



REFLECTION AS AN INSET TOOL FOR TEACHERS' PROFESSIONAL DEVELOPMENT IN THE 21ST CENTURY: A QUANTITATIVE STUDY

Maria Tzotzou¹,
Maria Poulou,
Thanassis Karalis,
Amalia Ifanti

Department of Educational Sciences,
and Early Childhood Education,
University of Patras,
Greece

Abstract:

The major importance of reflection to teachers' professional development in the 21st century via the exploration and re-examination of perceptions, attitudes and practices related to their didactic and pedagogical work has been widely recognized in the scholarly literature. The purpose of this paper is to discuss an empirical study which investigates the extent to which reflection is used as an INSET tool for teachers' professional development in the 21st century. The research questions examine whether in-service training (a) fosters teachers' individual and collective reflection, (b) activates teachers' reflection on their educational practices and (c) uses reflective methods/techniques which contribute to teachers' professional development. To this end, the quantitative research method was selected to gather data via an online questionnaire answered by 290 in-service state-school primary teachers. According to the research findings, in-service training slightly or not at all implements reflective training practices to foster teachers' individual and collective reflection on their educational work, which results in teachers' low satisfaction with INSET methods and techniques. Furthermore, empirical data reveal that in-service training does not foster teachers' reflection to encourage them to explore, re-examine and change their deep-rooted educational perceptions and practices, while the inadequate use of reflective training practices which could enable trainee teachers to perceive, understand and cope with the challenges emerging from their complicated role and mission in the 21st-century socio-educational context also results in INSET failure to contribute to teachers' professional development in the 21st century. Findings raise implications for INSET review and reform regarding the implementation of more reflective training practices towards developing teachers' reflective skills as a prerequisite to the 21st-century socio-educational transformation.

¹Correspondence: email m.tzotzou@upatras.gr

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1. Introduction

Educational reality has no longer been one-dimensional, static and stable as regards the context and demands, but it has been multi-dimensional, dynamic and ever-changing, affecting inevitably teachers' personal theories of action related to deep-rooted educational perceptions and practices which essentially need to be re-examined to be compatible with the emerging 21st-century socio-educational challenges (Day, 2003). Due to this fact, teachers' professional development broadens as content and process to involve new concepts, practices and skills related to critical reflection on educational work towards the expected transformation in the globalized socio-educational context (Altrichter, 2005·Aronowitz & Giroux, 2010· Cope & Kalantzis, 2015· Day, 2003· Kovacs, 2018· Tsafos & Katsarou, 2013· Tzotzou *et al.*, 2021· Tzotzou & Poulou, 2023· Zeichner & Liston, 1987· Zeichner & Liu, 2010).

In the scholarly literature, it has been widely stressed that reflection on a continuous basis should be encouraged, promoted and supported by active and experiential training activities in order to provide congruous opportunities for teachers' professional development (Bell, 2001· Brookfield, 1995· Mezirow, 1990· Nicolaidou, Karagiorgi & Petridou, 2018· Lubis, 2018· Zeichner & Liu, 2010). According to the global socio-educational trends and demands, emphasis should be placed on teachers' professional development by fostering a reflective training process which capitalizes on teachers' professional experience by linking theory to practice (Avgitidou, 2014· Altrichter *et al.*, 2001· European Commission, 2011· Karalis, 2010· Kokkosi *et al.*, 2021, 2022· Nicolaidou *et al.*, 2018· Lubis, 2018· Tzotzou & Poulou, 2023· Zeichner & Liu, 2010). In this regard, in-service training (INSET) should focus on reflection as a fundamental concept and process; that is as a tool of transforming teachers' role and educational practices which constitutes a requisite for their professional development in the 21st century (Avgitidou, 2014· Avgitidou & Chatzoglou, 2012· Altrichter, 2005·Aronowitz & Giroux, 2010· Day, 2003· Imants, 2002· Kokkosi *et al.*, 2022· Matsagouras & Chelmis, 2002· Nezhad & Vahedi, 2011· Papanou, 2005· Poulou, 2005· Tzotzou *et al.*, 2021· Tzotzou & Poulou, 2023· Xochellis, 2005).

