Curriculum Research

Volume 4, Issue 1
Winter 2023

An Evaluation of Teachers' Research Qualifications: a Comparison between the Existing and Desirable Conditions

Article info

Article Type:

Original Research

Authors:

Somayeh Toolabi Fard[1]

Nader Barzegar[2]

Saeed Alizadeh[3]

Article History:

Received: 2022.11.29
Accepted: 2023.03.12
Published: 2023.03.29

Abstract

The present research aimed to evaluate teachers' research qualifications by comparing the existing and desirable conditions. The research was an applied one in terms of its purpose, and data collection was carried out according to a mixed method (qualitative-quantitative) approach. The population of the qualitative section included the view and opinions of scholars and experts in credible published records, professors and specialists in education, and the top managers of the Ministry of Education until reaching a theoretical saturation of 17 people. On the other hand, the population of the quantitative section consisted of primary school teachers in Tehran, Iran, out of whom 384 teachers were selected for the sample of the study according to Morgan's table and the cluster sampling technique. The instruments of data collection in the qualitative section were made up of indexing forms and semi-structured interviews, while a researcher-made questionnaire with 15 items (questions) arranged according to a five-point Likert scale was implemented in the quantitative section. Data analysis in the qualitative section was conducted according to open, axial, and selective coding, while the quantitative section used descriptive statistics (mean and SD) and inferential statistics like Cronbach's Alpha test, the Kolmogorov-Smirnov test, One-sample t-test, and Friedman test. According to the results, teachers' research qualifications were classified into 15 general components. Moreover, the mean of teachers' research qualifications was above 4 in 9 components and between 3 and 4 in 6 components, and this indicated that primary school teachers' research qualifications were upper intermediate.

Keywords: Research, Research qualifications, Teacher, Existing and desirable conditions

[1] . PhD student in Educational Management. Faculty of Management.West Tehran Branch, Islamic Azad University, Tehran, Iran.
[2] Assistant Professor Department of Educational Sciences, Islamshahr Branch, Islamic Azad University, Tehran, Iran, Corresponding Author: barzegar.education@yahoo.com
[3] Assistant Professor Department of Educational Sciences, West Tehran Branch, Islamic Azad University, Tehran, Iran.

1. Introduction

Nowadays, education is an instrument to access more powerful techniques and fulfill better development and advancement. A large-scale competition has begun between various communities around the world to utilize modern techniques and supply more convenient living conditions. Moreover, rapid and daily development in human life justifies the need to train people and enable them to acquire readiness to accept changes in various aspects of human life. Such developments are inevitable, and accurate education is the only balanced and convenient method to cope with them. Thus, education should not be restricted to the transfer of knowledge and course materials; rather, it should provide students with the skills required to adapt to changes and, thus, create motivation and ability toward learning across one's lifetime (Pittman & Richmond, 2011). Teachers are responsible to carry out this mission.

The profession of teaching is a ground for the emergence of situations in terms of action and decision-making whose understanding is less likely to occur by using others' knowledge; rather, in such situations that emerge in the fields of teaching and learning on a daily basis, the teacher alone needs to take action as a reflective element to manage the challenging process of learning-teaching effectively. This basic role is represented by the grand concept of "teacher as inquirer" according to which teachers enter the field of research as educational researchers to produce and utilize the knowledge required to remove the barriers they face and understand the complexity of the teaching-learning process; in this way, they try to produce the most localized form of knowledge required for their classes and students by relying on teacher-oriented inquiries and as knowledgeable and autonomous professional entities (Saaki, 2013). Being equipped with research knowledge enables teachers to make more convenient decisions about their classes and exercise better management over the process of teaching-learning by gaining a command of the matters (Feldman et al., 2018).

Thus, research needs to become prevalent at every level and dimension to make education more and more dynamic. Research-oriented education is a type of reflective education that knows where, why, and why it is heading. In research-oriented education, all professional levels enjoy the benefits of research, and the ground is laid to establish education as a research-based learning organization. The first prerequisite to attain this goal is that executives at various levels have to understand research and

its conditions. Familiarity with research and its benefits and potential can drive its use in education; in this regard, teachers are more likely to be required to use research in their work and attain the relevant research qualifications (Afdal & Spernes, 2018).

