens	UG students n=4920	QEP assessment	Structured survey	Ethical and citizenship competencies of HE students	NR	Direct survey

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Thach & Murphy (Thach & Murphy, 1995)	USA &Canda	To identify the roles and competencies of DR professionals	Tutors from Institutions of Canada & USA	DE professionals	DE educators & educators	Modified 2 round Delphi analysis	Structured questionnaire	Competencies of DE professionals	NR	FF & Online interview
De pablos Pons (de Pablos Pons, 2010)	Spain	To study the IT and digital competencies	University of Seville	It professors	IT professors and professionals n=1000	Factor analysis	Structured questionnaire	Competencies of Digital & IT professionals	NR	Online interview
Gray *et al* (Gray *et al*., 2004)	7 European countries	Teachers and Trainers: Innovative Practices, Skills a, nd Competencies in the use of eLearning	Teacher Universities	Teachers & Professors	Teachers & Professors n=56	Grid outlining procedure	Questionnaire	Competencies of teachers and trainers	NR	Semi-structured interview
Smith & Wolverton (Smith & Wolverton, 2010)	USA	To perform a qualitative higher education leadership competencies model	University of California	Teachers, Professionals Dean, Instructors	327 athletics directors, 322 senior student affairs officers, and 322 chief academic officers.	Nomological network creation & factor analysis	Structured questionnaire	A quantitative model for competencies	Likert type scale model	Online interview
Mansour (Mansour, 2020)	UAE	To study the Quality in Higher Education in UAE	UAE University	Teaching professionals	HE professors of UAE University	Quality assurance approach	Questionnaire	HE teaching competencies	NR	FF interview
Lazy(Lazy, 2015)	Hungary	To study the role HE of institutions in students' competencies	ÓbudaUniversity's Keleti Faculty of Business and Management	Employees & Employers	Students (234) 93 male and 90 female students	't' testing method	Questionnaire	HE institution competencies	NR	Online interview
Velasco *et al* (Velasco *et al*., 2014)	UAE & Europe	To study the faculty perspective of competency development in HE	Universidad Europea de Madrid, INTI & Universidad de AnhembiMoroumbi	Faculty members	Faculty members, n=729	Likert 5-point scale	Questionnaire	HE institution competencies a faculty perspective	NR	Survey
Gonzalez *et al* (González *et al*., 2011)	Colombia	Roles function a,n d necessary competencies for teachers' assessment in b- learning contexts	HE universities in Columbia	Teachers	Faculty & teachers	Proactive approach study	Questionnaire	Competences for teachers' assessment in b- learning contexts	Grounded Theory	Online survey
Blau&Inbal(Blau & Shamir-Inbal, 2017)	Isreal& UAE	Digital competencies and long-term ICT integration in school culture	High &elemintary schools of Arabic and Arabic schools	Principal, teachers, high school facilitators	School students Israeli school students, 392Arabicc schools	SPSS analysis	Questionnaire	Importance of ICT integration in teaching and learning	NR	Email survey
Modafar&Guessom(Ati & Guessoum, 2010)	UAE	To study the e-learning competencies in UAE Universities	Abu Dhabi University & American University of Sharjah	Professors	e-learning students	Factor analysis	Questionnaire	e-learning competencies	NR	Online survey
Ali Hussein H. Mohammed and Abdurrahman Ghaleb Almekhlafi,(Ali Hussein H. Mohammed & Abdurrahman Ghaleb Almekhlafi, 2017)	UAE	To study the English language teachers perception of ICT competencies	Abu Dhabi Educational Council	English teachers	English teachers n=13	SPSS analysis	Questionnaire	ICT competency of English language teacher	NR	Survey of questionnaire

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Major and Palmet(Major & Palmer, 2006)	USA	To study the competency of faculty and content knowledge	Montana State University	Full professors	Professors n=47	Grounded conceptual model	Questionnaire	Faculty knowledge content and competency	Basic Quality design (Merriam, 1998)	Semi-structured interview
Ritzhaupt and Swapna Kumar (Ritzhaupt & Kumar, 2015)	India	To study the competencies of Instructional designer	Instructional designers from different institutions	IT professionals	Professionals n=45	Constant Comparative method	Survey of questionnaire	To study the competencies of Instructional designer	NR	Online Interview
Snoussi (2019)	UAE	Learning Management competencies	Al Ghurair Unversity University of Sharjah Al-Ain University of Sciences and Technology Ajman University	Management faculties	Faculties n=34	NR	Questionnaire	ICT tool competency for learning and management	NR	Online survey
Egan and Akdere(Egan & Akdere, 2004)	USA	To study the learning role and competencies between professionals and students	Central US universities	Professionals and students	professionals and students	Delphi analysis	Questionnaire	Learning role and competencies between professionals and students	NR	Online survey
Keinanen *et al* (Keinänen *et al*., 2018)	Finland	TO measure innovation competencies in HE	Finnish teaching universities	Students	Students n=495	Factor model	Questionnaire	Competency of HE students	NR	Survey
Sullivan (O'Sullivan, 2017)	UAE	Student sustainable development in UAE private universities	Private universities of UAE	Students	Student n=20	Factor model	Questionnaire	Student development competency	Social change model	Online survey
Soussi(Soussi, 2020)	UAE	Innovation teaching competencies	Mohammad V University of Abu Dhabi	Teachers	Teachers n=26	Likert scale analysis	Questionnaire	Innovation & Pedagogical competency	NR	Survey
Abdallah (Abdallah, 2018)	UAE	Parents Perceptions of e-learning in Abu Dhabi schools	Schools in Abudhabi& Ai-Ain	Parents	Parents n=1520	Test-retest method (Spearman-Brown Formula)	Questionnaire	Parents perception of e-learning	NR	Survey

Table 1. Communication skills

Study	Sample size	Proportion (%)	95% CI	Weight (%)	
				Fixed	Random
Duta &Rafaila (2014)	13	15.385	1.921 to 45.447	11.29	11.29
Tigelaar *et al*	19	10.526	1.301 to 33.138	16.13	16.13
Hijazi *et al*	15	13.333	1.658 to 40.460	12.90	12.90
Gulevska and Atanasoska	14	14.286	1.779 to 42.813	12.10	12.10
Warn and Tranter	10	10.000	0.253 to 44.502	8.87	8.87
Smith and Wolverton	30	16.667	5.642 to 34.721	25.00	25.00
Lazy	16	6.250	0.158 to 30.232	13.71	13.71
Total (fixed effects)	117	14.627	8.924 to 22.095	100.00	100.00
Total (random effects)	117	14.627	8.985 to 21.361	100.00	100.00

Articles related to trainer competencies in higher education institutions were independently reviewed by hours for eligibility assessment. Instead, both authors reviewed the complete text of relevant articles for identification inclusion eligibility. The articles were initially screened based on their title, followed by the abstract of the article. The case title and abstract of the articles were irrelevant to the present investigation; these were excluded from the secondary screening. The full text assessed articles were further excluded based on insufficient information regarding the trainer competencies in higher education institutions. After further screening, a total number of 53 studies with measurable skills were finally included for meta-analyses. The characteristics included in this study were author (year), country, objective, target population, sample size, study design, tool used, competencies measured, theory applied, and education type (Table 1).