In light of the above, this paper focuses on an empirical study which examines whether the existing INSET practices make use of critical reflection, both individual and collective, towards the reinforcement of teachers' adaptive skills to the rapid socio-educational changes through the re-examination and reform of their educational practices to promote their transformative professionalism (Kokkosi *et al.*, 2021, 2022· Kovacs, 2018· McWhinney & Markos, 2003· Mockler, 2005· Nagda *et al.*, 2003· Nezhad & Vahedi, 2011· Peterson *et al.*, 1990· Sachs, 2003· Tzotzou *et al.*, 2021· Tzotzou & Poulou, 2023· Yaro, 2019).

2. Literature review

2.1 Reflection: concept and process

Reflection constitutes a significant parameter of teachers' professional development as it can encourage and reinforce their ability to reflect by activating the critical examination and revision of their didactic and pedagogical work towards the transformation of their conceptions and practices in order to achieve change and improvement in the actual educational process as well as their own professional evolution (Avgitidou & Chatzoglou, 2012; Kokkosi *et al.*, 2022; Poulou, 2005). Reflection is strongly related to teachers' ability to reflect, to take initiative and make decisions on an *ad hoc* basis in order to manage problems emerging in action effectively and revise deep-rooted conceptions about their own educational practices (Day, 2003; Poulou, 2005). Schön (1987) and Day (2003) have stressed emphatically the major contribution of reflection to teachers' professional development as well as the need to enable teachers to become reflective practitioners.

Schön (1987) identified two types of reflection: reflection-*in*-action and reflection-*on*-action. Reflection-*in*-action refers to the process that allows teachers to reshape the situation or activity on which they are working while it is unfolding, as well as to reflect on unexpected experiences by experimenting with alternative options which serve to generate both a new understanding of the experience and a change in the situation. Reflection-*in*-action is usually individual and enables teachers to explore and solve problems occurring immediately in class, thus encouraging their independent action and initiative towards improving the quality of the learning process (Day, 2003). Reflection-*on*-action involves reflecting on experience, on a situation or phenomenon *after* it has occurred and allows teachers to explore what happened in that particular situation and to examine alternative ways to improve their own practice. Reflection-*on*-action provides teachers with the opportunity to be engaged in a process of collective reflection by encouraging them to interact with other colleagues to discuss and exchange useful advice and ideas about their didactic and pedagogical action. Reflection-*on*-action also fosters collective and collaborative planning of activities in a school unit and it is a practice which has already been applied in advanced educational systems in England, Australia, Sweden, the USA and Norway (Day, 2003). Another type of reflection is reflection-*for*-action, which refers to a broader critical view and attitude as regards the examination of ethical, political and functional matters included in teachers' everyday thought patterns and actions related to teaching aims and practices within a certain socio-political context (Day, 2003). As Zeichner and Liston (1996) point out, reflection-*for*-action lays emphasis on issues related to students' interests, needs and background as well as to social reform for a more democratic and humane society.

According to Avgitidou (2014), as reflection focuses on the investigation of teachers' personal theories and practices via experiential and inquiring activities, it constitutes a prerequisite for their professional learning and development. Teachers' professional development can be achieved by strengthening them as reflective

practitioners in order to be able to observe their actions to re-examine, enrich, change and transform them (Avgitidou, 2014). Reflection can enable teachers to evolve into reflective practitioners who transform conceptions and behaviors critically via self-observation and/or peer-observation with colleagues in a collaborative context directing their professional development on the basis of their real professional needs (Altrichter *et al.*, 2001; Karalis, 2010). Reflection can enable teachers to become aware of both their students' and school's needs in order to make the necessary decisions and interventions towards the improvement of the educational process as a whole (Xochellis, 2005). Altrichter (2005) points out that professional development is not restricted to a simple acquisition and typical application of new knowledge, but it is achieved following a process by which new knowledge emerges as a result of reflection on actual educational practice capitalizing on teachers' professional experience in a specific school context. In other words, reflection enables teachers to realize the multidimensional and demanding character of the educational work as well as their own crucial role in order to take action and make decisions towards the management and solving of complex pedagogical problems related to the increasing socio-educational challenges and school diversity especially the last decades (Aronowitz & Giroux, 2010; Matsagouras & Chelmis, 2002; Schön, 1983; Tzotzou *et al.*, 2021).