Scientific research is the process of principled inquiry that a researcher utilizes to detect an issue and search for information about it by unraveling the truth of phenomena or uncertain circumstances (Sarraji & Attaran, 2010; Rahmanpour & Nasr Isfahani, 2013). Research is a source for the creation and development of teachers' knowledge about the complexities of the teaching-learning process. Based on the characteristics of their professions, teachers cannot limit the source of their knowledge and information to the endeavors of others and researchers outside their classrooms. They are professional people who need to utilize specific methods like action research and lesson study to resolve their teaching problems and use the results to improve their teaching; however, despite individual attempts to carry out research, using other people's research achievements and endeavors' that is typically achieved by researchers outside the classroom does not obviate the need for a teacher to conduct research. Researchers beyond the realm of the classroom have produced a massive volume of knowledge about various aspects of teaching, and teachers need to recourse to them to add to their knowledge in the third dimension of their relationship with research –as the consumers of other people's research achievement – and enrich their knowledge in relation to that of others as reflective agents (Joram et al., 2019). Educational research is a source of guidance and decision-making about classes, actions, and initiatives (Farley-Ripple et al., 2018). However, it is typically seen that the world of educational research is neglected (Cain et al., 2016; Schaik et al., 2018). A reason for the limited use of research by teachers and their lack of interest in the field is that they barely believe they can have positive impacts on their own performance (Coburn & Talbert, 2006). Another reason is that they may not consider themselves expert researchers (Farley-Ripple, 2012) or lack the required research qualifications.

The concept of research qualifications includes the acquisition of the knowledge, attitudes, and skills required to detect and define a research problem, plan, information retrieval and processing, and the conclusion and evaluation of the activities carried out during each stage (Dehdar, Arbab, Roshanray, & Lashkari, 2018). According to the United States National Research Council, research qualifications include identifying a question, designing a scientific study, utilizing appropriate instruments and techniques

to collect, analyze, and interpret the data, developing descriptions, explanations, predictions, detections, and analyses, predicting alternative explanations, and using mathematics across all aspects of the scientific research. Aiming to explain the components of teachers' professional qualifications and analyze their status in the upstream documents of Iran's educational system, Dibaee (2016) investigated the importance of teachers' research qualifications in the modern global educational system and classified them into a general and a special class. General qualifications were comprised of classifying, predicting, measuring, making decisions, deducing, open-mindedness, communicating, cooperating, creativity, curiosity, and comparing. On the other hand, the class of special qualifications was made of detecting a problem (selecting a topic and defining a problem, designing research (expressing the goals, detecting the variables, and developing the hypotheses), collecting the data (experiment, observe, and interview), analyzing the data (developing data tables, processing them, and illustrating charts), and concluding and reporting the findings (data interpretation, conclusion, and the presentation of reports and findings) (Dibaee, 2016).

In research-oriented teaching, people become aware of diverse issues that exist in the process of education. Thus, a teacher-researcher conducts research to improve their action and is, at the same time, the producer and consumer of research findings. Research has been one of the most significant sources of understanding and awareness for humans since old times and has played a key role in the development of societies and organizations. Similarly, research plays the distinguished role of producing knowledge and directing matters in education, which is considered one of the most complicated and difficult areas of human endeavor (Saaki, 2013). The status of research in education goes much beyond a mere presence in macro-scale executive and administrative decisions. Research has a profound relationship with education and cannot be relegated to a structural and case-oriented status. It is the most important method of education as it plays a significant role in the realm of teaching and is a critical factor in making the process of teaching-learning dynamic and in-depth (Puustinen et al., 2018).

As was mentioned above, one important aspect of teachers' qualifications is their research qualifications. Teachers are in close contact with research. In principle, a significant portion of the teaching profession is made up of teachers' scientific, research, and reflective interactions. Teachers need to be linked to the process of

research so that they may have an effective presence in the realm of teaching; in the first aspect, teachers act as the instructors of research to students. In this role, they direct their teaching to train reflective and inquirer students by effectively organizing the process of teaching-learning (Saaki, 2013). Thus, teachers need to do more research and conveniently understand its nature and convenient environments for its development. In the second aspect, teachers need to be researchers so that they can appropriately perform their responsibilities as professional and reflective agents on the teaching-learning path (Willegems et al., 2017). Reflecting on the sensitive, important, and unique role of teachers in an educational system and the impact of research on carrying out their responsibilities reveals that doing inquiries on teachers' research qualifications and skills is critical (Dehghan et al., 2016). Thus, the present study aimed to evaluate teachers' research qualifications (a comparison between the existing and desirable conditions).

Research Questions:

RQ1: What are the aspects and components of teachers' research qualifications according to experts and elite (the desirable conditions)?