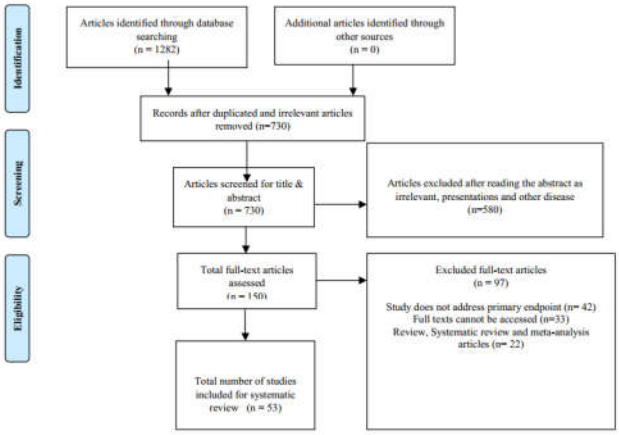


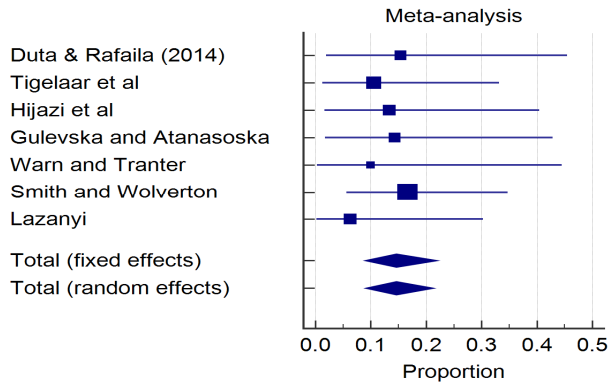
Figure 1. PRISMA flow chart

Teachers/Teaching Competency: A total of 23 competencies outcome measures were included. Seven studies reported communication skills, the proportion of communication skills cases that established Teacher competency was 14.63% (95% CI 8.92% - 22.10%). Communication ski have insignificant influence on the heterogeneity in meta-regression (p = 0.982). Due to a smaller number of studies providing information for communication skills (n = 7). Four studies reported the professional skills, the proportion of cases of professional skills that established Teacher competency was 7.92% (95% CI 2.84% - 16.81%). Professional skills have an insignificant influence on the heterogeneity in meta-regression (p = 0.787). Three studies reported the interpersonal skills, the proportion of cases of interpersonal skills that established Teacher competency was 12.37% (95% CI 4.34% - 23.73%). Interpersonal skills have an insignificant influence on the heterogeneity in meta-regression (p = 0.789). Two studies reported student counseling, the proportion of cases of student counseling that established Teacher competency was 11.11% (95% CI 2.92% - 23.65%). Student counselling have an insignificant influence to heterogeneity in meta-regression (p = 0.356). Two studies reported student support & participation, the proportion of cases of Student support & participation that established Teacher competency was 17.55% (95% CI 6.82% - 31.91%). Student support & participation have an insignificant influence on the heterogeneity in meta-regression (p = 0.983). Seven studies reported the Subject Knowledge, the proportion of cases of Subject Knowledge that established Teacher competency was 9.84% (95% CI 5.14% - 15.84%). Subject Knowledgehave an insignificant influence toon the heterogeneity in meta-regression (p = 0.760). Two studies reported a positive attitude. The proportion of cases of positive attitude that established Teacher competency was 8.09% (95% CI 1.56% - 19.06%). Positive attitudes have an insignificant influence on the heterogeneity in meta-regression (p = 0.842). Three studies reported the evaluator, the proportion of cases of evaluators that developed Teacher competency was 11.35% (95% CI 3.37% - 23.21%). Evaluatorhave an insignificant influence to the heterogeneity in meta-regression (p = 0.815). Five studies reported the Learner/updated knowledge, the proportion of cases of Learner/updated knowledge that developed Teacher competency was 13.35% (95% CI 6.56% - 23.25%). Learner/updated knowledge have an insignificant influence to the heterogeneity in meta-regression (p = 0.571). Five studies reported the organizing competency, the proportion of cases of organizing competency that developed Teacher competency was 12.73% (95% CI 5.67% - 22.02%).

Organizing competency has an insignificant influence the on heterogeneity in meta-regression (p = 0.790). Three studies reported the Cooperation with colleagues, Participatory competency, the proportion of cases of Cooperation with colleagues, Participatory competency that developed Teacher competency was 11.75% (95% CI 5.00% - 20.86%). Cooperation with colleagues, Participatory competency has an insignificant influence on the heterogeneity in meta-regression (p = 0.697). Six studies reported the Interdisciplinary / collaboration work, the proportion of Interdisciplinary/collaboration work cases that developed Teacher competency was 16.86% (95% CI 10.08% - 24.96%). Interdisciplinary / collaboration work have an insignificant influence to the heterogeneity in meta-regression (p = 0.441). Two studies reported the Critical Thinking, the proportion of Critical Thinking cases that established Teacher competency was 8.95% (95% CI 2.11% - 19.86%). Critical Thinkinghave an insignificant influence on the heterogeneity in meta-regression (p = 0.298). Three studies reported the Self-motivation and motivating others; the proportion of cases of Self-motivation and motivating others that developed Teacher competency was 12.43% (95% CI 3.77% - 25.14%). Self-motivation and motivating others have an insignificant influence on the heterogeneity in meta-regression (p = 0.255). Two studies reported the Ambiguity and frustration tolerance, the proportion of case city and frustration tolerance that escapes established Teacher competency was 5.11% (95% CI 0.96% - 12.27%). Ambiguity and frustration tolerance have an insignificant influence on the heterogeneity in meta-regression (p = 0.877). Two studies reported the Planning and realizing projects, the proportion of cases of Planning and realising projects that developed Teacher competency was 7.59% (95% CI 1.39% - 18.16%). Planning and realizing projects have an insignificant influence on the heterogeneity in meta-regression (p = 0.456). Six studies reported the Handling of intercultural/ social relationships, the proportion of cases of Handling of intercultural/ social relationships that developed Teacher competency was 10.13% (95% CI 4.86% - 17.04%). Handling of intercultural/ social relationships have has an insignificant influence on the heterogeneity in meta-regression (p = 0.863). Four studies reported learning new skills. The proportion of cases of learning new skills that established Teacher competency was 13.81% (95% CI 6.47% - 23.34%)—learnings found to have an insignificant influence the heterogeneity in meta-regression (p = 0.779).

Test for heterogeneity

Q	1.0820
DF	6
Significance level	P = 0.9823
I^2 (inconsistency)	0.00%
95% CI for I^2	0.00 to 0.00



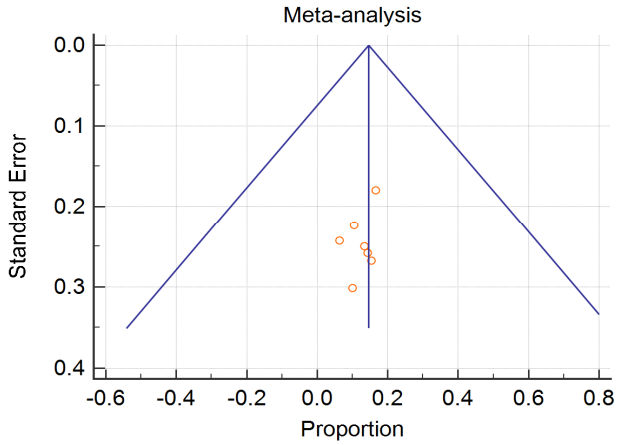
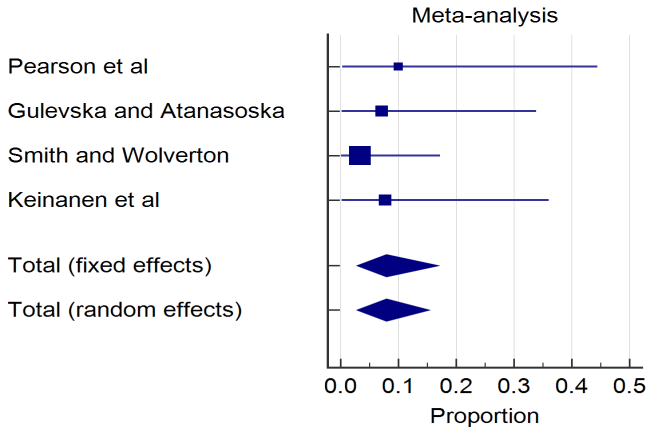


Table 2. Professional skills

Study	Sample size	Proportion (%)	95% CI	Weight (%)	
				Fixed	Random
Pearson *et al*	10	10.000	0.253 to 44.502	15.49	15.49
Gulevska and Atanasoska	14	7.143	0.181 to 33.868	21.13	21.13
Smith and Wolverton	30	3.333	0.0844 to 17.217	43.66	43.66
Keinanen *et al*	13	7.692	0.195 to 36.030	19.72	19.72
Total (fixed effects)	67	7.921	2.842 to 16.814	100.00	100.00
Total (random effects)	67	7.921	2.829 to 15.280	100.00	100.00

Test for heterogeneity

Q	1.0609
DF	3
Significance level	P = 0.7865
I^2 (inconsistency)	0.00%
95% CI for I^2	0.00 to 63.49



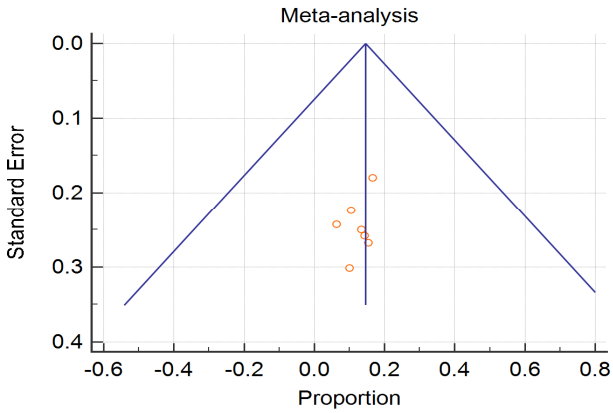


Table 3. Interpersonal skills

Study	Sample size	Proportion (%)	95% CI	Weight (%)	
				Fixed	Random
Duta &Rafaila (2014)	13	15.385	1.921 to 45.447	32.56	32.56
Gulevska and Atanasoska	14	7.143	0.181 to 33.868	34.88	34.88
Keinanen *et al*	13	7.692	0.195 to 36.030	32.56	32.56
Total (fixed effects)	40	12.366	4.322 to 25.997	100.00	100.00
Total (random effects)	40	12.366	4.341 to 23.728	100.00	100.00

Test for heterogeneity

Q	0.4723
DF	2
Significance level	P = 0.7897
I^2 (inconsistency)	0.00%
95% CI for I^2	0.00 to 85.79