2.2 Reflection: an INSET tool for teachers' professional development in the 21st century

Teachers' role in the 21st century presupposes that professional development should be orientated to their critical and reflective empowerment in order to be able to transition into the new open, volatile and constantly reframed socio-educational context of autonomous educational action where they are challenged to take increased educational responsibility (Aronowitz & Giroux, 2010; Giroux, 1988; Tzotzou *et al.*, 2021; Tzotzou & Poulou, 2023; Xochellis, 2005). According to Imants (2002), 21st-century teachers' professional development should not involve the acquisition of decontextualized teaching skills and a gradual improvement of their professional behavior but a constant developmental process to promote the reflection on the substance of their educational work through the realization of their complicated and demanding role in the era of globalization. To this end, INSET should place emphasis on the implementation of reflective techniques and methods such as action research, case study, peer observation, problem-solving and microteaching which are considered to be effective experiential training activities linking theory to actual practice thus allowing to focus on real school-life needs and concerns (Kourkouli, 2015; Orgoványi-Gajdos, 2016; Pharis *et al.*, 2019; Psalla, 2013; Tsafos & Katsarou, 2013; Tsoulou, 2016).

The shift of focus from teaching behavior and actions to teachers' reflection and critical ability constitutes a new domain of interest in educational psychology (Nezhad & Vahedi, 2011; Poulou, 2005). 21st-century teachers need to be engaged in a constant exploration, critical re-examination and revision of their didactic and pedagogical practices given that only if their own critical thought becomes released, will they be able to develop professionally and cope with the new conditions and socio-educational

challenges in the era of global citizenship (Aronowitz&Giroux, 2010· Day, 2003· Tsafos & Katsarou, 2013). 21st-century teachers need to transform into (a) cultural workers interacting with the modern multicultural educational context and (b) transformative intellectuals who are challenged to reflect critically and make decisions on the demanding and ever-changing school reality (Aronowitz & Giroux, 2010· Lieberman & Miller, 1999· Tzotzou *et al.*, 2021).

In this regard, 21st-century professional development should stem from teachers' professional experience and their systematic critical reflection on that experience (Matsagouras & Chelmis, 2002· Papanoum, 2005) while at the same time should involve the development of teachers' metacognitive skills to develop their professional self-awareness (Nezhad & Vahedi, 2011). That is to say, in the 21st century context a dynamic approach to teachers' professional development is needed towards fostering critical reflection by capitalizing on their own experience, previous knowledge, perceptions and convictions (Dakopoulou, Kalogridi & Terezaki, 2012· Peterson *et al.*, 1990· Poulou, 2005· Tzotzou & Poulou, 2023). 21st-century teachers are challenged to reflect deeply on their pedagogical practice as regards the effective management of emotions, relationships and behaviors which affect the learning context by taking initiatives, making decisions and solving problems with the appropriate pedagogical *tact* in order to be able to ensure a more positive and efficient pedagogical climate in the school classroom (Goleman, 2011· Poulou, 2005· van Manen, 1995). Pedagogical *tact* refers to teachers' skill of improvising in a purely pedagogical way towards creating the most conducive learning environment in students' favor (van Manen, 1995).

This reflective perspective on teachers' professional development can combine individual reflection on personal, professional experience with collective reflection via the exchange of professional experience and discussions with other colleagues in order to achieve the effective management of any restrictions, difficulties and problems characterizing the modern complex school context (Anderson *et al.*, 1995· Tsafos & Katsarou, 2013· Tzotzou *et al.*, 2021· Tzotzou & Poulou, 2023). Collective reflection can facilitate and foster professional development via teachers' collaboration. As Glazer and Hannafin (2006) support, it is significant to foster teachers' collaborative skills while interacting with colleagues, students, parents, local society and other stakeholders such as education executives and researchers for the pursuit of intraschool solutions and new educational perspectives within a decentralized educational context (Council of the European Union, 2007).