RQ2: How much are teachers equipped with research qualifications (the existing condition)?

2. Method

The present study was applied in terms of its goals and used a mixed method research methodology (qualitative-quantitative) in terms of data collection. The population of the qualitative section included the views and attitudes of specialists and experts in credible written records like books and articles, experts and specialists in education, and the top managers of the Ministry of Education until reaching the theoretical saturation of 17 participants. In the quantitative section, 384 teachers were selected based on Morgan's table and the cluster sampling technique from 5 different regions in Tehran (north, south, center, east, and west). The data in the qualitative section were collected using indexing forms and semi-structured interviews, while the instrument in the quantitative section was a researcher-made questionnaire with 15 items (questions) that were arranged according to a 5-point Likert scale. The reliability and validity of the instrument utilized in the qualitative section were determined based

on tripartite consensus (a consensus among the data, researchers, and theories and methodology). Moreover, the face and content validity of the questionnaire utilized in the quantitative section was determined using a pilot test and a panel of experts, and the reliability of the questionnaires using Cronbach's Alpha method was determined at 0.88. The data in the qualitative section were analyzed using the Grounded Theory and open, axial, and selective coding, while descriptive (mean and SD) and inferential statistical procedures like Cronbach's Alpha test (to determine the reliability of the instrument), the Kolmogorov-Smirnov Test (to investigate the normal distribution of the data), one-sample t-test, and Friedman test were used in the quantitative section of the study.

3. Results

RQ1: What are the aspects and components of teachers' research qualifications according to experts and elite (the desirable conditions)?

After extracting the key concepts of teachers' research qualifications according to domestic and international experts and specialists, the obtained indicators were classified into 15 groups, and the dimensions of teachers' research qualifications were determined. The obtained components are illustrated in Table 1.

Table 1. The dimensions and components of teachers' research qualifications

Dimension	Components and indicators
The perceptual and reflective skills of analytical thinking	Searching for a topic, distinguishing, critical thinking, the ability to criticize and be open to criticism, being intelligent enough to challenge social norms, reflecting on one's experiences and beliefs, having the ability to predict the consequences of actions, being a skillful listener and observer, having the ability to compare and process information and data
Decision-making and problem-solving skills	Practicing systems thinking, understanding differences between objective and subjective information, expressing ideas effectively, being able to explore and detect challenging issues, looking at issues profoundly and detecting their roots, classifying, being able to predict and measure factors and phenomena, having a spirit of curiosity and inquiry, offering solutions for the issue

Dimension	Components and indicators
Innovative and creative thinking	Refusing to follow traditionalism, having a spirit of inquiry and creating questions, putting forward questions and predictions, being able to write creatively, having aesthetic talent, being able to develop ideas and propose creative solutions, being able to think about new ways without any prejudice or mental clichés, using novel and appropriate solutions, practicing creativity and combining data
Self-confidence, endeavor, and perseverance	Personality stability, self-regulation, self-efficacy, self-knowledge, believing in one's abilities (self-esteem), the ability to overcome problems, flexibility, being motivated and spontaneous, carrying out difficult tasks, endeavoring to perform tasks despite facing barriers
Responsibility and discipline	The spirit of helping others, admitting the results and consequences of one's decisions and actions, accepting the responsibility of executive matters at school, being serious in carrying out a task without being supervised by others, intertwining one's personal goals and interests with that of the school, respecting the regulations of the school, having a neat and clean appearance, being a role model in observing laws and regulations
Legitimacy and acceptability	Self-management, staying calm in dealing with critical and stressful situations, being well-behaved, respecting one's colleagues and students, being a role model for one's colleagues and students
Communication skills and effective interactions	The ability to establish relationships with students, parents, and colleagues, providing explanations, a spirit of patience and tolerance, establishing scientific interactions with others, building trust-driven relationships, behaving in a friendly manner according to the governing values, acting in a right-oriented way in dealing with students, being serious and lenient at the same time, the ability to use body language and nonverbal interactions, effectively listening to the opinions and suggestions of one's