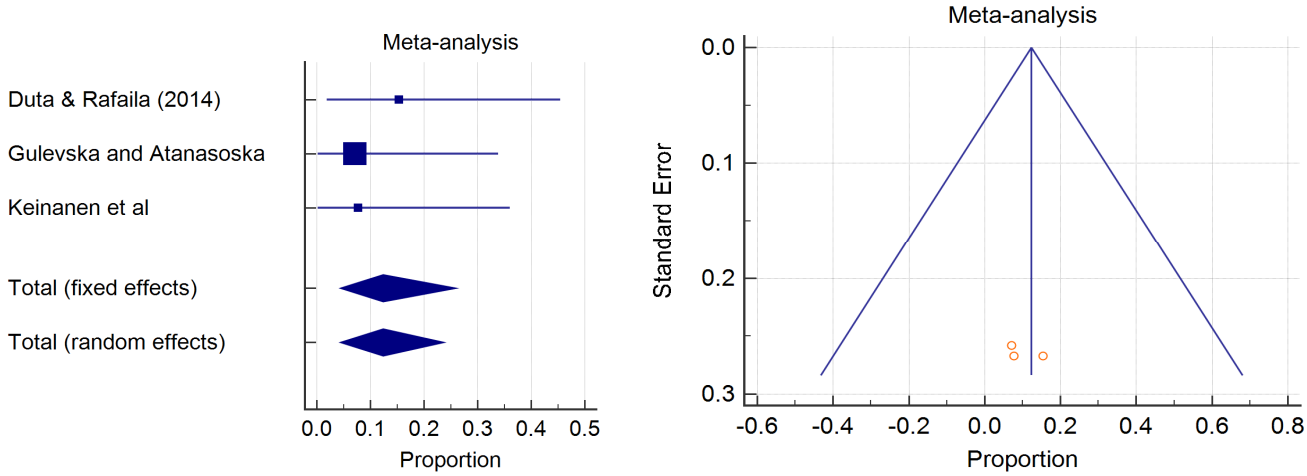


Table 4. Student counseling

Study	Sample size	Proportion (%)	95% CI	Weight (%)	
				Fixed	Random
Duta &Rafaila (2014)	13	15.385	1.921 to 45.447	41.18	41.18
Tigelaar *et al*.	19	5.263	0.133 to 26.028	58.82	58.82
Total (fixed effects)	32	11.112	2.959 to 26.629	100.00	100.00
Total (random effects)	32	11.112	2.922 to 23.654	100.00	100.00

Test for heterogeneity

Q	0.8518
DF	1
Significance level	P = 0.3560
I^2 (inconsistency)	0.00%
95% CI for I^2	0.00 to 0.00

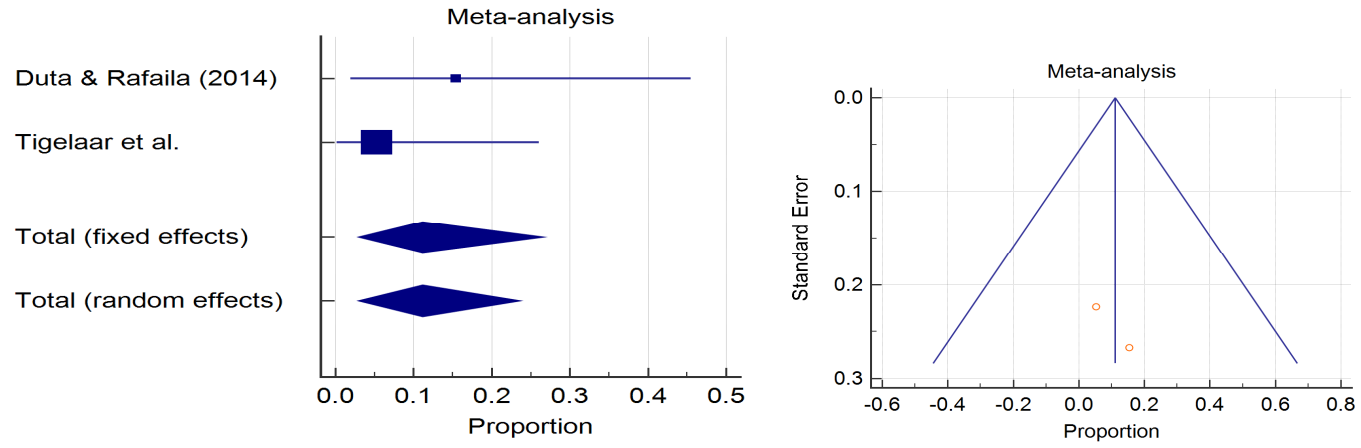
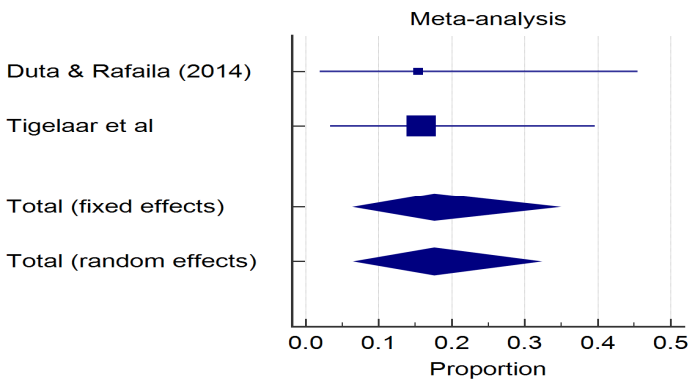


Table 5. Student support & participation

Study	Sample size	Proportion (%)	95% CI	Weight (%)	
				Fixed	Random
Duta &Rafaila (2014)	13	15.385	1.921 to 45.447	41.18	41.18
Tigelaar *et al*	19	15.789	3.383 to 39.578	58.82	58.82
Total (fixed effects)	32	17.547	6.700 to 34.415	100.00	100.00
Total (random effects)	32	17.547	6.817 to 31.909	100.00	100.00

Test for heterogeneity

Q	0.0004663
DF	1
Significance level	P = 0.9828
I^2 (inconsistency)	0.00%
95% CI for I^2	0.00 to 0.00



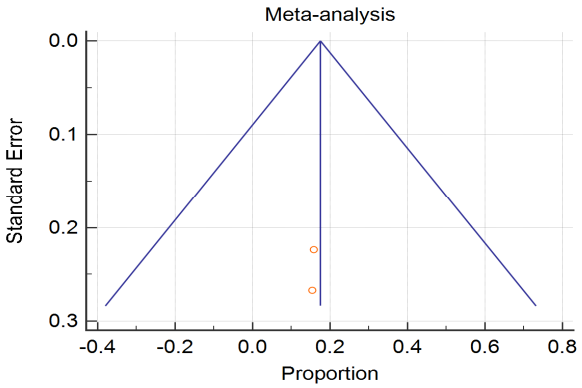
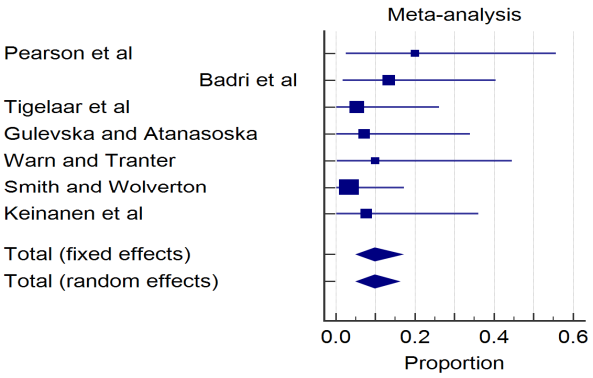


Table 6. Subject Knowledge

Study	Sample size	Proportion (%)	95% CI	Weight (%)	
				Fixed	Random
Pearson *et al*	10	20.000	2.521 to 55.610	9.32	9.32
Badri *et al*	15	13.333	1.658 to 40.460	13.56	13.56
Tigelaar *et al*	19	5.263	0.133 to 26.028	16.95	16.95
Gulevska and Atanasoska	14	7.143	0.181 to 33.868	12.71	12.71
Warn and Tranter	10	10.000	0.253 to 44.502	9.32	9.32
Smith and Wolverton	30	3.333	0.0844 to 17.217	26.27	26.27
Keinanen *et al*	13	7.692	0.195 to 36.030	11.86	11.86
Total (fixed effects)	111	9.838	5.122 to 16.692	100.00	100.00
Total (random effects)	111	9.838	5.145 to 15.835	100.00	100.00

Test for heterogeneity

Q	3.3798
DF	6
Significance level	P = 0.7599
I^2 (inconsistency)	0.00%
95% CI for I^2	0.00 to 49.04



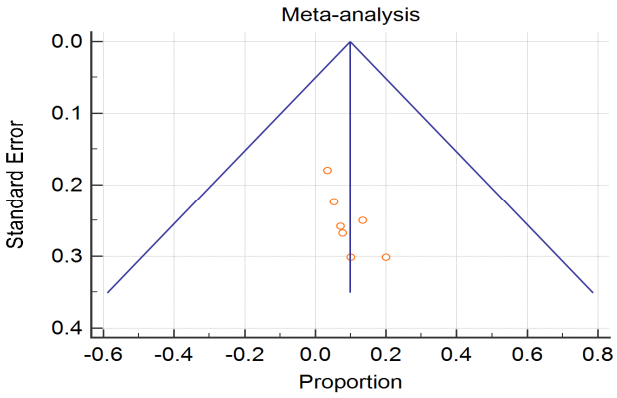
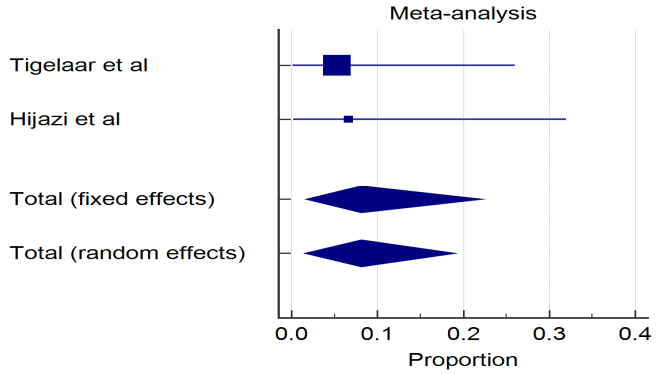