The valuable impact of reflection on teachers' professional development has been validated by the results of several empirical studies (Aubusson *et al.*, 2015· Aubusson *et al.*, 2009· Borg, 2011· Butler & Schnellert, 2012· Jin *et al.*, 2021· Karagianni, G., 2018· Karagiorgi & Symeou, 2005· Karagiorgi, 2012a, 2012b· Kourkouli, 2015· Pereira, 2011, 2013· Reed *et al.*, 2002· Somers & Sikorova, 2002· Symeou *et al.*, 2009· Szelei & Alves, 2018· Szelei *et al.*, 2020· Tsoulou, 2016). For instance, qualitative studies by Lyle (2003) and Borg (2011), which evaluate INSET programs, reveal reflection benefits as regards the critical review and transformation of teachers' perceptions, attitudes and practices strongly

related to positive impact both on students and school life in general. Other relevant empirical studies have also underscored the benefits of teachers' collective reflection with colleagues which fosters their professional development further (Aubusson *et al.*, 2015· Aubusson *et al.*, 2009· Borg, 2011· Butler & Schnellert, 2012· Karagianni E., 2012· Karagiorgi, 2012b· Karagiorgi & Symeou, 2008· Pereira, 2011· Szelei *et al.*, 2020).

3. Research methodology

3.1 Aim and research questions

The aim of this study, which forms a crucial part of a more extensive study in terms of doctoral research, was to examine whether INSET in Greece implements the technique of reflection as a tool for teachers' professional development in the 21st century. To this end, three research questions were developed as follows:

Q1: To what extent does INSET foster teachers' individual and collective reflection?

Q2: Does INSET activate teachers' reflection on their educational practices?

Q3: Does INSET use reflective methods/techniques which contribute to teachers' professional development via critical reflection and transformation?

3.2 Research approach: data collection and analysis

The research strategy developed was a quantitative survey addressed to primary teachers-PE70 specialty working in state primary schools of a specific regional unit (Aetolia-Acarmania prefecture in Western Greece). The quantitative research approach was selected to achieve a large sample from dispersed schools of a specific region in Greece and to gather data in a fast, consistent, precise and reliable way minimizing any personal bias (Cohen, Manion & Morrison, 2008). The research tool was an online questionnaire constructed with the aid of the Google Forms application, which was first piloted to a convenience sample of 68 primary teachers-PE70 specialty of the specific region who volunteered to facilitate the research process. After the pilot phase, the questionnaire link was forwarded along with a cover letter to the target population. The online questionnaire included only close-ended questions such as 5th scale Likert-type questions to measure levels of degree (not at all, slightly, moderately, much, to a great extent), multiple questions providing respondents with multiple answer options and questions asking for participants' personal information (e.g. demographics). Quantitative data were analyzed via IBM SPSS 26 Statistics package in order to achieve descriptive statistics by measuring frequencies, means (M) and standard deviations (SD) and to calculate the Cronbach Alpha coefficient as regards data reliability and validity, which overall was found >0.95 assuring that response values for each teacher-participant across a set of questions are consistent and thus, research variables have high consistency and reliability (Cohen, Manion & Morrison, 2008).

3.3 Participants

The target population of the study was made up of primary teachers-PE70 specialty working in state primary schools in Aetolia-Acarmania (Western Greece). The data were obtained from 290 in-service primary teachers of PE70 specialty working in state primary schools in the regional unit of Aetolia-Acarmania (Western Greece). The vast majority of the participants (200, 69%) were female, and 90 (31%) were male, while their average age was 44.1 years old. Regarding their academic qualifications, the sample consisted of highly qualified teachers as 125 (59.8%) held a master's degree, 33 (15.8%) were to complete their postgraduate studies, 4 (1.9%) held a doctorate and for 12 teachers (5.7%) their doctoral studies were in progress while 35 teachers (16.7%) held a second bachelor degree. The average teaching experience of the participants was 17.85 years, while the vast majority of them were permanent state-school teachers (226, 77.9%), and 64 (22.1%) were substitute teachers. As for their position, only 18 participants (6.2%) were school principals, and 12 respondents (4.1%) were vice principals.

4. Research findings

Q1: To what extent does INSET foster teachers' individual and collective reflection?