Dimension	Components and indicators
	colleagues and students, paying attention and respecting others' needs, views, and feelings
Teamwork and networking	Forming research working groups, being able to work in teams and collaborate with others, the ability to coordinate actions, the ability to prevent tensions and conflicts in working teams, being interested in doing research in a group, being able to attract others' collaboration, empathy, and cooperation inside and outside the school
Piety and religious insight	Believing in and committing oneself to the values governing the society, being fair and trustworthy, speaking one's mind frankly even during difficult and unfavorable circumstances, behaving in a justice-oriented way
Interests and beliefs	Being interested, loyal, and committed to the responsibilities and goals of the schools, having an emotional attitude toward learning, being interested in human growth and transcendence, being aware of one's educational beliefs, believing in the value and importance of teaching and research in the Ministry of Education, having favorable attitudes toward the development of democratic views and values at school, committing oneself to the values and laws of society, the system of education, and the educational and professional regulations that concern teachers
Professional and occupational ethics	Being inclined toward learning and professional development (perpetual personal growth), facilitating and perpetuating a learning-oriented culture, being ready to respond, appreciating the necessity of research for qualified actions, acknowledging one's lack of information, and endeavoring to achieve the unknown, being committed to individual principles and ethics, sharing the results and findings of one's research with others, compatibility/social and communicative adaptability

Dimension	Components and indicators
Research ethics	Indicating one's awareness of and commitment to the professional ethics of research, having a good moral and spiritual reputation, being aware of research regulations and guidelines, meticulously observing research regulations and guidelines, protecting participants' information and privacy, sharing the information with other researchers and publishing the overall findings of the study, presenting one's achievements in a truthful manner, practicing trustworthiness in using and referring to others' studies, observing every stakeholder's right
Knowledge skills	Having relevant academic degrees and education, investigating books and other information sources, having a good command of English, being equipped with specialized knowledge and cognitive capabilities, being aware of theories on learning and education, being aware of the cognitive capabilities required for the teaching profession, the ability to produce knowledge and utilize modern knowledge, knowing how to detect and select credible scientific resources, having a good command of searching and library indexing
Technology-oriented skills and digital literacy	Having basic computer skills, having a good command of analytical and calculation software, having a good command of web browsing and search engines, having information literacy (ability to browse, detect the information resources and requirements of the discipline, and ability to evaluate and use the information effectively and morally), being able to effectively utilize ICT skills (technology literacy), being equipped with media literacy (the ability to detect, explain, analyze media content and messages, and observing the professional ethics and culture of using media)

Dimension	Components and indicators
Research and managerial skills in the execution of research	Knowing how to find research problems, observing the problem and recording behaviors, building hypotheses, having experience in research activities, having statistical skills in terms of calculation and measurement, meticulously recording information or writing the guidelines, being able to carry out research-centered professional research, guiding student research, having a good command of scientific research methods, knowing various research methods and data collection procedures, being able to detect the problem and illustrate its dimensions, being able to develop and design a research plan, developing, being able to construct instruments, knowing data collection methods, collecting valuable information from diverse sources, being able to collect and categorize information, being skillful in testing and analyzing the data, being able to make conclusions, offering suggestions, being able to interpret, analyze, and extract the findings, modeling, being able to write reports, having the skills required to publish a research report, knowing and being aware of the philosophy and regulations of the official and public education system of Iran, planning and self-regulating the issues of research, being able to organize and analyze the data in research, being able to lead a research team, paying attention to the results (being result-driven)

How much is the rate of research qualifications in teachers (the existing condition)?

To assess primary school teachers' research qualifications, 15 components were arranged in the research instrument, and the analysis revolving around the above question was carried out according to descriptive statistics (mean and SD) and inferential statistical procedures (one-sample t-test and Friedman Test).

Table 2. Demographic information

Variable	Level	Percentage	Frequency
Education	Two-year college degree	16/9	65
	Bachelor's degree	23/2	89
	Master's degree	52/6	202
	Ph.D. degree	7/3	28
Gender	Male	31/5	121
	Female	68/5	263
Service history	1-10 years	28/6	110
	11-20 years	40/4	155
	21-30 years	29/7	114
	Above 30 years	1/3	5

According to Table 2, the majority of the participants were females with master's degrees, and the ones with a service history of 11 to 20 years made up the majority.