Table 7. Positive attitude

Study	Sample size	Proportion (%)	95% CI	Weight (%)	
				Fixed	Random
Tigelaar *et al*	19	5.263	0.133 to 26.028	55.56	55.56
Hijazi *et al*	15	6.667	0.169 to 31.948	44.44	44.44
Total (fixed effects)	34	8.093	1.647 to 22.150	100.00	100.00
Total (random effects)	34	8.093	1.558 to 19.061	100.00	100.00

Test for heterogeneity

Q	0.03964
DF	1
Significance level	P = 0.8422
I^2 (inconsistency)	0.00%
95% CI for I^2	0.00 to 0.00



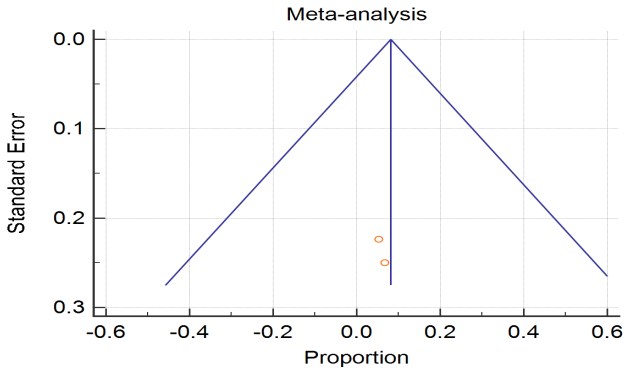
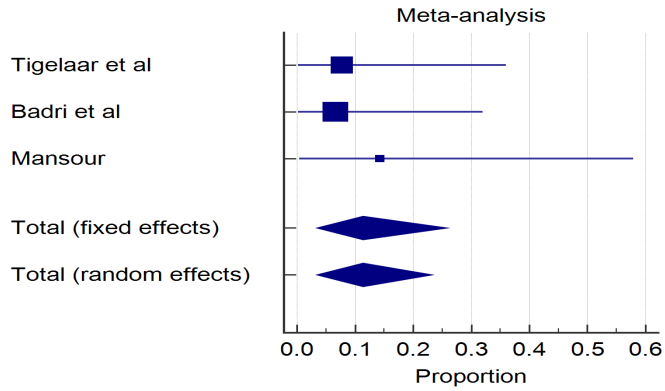


Table 8. Evaluator

Study	Sample size	Proportion (%)	95% CI	Weight (%)	
				Fixed	Random
Tigelaar *et al*	13	7.692	0.195 to 36.030	36.84	36.84
Badri *et al*	15	6.667	0.169 to 31.948	42.11	42.11
Mansour	7	14.286	0.361 to 57.872	21.05	21.05
Total (fixed effects)	35	11.353	3.388 to 25.850	100.00	100.00
Total (random effects)	35	11.353	3.372 to 23.208	100.00	100.00

Test for heterogeneity

Q	0.4103
DF	2
Significance level	P = 0.8145
I^2 (inconsistency)	0.00%
95% CI for I^2	0.00 to 83.65



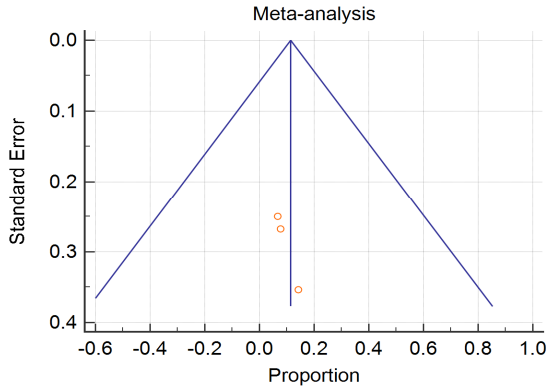
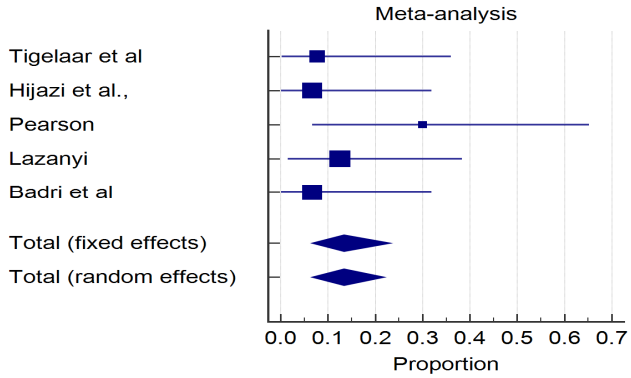


Table 9. Learner/updated knowledge

Study	Sample size	Proportion (%)	95% CI	Weight (%)	
				Fixed	Random
Tigelaar *et al*	13	7.692	0.195 to 36.030	18.92	18.92
Hijazi *et al*.,	15	6.667	0.169 to 31.948	21.62	21.62
Pearson	10	30.000	6.674 to 65.245	14.86	14.86
Lazanyi	16	12.500	1.551 to 38.348	22.97	22.97
Badri *et al*	15	6.667	0.169 to 31.948	21.62	21.62
Total (fixed effects)	69	13.346	6.555 to 23.253	100.00	100.00
Total (random effects)	69	13.346	6.612 to 21.975	100.00	100.00

Test for heterogeneity

Q	2.9240
DF	4
Significance level	P = 0.5706
I^2 (inconsistency)	0.00%
95% CI for I^2	0.00 to 73.22



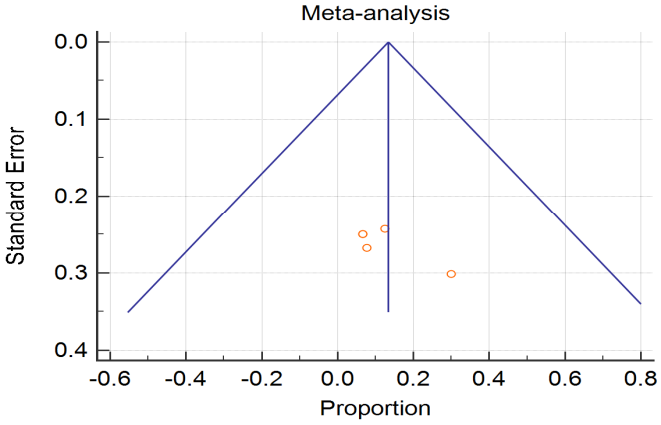
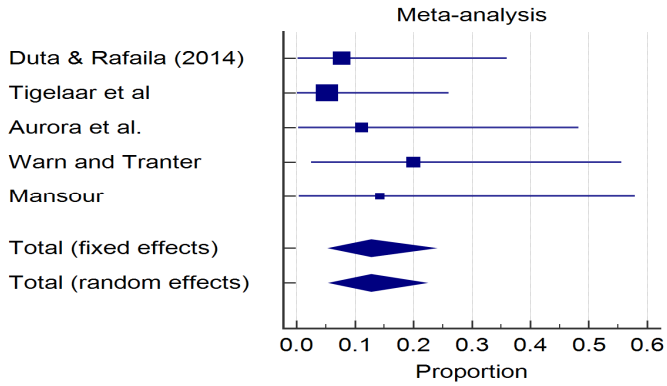


Table 10. Organizing competency

Study	Sample size	Proportion (%)	95% CI	Weight (%)	
				Fixed	Random
Duta &Rafaila (2014)	13	7.692	0.195 to 36.030	22.22	22.22
Tigelaar *et al*	19	5.263	0.133 to 26.028	31.75	31.75
Aurora *et al*.	9	11.111	0.281 to 48.250	15.87	15.87
Warn and Tranter	10	20.000	2.521 to 55.610	17.46	17.46
Mansour	7	14.286	0.361 to 57.872	12.70	12.70
Total (fixed effects)	58	12.737	5.672 to 23.544	100.00	100.00
Total (random effects)	58	12.737	5.719 to 22.017	100.00	100.00

Test for heterogeneity

Q	1.7064
DF	4
Significance level	P = 0.7896
I^2 (inconsistency)	0.00%
95% CI for I^2	0.00 to 54.11



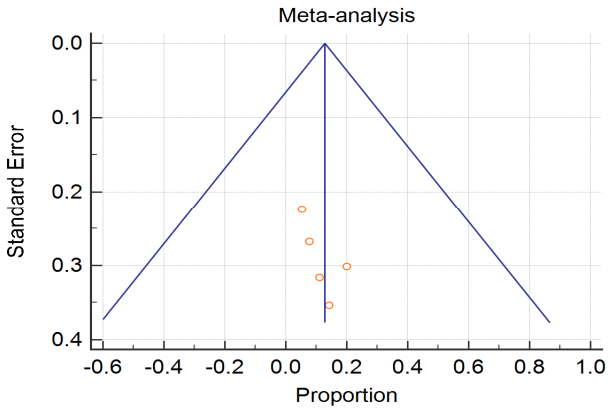
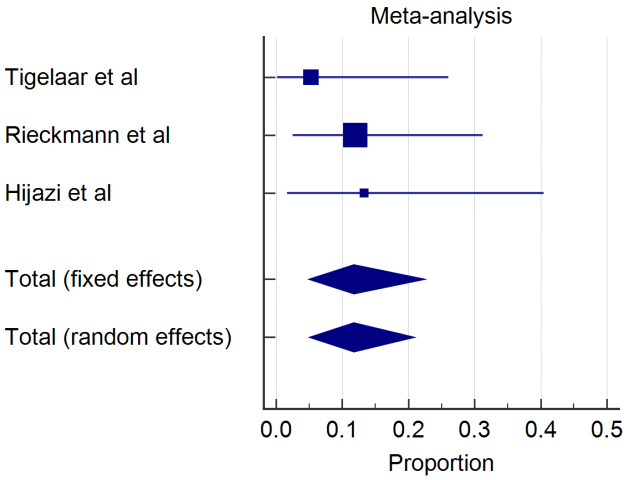