According to the research findings (Table 1), the majority of the participants which exceeds 45% (131, 45.2%) answer that INSET programs use slightly (109, 37.6%) or not at all (22, 7.6%) the reflective technique to foster individual reflection on their educational practices ($M=2.63$, $SD=0.863$) while 50% of the participants also respond that collective reflection is slightly (111, 38.3%) or not at all (34, 11.7%) fostered by INSET ($M=2.49$, $SD=0.857$).

Table 1: Fostering individual and collective reflection

INSET programs use the technique of reflection to foster:										
	Not at all		Slightly		Moderately		Much		To a great extent	
	N	%	N	%	N	%	N	%	N	%
The individual reflection on educational practice	22	7,6%	109	37,6%	117	40,3%	37	12,8%	5	1,7%
The collective reflection on educational practice	34	11,7%	111	38,3%	119	41,0%	21	7,2%	5	1,7%

Another significant number of respondents which exceeds 40% state that INSET fosters slightly or not at all collective reflection with colleagues towards discussing and solving (a) problems occurring in the school classroom ($M=2.71$, $SD=0.902$), (b) intra-school problems occurring within a single school ($M=2.66$, $SD=0.943$) and (c) problems related to modern state-school issues in general ($M=2.68$, $SD=0.975$).

Table 2: Use of collective reflection

INSET programs offer the opportunity to practice collective reflection with your colleagues in order to discuss and solve:										
	Not at all		Slightly		Moderately		Much		To a great extent	
	N	%	N	%	N	%	N	%	N	%
Problems occurring in the school classroom	22	7,6%	95	32,8%	127	43,8%	36	12,4%	10	3,4%
Intra-school problems occurring within a single school	27	9,3%	102	35,2%	114	39,3%	36	12,4%	11	3,8%
Problems related to state-school issues in general	30	10,3%	96	33,1%	112	38,6%	40	13,8%	12	4,1%

Q2: Does INSET activate teachers' reflection on their educational practices?

More than one-third of the respondents state that INSET methods and techniques slightly or not at all offer them the opportunity to reflect upon (a) their didactic practices related to teaching methods, techniques, materials, etc.($M=2.92$, $SD=0.938$) and (b) their pedagogical practices related to conflict handling, bullying, racism and otherness issues, etc. ($M=2,90$, $SD=0,965$).

Table 3: Reflection on educational practices

INSET methods and techniques provide you with the opportunity to reflect upon:										
	Not at all		Slightly		Moderately		Much		To a great extent	
	N	%	N	%	N	%	N	%	N	%
Your didactic practices	14	4,8%	79	27,2%	133	45,9%	45	15,5%	19	6,6%
Your pedagogical practices	16	5,5%	84	29,0%	120	41,4%	52	17,9%	18	6,2%

As regards the extent to which INSET methods and techniques foster (a) reflection-*in*-action (to reshape the situation or activity on which they are working immediately while it is unfolding) the majority of the participants (125, 43.2%) respond slightly or not at all ($M=2.74$, $SD=0.951$), (b) reflection-*on*-action (reflecting on experience, situation or phenomenon after it has occurred) more than one-third of the participants (105, 36.2%) respond slightly or not at all ($M=2.89$, $SD=0.986$) and (c) reflection-*for*-action (critical review of action in relation to the socio-cultural context in which it takes place) the majority of the participants (124, 42.7%) also respond slightly or not at all ($M=2.71$, $SD=0.951$).

Table 4: Reflection on classroom action

INSET methods and techniques foster:										
	Not at all		Slightly		Moderately		Much		To a great extent	
	N	%	N	%	N	%	N	%	N	%
Reflection- <i>in</i> -action	19	6,6%	106	36,6%	109	37,6%	42	14,5%	14	4,8%
Reflection- <i>on</i> -action	21	7,2%	84	29,0%	104	35,9%	69	23,8%	12	4,1%
Reflection- <i>for</i> -action	25	8,6%	99	34,1%	110	37,9%	46	15,9%	10	3,4%

Q3: Does INSET use reflective methods/techniques which contribute to teachers' professional development via critical reflection and transformation?