Table 3. Descriptive statistics and the results of the one-sample t-test on primary school teachers' research qualifications

Dimension	Mean	SD	t	df	Sig
Responsbility and discipline	4/30	0/466	50/531	383	/000
Communication skills and effective interaction	4/33	0/479	49/503	383	/000
Legitimacy and acceptability	4/36	0/718	33/293	383	/000
Piety and religious insight	4/40	0/674	35/721	383	/000
Self-confidence and perseverance	4/16	0/639	36/533	383	/000

Knowledge skills	3/36	0/660	30/388	383	/000
Creative and innovative thinking	4/08	0/556	39/729	383	/000
The perceptual and reflective skills of analytical thinking	3/43	0/639	31/966	383	/000
Research and managerial skills in carrying out research	3/40	0/595	34/005	383	/000
Professional and occupational ethics	4/05	0/629	39/140	383	/000
Decision-making and problem-solving skills	4/13	0/434	52/143	383	/000
Technology-based skills and digital literacy	3/23	.62881	30/777	383	/000
Research ethics	4/06	0/691	32/212	383	/000
Teamwork and networking	3/43	0/691	29/571	383	/000
Interests and beliefs	3/46	0/504	40/934	383	/000

P≤0/05* P≤0/01**

Investigating the results provided in Table 3 indicated that the participants evaluated their research qualifications at a high level (p<0.010).

Teachers' research qualifications can be ranked as follows:

Table 4. Descriptive statistics and the results of the Friedman's test on ranking the primary school teachers' research qualifications

Rank	Dimensions	Mean rank	df	Chi-Square	N	Sig
1	Piety and religious insight	7/23	14	65/695	384	/000
2	Legitimacy and acceptability	6/78				
3	Communication skills and effective interaction	6/47				

4	Responsibility and discipline	6/30				
5	Self-confidence and perseverance	6/02				
6	Decision-making and problem-solving skills	5/82				
7	Creative and innovative thinking	5/11				
8	Research ethics	4/98				
9	Professional and occupational ethics	4/97				
10	Interests and beliefs	4/00				
11	The perceptual and reflective skills of analytical thinking	3/79				
12	Teamwork and networking	3/78				
13	Research and managerial skills	3/67				
14	Knowledge skills	3/60				
15	Technology-oriented skills and digital literacy	3/05				

P≤0/05* P≤0/01**

Investigating the results of Friedman Test on ranking the primary school teachers' research qualifications indicated a significant difference between the teachers at $p<0.01$ (sig. 0.00, $\chi 2=65.695$).

4. Discussion and Conclusion

The present study aimed to evaluate teachers' research qualifications (compare the existing and desirable conditions). To answer the first question, research qualifications required for teachers were developed in 15 general dimensions and components. Then, the research qualifications of primary school teachers were evaluated to answer the second question. By setting the cut-off point at mean values above 4, the results

showed that the mean values obtained for teachers' research qualifications were above 4 in 9 components and between 3 and 4 in six components, and this indicated that the investigated primary school teachers' research qualifications were at an upper intermediate level. However, in terms of the detailed analysis of the findings, it should be noted that the mean values obtained in the specialized aspects of research qualifications, including teamwork and networking, research and managerial skills, knowledge skills, and technology-oriented skills and digital literacy were below the mean of 3.5. This indicated that the teachers evaluated their general qualifications at a high level, while they considered their specialized qualifications to be at lower levels. To explain the above findings, it should be noted that the majority of the participants in the study had master's degrees and a service history between 11 and 30 years. Thus, they reported their general research qualifications at an upper-intermediate level.

In a descriptive-analytical study titled "An assessment of the curriculum adopted by Farhangian University in terms of teacher training programs" Dehghan et al. (2016) found that though Farhangian University had started to move toward being a research-oriented institution, it suffered from multiple shortcomings such as the lack of sufficient space, facilities, physical infrastructure, equipment, and motivated specialist workforce. Namdari (2013) attempted to detect the barriers against the implementation of the teacher-as-researcher programs from the perspective of teacher researchers and specialists in Hamedan Province. It was shown that one obstacle to the implementation of the program was teachers' insufficient knowledge and research capabilities. The results were in line with the findings of the present study concerning the low specialty of teachers in terms of doing research. The findings show that despite constant emphases on being a teacher-researcher over the past few years, teachers' research qualifications and specialized knowledge are still at a lower intermediate level.

Research and inquiry are among the most well-known ways for humans to solve problems and extend the boundaries of knowledge and should be utilized by everybody in every field and organization. The education system is one of the most important organizations in any society, and teachers are its indispensable components. Growth and advancement in any society become possible by having a powerful education system. This requires the existence of teachers who are highly capable in various fields, and research and inquiry make up one of them. Therefore,

teachers need to carry out research to perform their responsibilities well and resolve any potential issue. In this regard, teachers need to be equipped with characteristics that are called research qualifications. The present study aimed to evaluate the indicators and components of teachers' research qualifications according to domestic and international elite and specialists and compare the existing and desirable conditions in that regard.