Table 11. Cooperation with colleagues, Participatory competency

Study	Sample size	Proportion (%)	95% CI	Weight (%)	
				Fixed	Random
Tigelaar *et al*	19	5.263	0.133 to 26.028	32.26	32.26
Rieckmann *et al*	25	12.000	2.547 to 31.219	41.94	41.94
Hijazi *et al*	15	13.333	1.658 to 40.460	25.81	25.81
Total (fixed effects)	59	11.749	4.963 to 22.451	100.00	100.00
Total (random effects)	59	11.749	4.995 to 20.861	100.00	100.00



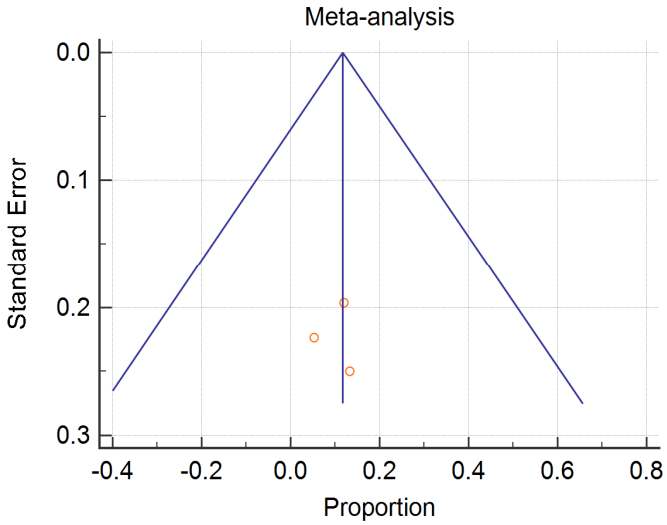
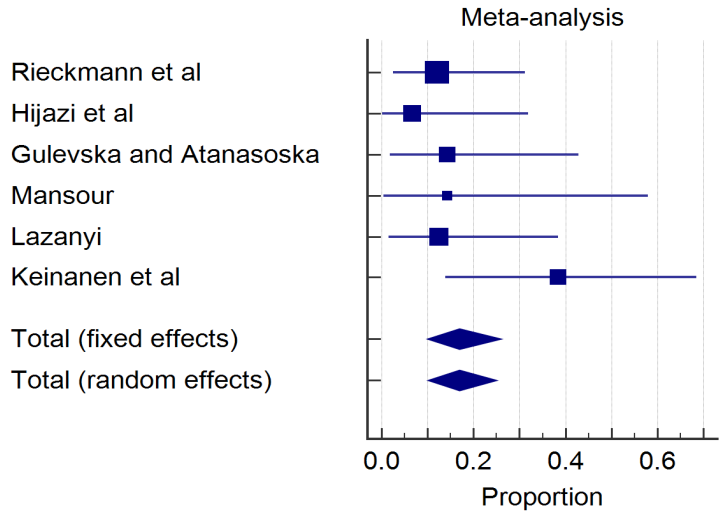


Table 12. Interdisciplinary / collaboration work

Study	Sample size	Proportion (%)	95% CI	Weight (%)	
				Fixed	Random
Rieckmann *et al*	25	12.000	2.547 to 31.219	27.08	27.08
Hijazi *et al*	15	6.667	0.169 to 31.948	16.67	16.67
Gulevska and Atanasoska	14	14.286	1.779 to 42.813	15.63	15.63
Mansour	7	14.286	0.361 to 57.872	8.33	8.33
Lazanyi	16	12.500	1.551 to 38.348	17.71	17.71
Keinanen *et al*	13	38.462	13.858 to 68.422	14.58	14.58
Total (fixed effects)	90	16.859	9.990 to 25.869	100.00	100.00
Total (random effects)	90	16.859	10.081 to 24.960	100.00	100.00

Test for heterogeneity

Q	4.7980
DF	5
Significance level	P = 0.4410
I^2 (inconsistency)	0.00%
95% CI for I^2	0.00 to 74.32



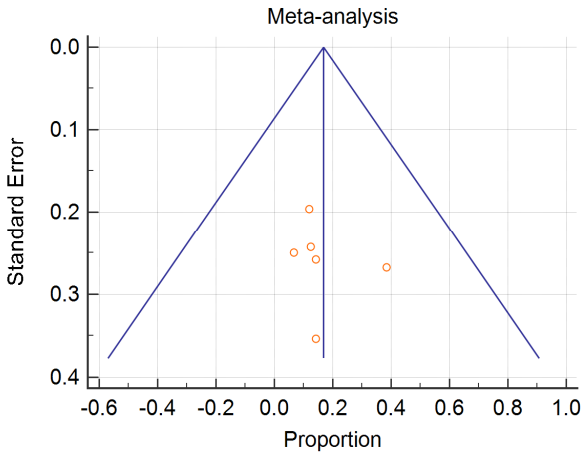


Table 13. Critical Thinking

Study	Sample size	Proportion (%)	95% CI	Weight (%)	
				Fixed	Random
Rieckmann *et al*	25	4.000	0.101 to 20.352	61.90	60.99
Hijazi *et al*	15	13.333	1.658 to 40.460	38.10	39.01
Total (fixed effects)	40	8.859	2.314 to 21.761	100.00	100.00
Total (random effects)	40	8.945	2.106 to 19.857	100.00	100.00

Test for heterogeneity

Q	1.0837
DF	1
Significance level	P = 0.2979
I^2 (inconsistency)	7.72%
95% CI for I^2	0.00 to 0.00

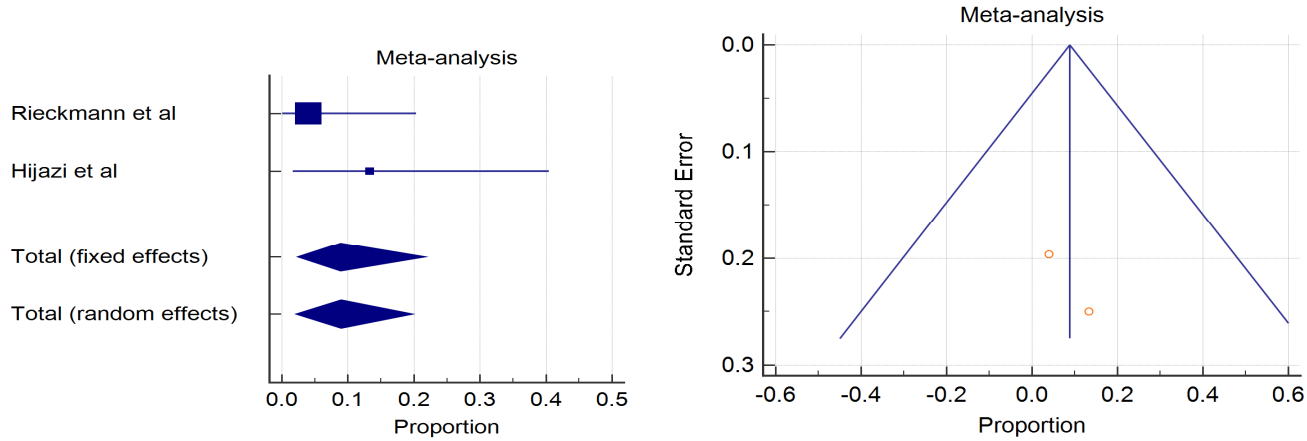


Table 14. Self-motivation and motivating others

Study	Sample size	Proportion (%)	95% CI	Weight (%)	
				Fixed	Random
Rieckmann *et al*	25	4.000	0.101 to 20.352	50.98	45.69
Aurora *et al*	9	22.222	2.814 to 60.009	19.61	22.92
Gulevska and Atanasoska	14	14.286	1.779 to 42.813	29.41	31.39
Total (fixed effects)	48	11.590	4.333 to 23.652	100.00	100.00
Total (random effects)	48	12.429	3.771 to 25.136	100.00	100.00

Test for heterogeneity

Q	2.7368
DF	2
Significance level	P = 0.2545
I^2 (inconsistency)	26.92%
95% CI for I^2	0.00 to 97.55

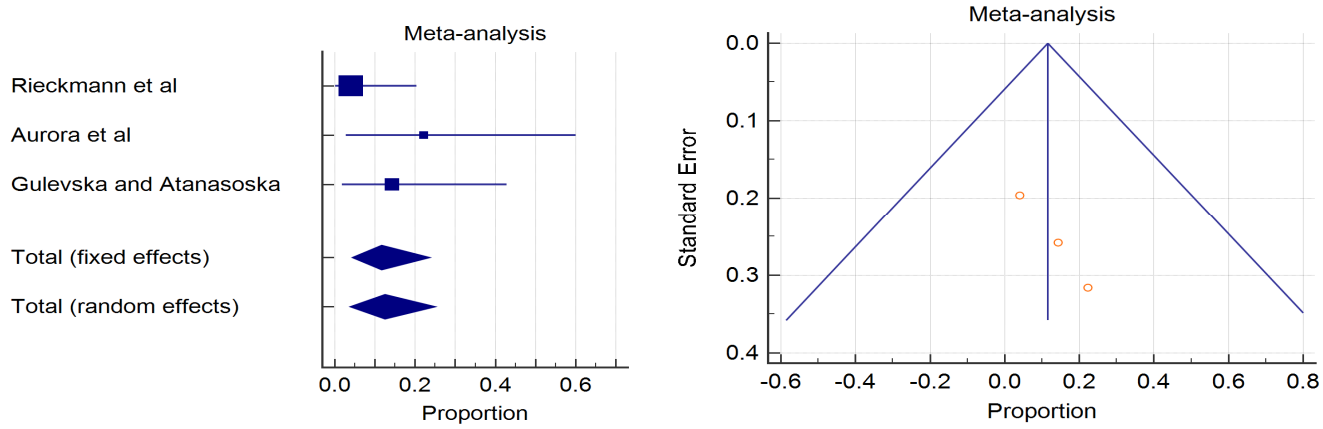


Table 15. Ambiguity and frustration tolerance

Study	Sample size	Proportion (%)	95% CI	Weight (%)	
				Fixed	Random
Rieckmann *et al*	25	4.000	0.101 to 20.352	45.61	45.61
Smith and Wolverton	30	3.333	0.0844 to 17.217	54.39	54.39
Total (fixed effects)	55	5.111	1.033 to 14.408	100.00	100.00
Total (random effects)	55	5.111	0.962 to 12.269	100.00	100.00