According to the research findings, over 45% of the participants (134, 46.2%) characterize INSET methods and techniques as slightly or not at all reflective ($M=2.68$, $SD=0.928$) which is validated by the fact that lecture proves to be the most widely used INSET technique (242, 17.2%) while reflective training techniques such as action research (22, 1.5%), case study (118, 8.3%), peer observation (35, 2.5%), problem-solving (60, 4.2%) and microteaching (86, 6%) seem to be used to a very small extent. As regards primary teachers' degree of satisfaction with INSET methods and techniques, the majority of the participants, which exceeds 45% (131, 45.2%), are slightly or not at all satisfied, 111 respondents (38.3%) are moderately satisfied, and only 48 of them (16.5%) are much or absolutely satisfied ($M=2.66$, $SD=0.883$).

Quantitative data reveal that INSET programs contribute slightly or not at all to the transformation of teachers' perceptions, attitudes and practices although it is considered to be a significant factor in professional development (Table 5). More specifically, over 50% of the participants responded that INSET programs contribute slightly or not at all to the transformation of their (a) didactic practice ($M=2.53$, $SD=0.930$) and (b) pedagogical practice ($M=2.49$, $SD=0.938$) while another considerable percentage of responses (49.3%) indicate that INSET contributes slightly or not at all to the transformation of teachers' attitudes and perceptions ($M=2.67$, $SD=1.085$). At the same time, 49.3% of the respondents' state that INSET programs contribute slightly or not at all to the critical reflection on their educational practice ($M=2.61$, $SD=0.979$).

Table 5: INSET contribution to critical reflection and transformation

INSET programs you have attended so far contribute to:										
	Not at all		Slightly		Moderately		Much		To a great extent	
	N	%	N	%	N	%	N	%	N	%
The transformation of your didactic practice	32	11,00%	119	41,00%	100	34,50%	30	10,30%	9	3,10%
The transformation of your pedagogical practice	38	13,10%	117	40,30%	96	33,10%	32	11,00%	7	2,40%
The transformation of attitudes and perceptions	33	11,40%	111	38,30%	89	30,70%	33	11,40%	24	8,30%
The critical reflection on your educational practice	31	10,70%	112	38,60%	96	33,10%	40	13,80%	11	3,80%

Last but not least, according to half of the survey participants (50.3%, $N=146$), INSET contributes slightly or not at all to teachers' professional development in the 21st century ($M=2.64$, $SD=1.023$), while at the same time, a striking number of participants which exceeds 97% ($N=282$, 97.2%) respond that INSET methods and techniques need to be revised in order to be compatible with 21st-century educational challenges.

5. Discussion

Research findings reveal a deficit of reflective techniques regarding INSET programs provided to state-school primary teachers in Greece. INSET implements reflective training techniques (such as case study, peer observation, problem-solving, action research, and microteaching) to a limited extent, failing to foster teachers' individual and collective reflection on their educational work. It does not seem to engage them in actual reflective practice which could trigger reflection-*in*-action, reflection-*on*-action and reflection-*for*-action although lifelong reflective practice has proved to be a significant training tool towards teachers' professional development in a number of studies (Avgitidou, 2014· Avgitidou & Hatzoglou, 2012· Aubusson *et al.*, 2015· Aubusson *et al.*, 2009· Borg, 2011· Brookfield, 2012· Butler & Schnellert, 2012· Day, 2003· Goleman, 2011· Karagianni E., 2012· Karagiorgi, 2012b· Karagiorgi & Symeou, 2008· Lieberman, 1996· Matsagouras & Helmis, 2002· Nezhad & Vahedi, 2011· Patrick *et al.*, 2011· Pereira, 2011· Peterson *et al.*, 1990· Szelei *et al.*, 2020). It is also worth noting that INSET fosters slightly or not at all collective reflection with colleagues in a contextualized way to enable them to cope with problems in relation either to a specific school context (students' and teachers' needs and background) or to the general 21st-century school context although several scholars stress the need to build upon teachers' professional experience on a contextualized basis taking into consideration the occurring ever-changing socio-educational challenges (Aronowitz & Giroux, 2010· Pereira, 2013· Öztaşkin, 2010· Szelei *et al.*, 2020· Tzotzou *et al.*, 2021).