Based on the findings of the study, authorities, particularly decision-makers in the Ministry of Education and Farhangian University, are recommended to consider convenient programs and training courses to develop and enhance teachers' research qualifications, and the curricula utilized by Farhangian University put more emphasis on the teacher-as-research approach. Moreover, in-service courses and workshops need to be held for teachers. Furthermore, the grounds necessary for the implementation of such skills by teachers need to be laid. That is because one of the areas neglected in the education system of the country is conducting applied studies by teachers at schools, one important reason for which is the absence of sufficient knowledge and skills among teachers.

References

Afdal, H. W., & Spernes, K. (2018). Designing and redesigning research-based teacher education, Teaching and Teacher Education, 74, 215e228.

Cain, T. (2016). Denial, opposition, rejection or dissent: why do teachers contest research evidence? Research Papers in Education, 1-15.

Coburn, C. E., & Talbert, J. E. (2006). Conceptions of evidence use in school districts: Mapping the terrain. American Journal of Education, 112(4), 469e495.

Dehdar, M., Arbab, E., Roshanray, M., & Lashkari, A. (2018). An exploration of teachers' qualifications. *A Bi-Quarterly Journal of Educational and Scholastic Studies*, *4*(6).

Dehghan, A., Mahram, B., & Karami, M. (2016). An assessment of the curriculum of Farhangian University according to the development of teacher-as-researchers: a case study of Shahid Beheshti and Shahid Hasheminejad Campuses. *Bi-Quarterly Journal of Higher Education Curriculum Studies*, *7*(13), 78-100.

Dibaee Saber, M., Abbasi, E., Fathi Vajargah, K., & Safaee Movahhed, S. (2016). Explaining the components of teachers' professional qualifications and

analyzing them according to the upstream documents of the Ministry of Education. *Bi-Quarterly Journal of Teaching and Learning Research*, *13*(2), 115-116.

Farley-Ripple, E., May, H., Karpyn, A., Tilley, K., & McDonough, K. (2018). Rethinking connections between research and practice in education: A conceptual framework. Educational Researcher, 47(4), 235e245

Farley-Ripple, E.N., Raffel, J.A. and Welch, J.C. (2018), Administrator career paths and decision processes, Journal of ducational Administration, 50(6), 788-816.

Feldman, A., Altrichter, H., & Posch, P. (2018). Teachers investigate their work: An introduction to action research across the professions (3rd ed.). London: Routledge

Joram M, Nigussie, Helen; Mwacharo,.; Osama, Sarah; Agaba, Morris; Mekasha, Yoseph; Kebede, Kefelegn et al. (2019): Genetic diversity and matrilineal genetic origin of fat-rumped sheep in Ethiopia. In: Tropical animal health and production 51 (6), S. 1393–1404. DOI: 10.1007/s11250-019-01827-z.

Namdari Pejman, P., Ghanbari, S., & Mahmoudi, H. (2016). Detecting barriers against the implementation of the teacher-as-research program according to teacher-researchers and elite: a case study of Hamedan Province. *Bi-Quarterly Teaching and Learning Research*, *3*, 195-216.

Pittman, L. D., & Richmond, A. (2011). University Belonging, Friendship Quality, and Psychological Adjustment During the Transition to College. Journal of Experimental Education, 76 (2): 343 – 361.

Puustinen, M., S€antti, J., Koski, A., & Tammi, T. (2018). Teaching: A practical or research-based profession? Teacher candidates' approaches to research-based teacher education. Teaching and Teacher Education, 74, 170e179.

Rahmanpour, R., & Nasr Isfahani, A. (2013). An investigation of the methodology of domestic and international studies on high education curricula. *Theory and Practice in Curriculum Journal*, *1*(2), 125-148.

Saaki, R. (2013). Teachers' knowledge of research and their need to be trained in research. *Bi-Quarterly Journal of Teaching and Learning Research*, *20*(3).

Sarraji, F., & Attaran, M. (2010). The methodologies of studies on E-learning: a comparison between domestic and international studies. *Quarterly Journal of Educational Innovations*, *36*, 50-76.

Schaik, P. van, Jeske, D., Onibokun, J., Coventry, L., Jansen, J., & Kusev, P. (2018).

Risk perceptions of cyber-security and precautionary behaviour. Computers in Human Behavior, 75, 547-559. doi:10.1016/j.chb.2017.05.038.