Test for heterogeneity

Q	0.02381
DF	1
Significance level	P = 0.8774
I^2 (inconsistency)	0.00%
95% CI for I^2	

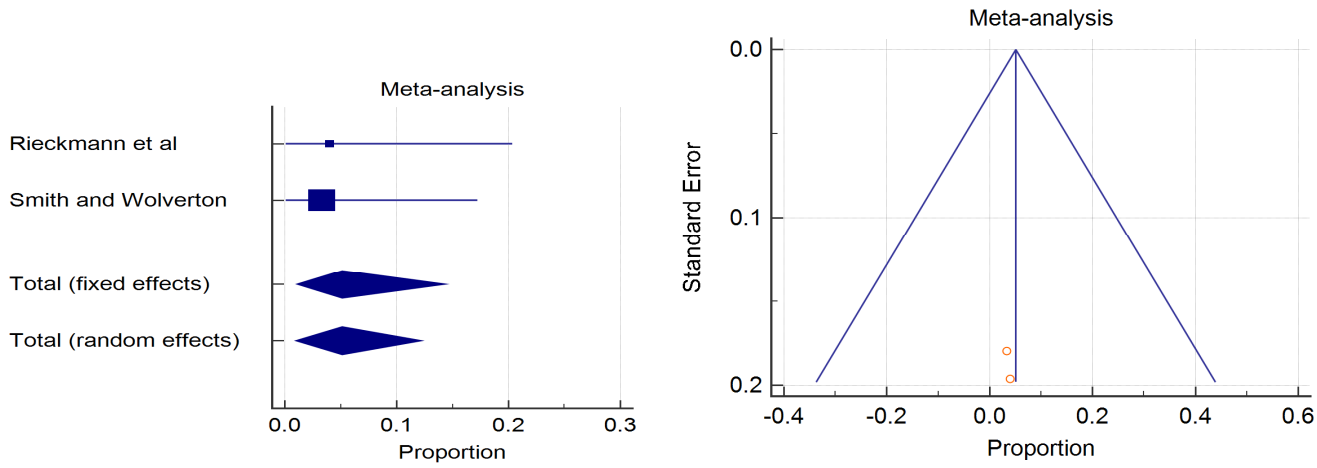


Table 16. Planning and realising projects

Study	Sample size	Proportion (%)	95% CI	Weight (%)	
				Fixed	Random
Rieckmann *et al*	25	4.000	0.101 to 20.352	70.27	70.27
Warn and Tranter	10	10.000	0.253 to 44.502	29.73	29.73
Total (fixed effects)	35	7.590	1.479 to 21.216	100.00	100.00
Total (random effects)	35	7.590	1.386 to 18.159	100.00	100.00

Test for heterogeneity

Q	0.5567
DF	1
Significance level	P = 0.4556
I^2 (inconsistency)	0.00%
95% CI for I^2	0.00 to 0.00

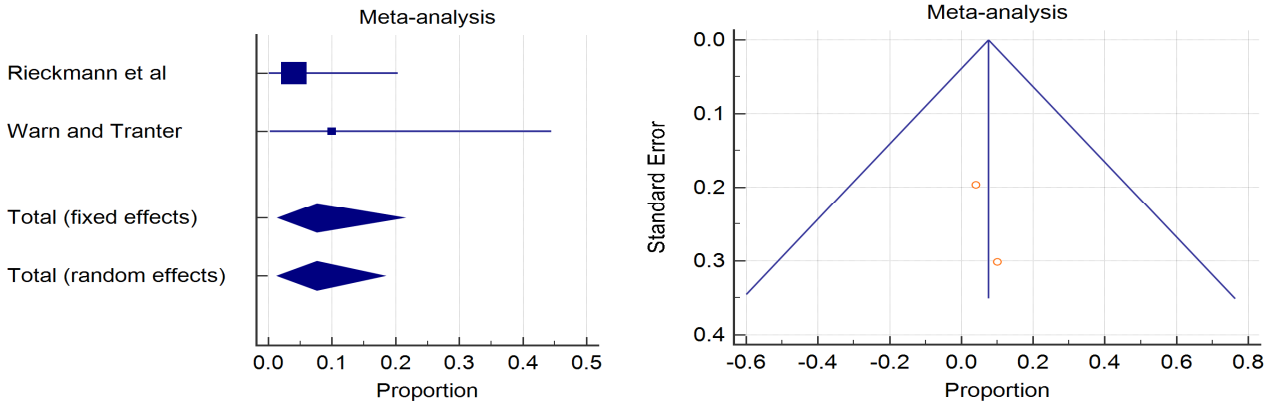


Table 17. Handling of intercultural/ social relationships

Study	Sample size	Proportion (%)	95% CI	Weight (%)	
				Fixed	Random
Rieckmann *et al*	25	4.000	0.101 to 20.352	27.96	27.96
Gulevska and Atanasoska	14	7.143	0.181 to 33.868	16.13	16.13
Gonzales	7	14.286	0.361 to 57.872	8.60	8.60
Badri *et al*.,	15	6.667	0.169 to 31.948	17.20	17.20
Duta &Rafaila (2014)	13	15.385	1.921 to 45.447	15.05	15.05
Keinanen *et al*	13	7.692	0.195 to 36.030	15.05	15.05
Total (fixed effects)	87	10.130	4.837 to 18.130	100.00	100.00
Total (random effects)	87	10.130	4.860 to 17.040	100.00	100.00

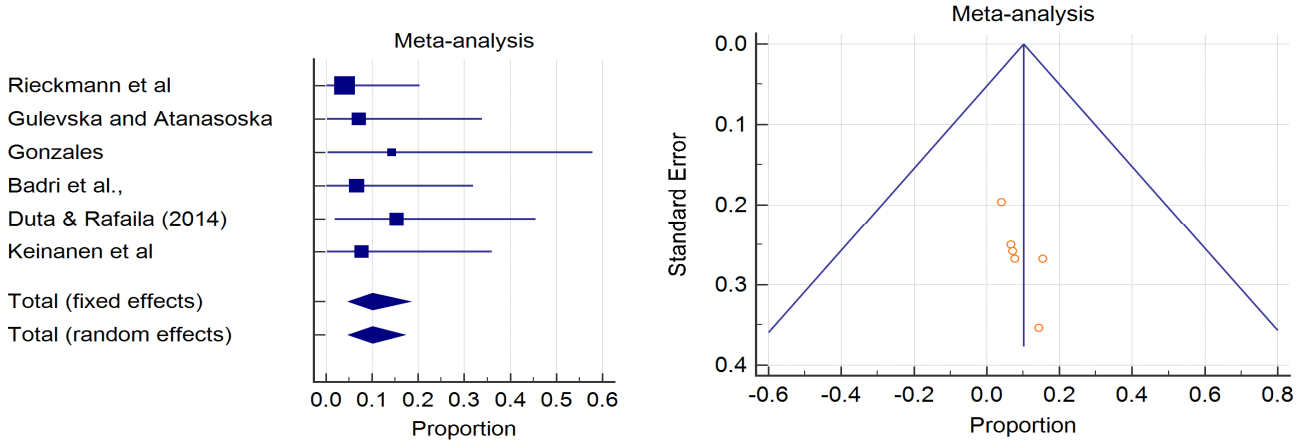


Table 18. Learning new skills

Study	Sample size	Proportion (%)	95% CI	Weight (%)	
				Fixed	Random
Hijazi *et al*	15	6.667	0.169 to 31.948	25.40	25.40
Pearson *et al*	10	10.000	0.253 to 44.502	17.46	17.46
Badri *et al*	15	20.000	4.331 to 48.089	25.40	25.40
Tigelaar *et al*.,	19	10.526	1.301 to 33.138	31.75	31.75
Total (fixed effects)	59	13.808	6.411 to 24.827	100.00	100.00
Total (random effects)	59	13.808	6.473 to 23.339	100.00	100.00

Test for heterogeneity

Q	1.0908
DF	3
Significance level	P = 0.7793
I^2 (inconsistency)	0.00%
95% CI for I^2	0.00 to 64.49

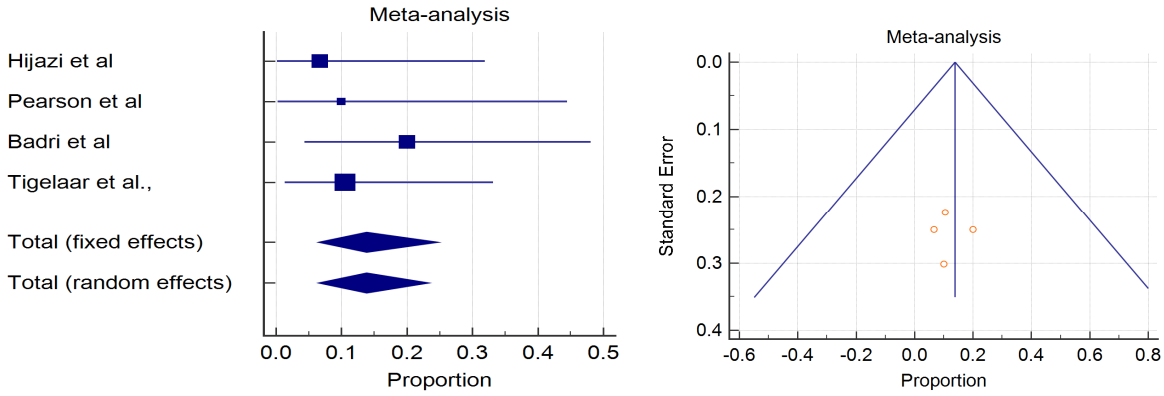


Table 19. Responsibility and accountability

Study	Sample size	Proportion (%)	95% CI	Weight (%)	
				Fixed	Random
Duta &Rafaila (2014)	13	7.692	0.195 to 36.030	18.67	18.67
Hijazi *et al*	15	6.667	0.169 to 31.948	21.33	21.33
Duta &Rafaila (2014)	13	7.692	0.195 to 36.030	18.67	18.67
Gulevska and Atanasoska	14	14.286	1.779 to 42.813	20.00	20.00
Total (fixed effects)	70	10.971	4.925 to 20.312	100.00	100.00
Total (random effects)	70	10.971	4.953 to 18.979	100.00	100.00

Test for heterogeneity

Q	0.5226
DF	4
Significance level	P = 0.9713
I^2 (inconsistency)	0.00%
95% CI for I^2	0.00 to 0.00

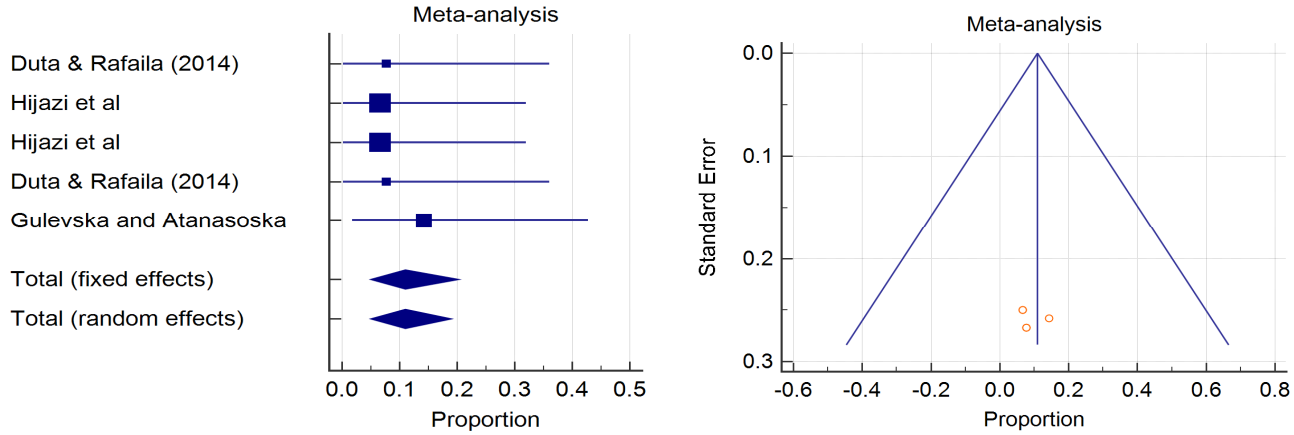


Table 20. Entrepreneurship skills

Study	Sample size	Proportion (%)	95% CI	Weight (%)	
				Fixed	Random
Duta &Rafaila (2014)	13	7.692	0.195 to 36.030	25.00	25.00
Hijazi *et al*	15	6.667	0.169 to 31.948	28.57	28.57
Aurora *et al*	9	11.111	0.281 to 48.250	17.86	17.86
Total (fixed effects)	52	10.368	3.821 to 21.443	100.00	100.00
Total (random effects)	52	10.368	3.826 to 19.613	100.00	100.00

Test for heterogeneity

Q	0.2238
DF	3
Significance level	P = 0.9737
I^2 (inconsistency)	0.00%
95% CI for I^2	0.00 to 0.00

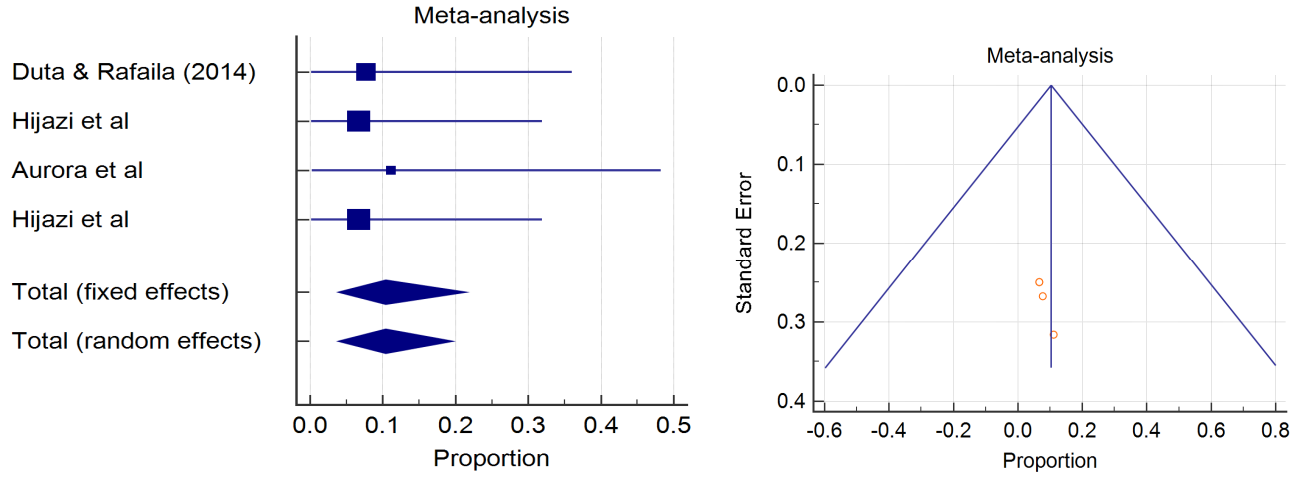


Table 21. Demographic interest

Study	Sample size	Proportion (%)	95% CI	Weight (%)	
				Fixed	Random
Duta &Rafaila (2014)	13	7.692	0.195 to 36.030	25.00	25.00
Hijazi *et al*	15	6.667	0.169 to 31.948	28.57	28.57
Aurora *et al*	9	11.111	0.281 to 48.250	17.86	17.86
Hijazi *et al*	15	6.667	0.169 to 31.948	28.57	28.57
Total (fixed effects)	52	10.368	3.821 to 21.443	100.00	100.00
Total (random effects)	52	10.368	3.826 to 19.613	100.00	100.00

Test for heterogeneity

Q	0.2238
DF	3
Significance level	P = 0.9737
I^2 (inconsistency)	0.00%
95% CI for I^2	0.00 to 0.00

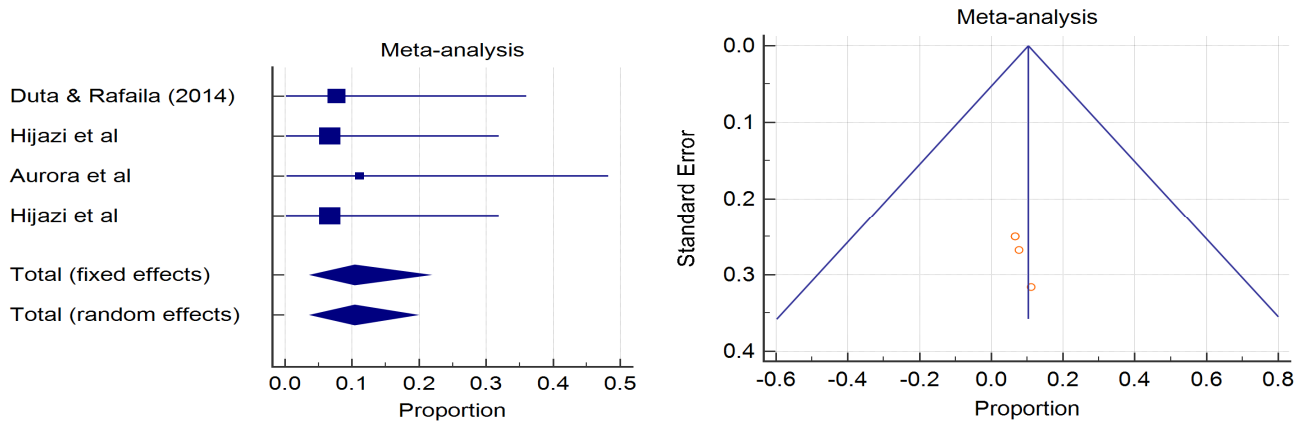


Table 22. ICT Knowledge

Study	Sample size	Proportion (%)	95% CI	Weight (%)	
				Fixed	Random
Duta &Rafaila (2014)	13	7.692	0.195 to 36.030	25.00	25.00
Hijazi *et al*	15	6.667	0.169 to 31.948	28.57	28.57
Aurora *et al*	9	11.111	0.281 to 48.250	17.86	17.86
Badri *et al*	15	6.667	0.169 to 31.948	28.57	28.57
Total (fixed effects)	52	10.368	3.821 to 21.443	100.00	100.00
Total (random effects)	52	10.368	3.826 to 19.613	100.00	100.00

Test for heterogeneity

Q	0.2238
DF	3
Significance level	P = 0.9737
I^2 (inconsistency)	0.00%
95% CI for I^2	0.00 to 0.00

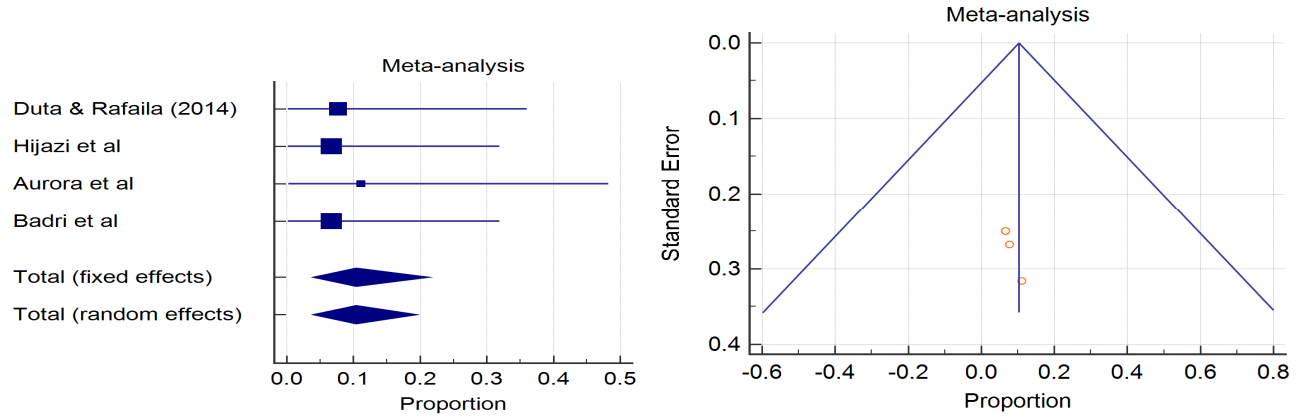
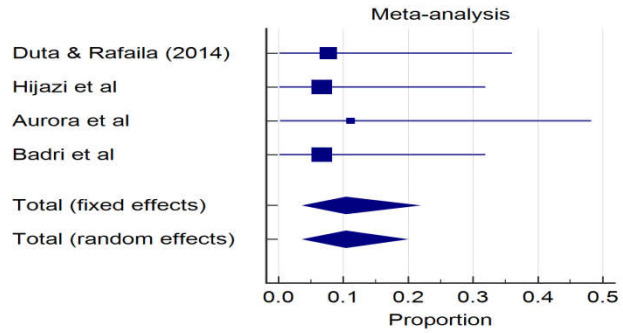


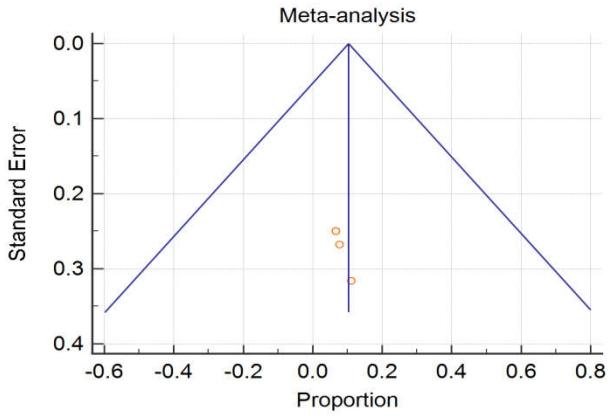
Table 23. Engaging skills

n	Sample size	Proportion (%)	95% CI	Weight (%)	
				Fixed	Random
Duta &Rafaila (2014)	13	7.692	0.195 to 36.030	25.00	25.00
Hijazi *et al*	15	6.667	0.169 to 31.948	28.57	28.57
Aurora *et al*	9	11.111	0.281 to 48.250	17.86	17.86
Badri *et al*	15	6.667	0.169 to 31.948	28.57	28.57
Total (fixed effects)	52	10.368	3.821 to 21.443	100.00	100.00
Total (random effects)	52	10.368	3.826 to 19.613	100.00	100.00

Test for heterogeneity

Q	0.2238
DF	3
Significance level	P = 0.9737
I^2 (inconsistency)	0.00%
95% CI for I^2	0.00 to 0.00





Four studies reported the ICT Knowledge, the proportion of case knowledge skills that established Teacher competency was 10.37% (95% CI 3.83% - 19.61%). ICT Knowledgehave an insignificant influence on the heterogeneity in meta-regression (p = 0.974). Four studies reported the Engaging skills, the proportion of cases of Engaging skills that established Teacher competency was 10.37% (95% CI 3.83% - 19.61%). Engaging skills have an insignificant influence on the heterogeneity in meta-regression (p = 0.974). In all the funnel plots for skills in teacher teaching, all the skills points lie within the funnel.

DISCUSSION

The quality of teaching and learning at the university level across the globe is being given growing attention both to ensure potential teaching at universities and to be able to show that effectiveness. Modern education explores the issue of the development of critical competencies, communicative, informational, and problem-solving competencies (Devlin & Samarawickrema, 2010). In this review, the communication and interpersonal skills developed Teacher competency, representing 14.63% and 12.37% of the studies, respectively. Similarly, a comparison of the top general competencies noticed some trends. In all roles, communication and interpersonal skills were essential and dominated the top ten competencies in both studies; Williams (2003) and this student's good communication skills improve the relationship between the teachers and students by enhancing the understanding level between students and teachers Loss (2000). In this review, 11.11% of the studies reported that student counseling developed Teacher competency, and 17.55% demonstrated that student support & participation developed Teacher competency. Devlin and Samarawickrema (2010) indicated that respect and support for students' development as individuals determine excellence in university teaching for the purposes of findings showed that learning new skills and learner/updated knowledge developed teacher competency, representing 13.81% and 13.35% of the studies, respectively. The subject knowledge developed teacher competency, which represents 9.84% of representing research studies, have shown that the caliber of teachers has a significant effect on the caliber of students. An instructor, a permanent learner, must also constantly refresh the subject knowledge and be aware of the latest developments in their subject matter (Nagoba & Mantri, 2015). Stronge(2007) also stated that teachers with expertise in the subject offer more opportunities to engage students in constructive discussions and activities led by students. In this review, 11.75% of the studies demonstrated that the Cooperation with colleagues and Participatory competency developed Teacher competency, and the 16.86% of the studies reported that the Interdisciplinary/ collaboration work developed Teacher competency. Nagoba and Mantri (2015) reported that the development of teachers depends on many factors, including collaborating with others and faculty exchange programs. This study showed that the 12.73% of the studies reported that the organizing competency developed Teacher competency. Rodzeviciute(2009) demonstrated that the organizational compete at developed teacher competency in higher education. Our review showed that the 7.59% of the studies reported that the Planning and realising projects that developed Teacher competency and the Self-motivation and motivating others and Critical thinking developed Teacher competency, which represents 12.43% and 8.95% of the studies, respectively. The Planning and motivational competencies developed teacher competency in higher education Rodzeviciute(2009). In this review, 5.11% of the studies demonstrated the Ambiguity and frustration on developed Teacher competency. Similarly, in most cases, Wright (2019)
indicated that were more impactful than simple or strategically ambiguous tasks. In addition, ambiguity and learning orientationin In most cases, tolerance was related to student learning, but the mindset and grade orientation were not related. Our findings showed that the self-motivation and motivating others, professional and engaging skills that developed Teacher competency and 10.13% and 8.09% of the studies demonstrated that the Handling of intercultural/ social relationships and positive attitude that developed Teacher competency, respect.

Hascher, *et al*. (2004) concluded that off-campus teaching strengthens the professional skills of preservice teachers as well as substantive changes in their attitudes. Similarly, Zlatic *et al*. (2014) define teachers' communication competence in terms of their attitudes, motivational dispositions knowledge. It is seen as the ability of the teacher to select acceptable behavior to achieve the objective of social interaction. In this review, 10.37% of the studies demonstrated the ICT Knowledge that developed Teacheretency. Pushkar (2015) reported developing countries in higher education lack quality and trained faculty in certain unique fields. To help students, information must be shared with the maximum number of students who can share knowledge through ICT. The present review has some limitations. The eligible studies included in the current systematic review regarding the trainer competencies in HEI were demonstrated wide of competency, and there is no majority of the competency was obtained. Consequently, many experiments do not provide a rigorous and systematic experimental design, thereby creating a potential bias in the experiences and outcomes.

CONCLUSION

Trainer competency research is a growing area, and teachers' skills and knowledge are of vital importance for the success of the teaching and learning process. The competency level of trainers plays an important role in expanding the standard of higher education. In contemporary society, the career of an academic trainer is remarkable in both place and role. There is an association among learning materials, teachers, and students in the educational process, so it is essential to train teachers for the career, which should concentrate on equipping them with relevant skills and competencies. It should be noted that the innovative nature of the educational process would only allow subjective care of the student and would pass these experiences to the field of future professional work. In the training of prospective academic trainers, it is essential to achieve the ability to communicate and interact in subject relationships, respecting the rights of others.

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