Survey findings reveal that the inadequate use of reflective training practices results in teachers' low satisfaction with INSET methods and techniques in Greece, given that INSET slightly or not at all contributes to teachers' professional development in the 21st century, which essentially necessitates a process of INSET revision and reform regarding the implementation of more reflective training practices. Similarly, findings of other empirical studies highlight the ineffectiveness of several training programs due to their failure to implement a reflective training model (Aubusson *et al.*, 2015· Aubusson *et al.*, 2009· Borg, 2011· Butler & Schnellert, 2012· Griva, 2005· Gyftopoulou, 2010· Gantidou, 2004· Jin *et al.*, 2021· Karagianni G., 2018· Karagiorgi & Symeou, 2005· Karagiorgi, 2012a, 2012b· Kourkouli, 2015· Karagianni E., 2012· Karagiorgi & Symeou, 2008· Kovacs, 2018· Lubis, 2018· Lyle, 2003· Pereira, 2011· Pereira, 2013· Reed *et al.*, 2002· Somers & Sikorova, 2002· Symeou *et al.*, 2009· Szelei & Alves, 2018· Szelei *et al.*, 2020· Tsoulou, 2016). For instance, Gyftopoulou's (2010) quantitative research investigating INSET addressed to EFL teachers in Greece points out the fact that INSET seminars are totally based on theory and lecture without linking theory to practice through the critical reflection while another empirical research by Pereira (2013) also discloses INSET failure to treat teachers as reflective practitioners.

In other words, INSET seems to place emphasis on theory without linking it to actual school practice via individual and/or collective reflection that could launch teachers' professional experience by engaging them in a process of active critical re-

examination and revision of deep-rooted and often outdated perceptions, attitudes and practices. Likewise, previous empirical studies reveal the weakness of training programs to change teachers' deep-rooted educational 'beliefs', conceptions and/or convictions, although transformation is deemed to be an imperative socio-educational demand in the 21st century (Griva, 2005· Gantidou, 2004· Pereira, 2013· Öztaşkin, 2010· Szelei *et al.*, 2020· Tzotzou & Poulou, 2023). Especially in the last decades, the emerging global socio-educational challenges necessitate the revision of training methods and techniques in order to achieve a reflective process of individual and collective professional development which will promote 21st-century teachers' professional support and enforcement in an attempt to activate the transformation of their perceptions, attitudes and practices (Asimaki, 2005· Bjekić *et al.*, 2014· Giannopoulou, 2004· Griva, 2005· Ghosn-Chelala, 2020· Harju & Niemi, 2016· Karagianni G., 2018· Öztaşkin, 2010· Pang *et al.*, 2016· Pereira, 2013· Symeou *et al.*, 2009· Szelei & Alves, 2018· Tzotzou & Poulou, 2023).

Last but not least, findings demonstrate that INSET does not focus on activating teachers' reflection in order to enable them to fulfill a dynamic transformative role as reflective practitioners and change agents strengthening the sense of social responsibility in the era of global citizenship towards the necessary socio-educational transformation (Adams *et al.*, 2007· Haji & Cuypers, 2008· Nieto, 2000· Subreenduth, 2013). Empirical data of other studies have also pointed out the fact that INSET methods do not facilitate trainee teachers to transform their stereotypical perceptions and practices in order to be updated and adapted to 21st-century socio-educational challenges due to the lack of reflective techniques and methods (Kourkouli, 2015· Symeonidou & Phtiaka, 2009) although other empirical studies have recorded that the implementation of reflective training methods such as action research can facilitate the transformation of teachers' perceptions, attitudes and practices (Magos, 2004· Borg, 2011· Lyle, 2003· Pereira, 2011). For instance, a mixed-method study by Magos (2004) recorded significant changes in teachers' perceptions and attitudes after being actively engaged in a training program of action research related to 21st-century pedagogical issues such as the effective management of ethno-cultural differences and heterogeneity in the modern school context.

6. Recommendations for further research

Further research would definitely be useful if focusing more on the use of reflection as an INSET tool for teachers' professional development. To this end, triangulation of data collection by combining quantitative with qualitative research through semi-structured or even focus group interviews would allow more accurate conclusions to achieve a deeper understanding of the topic. Future empirical studies by Greek and foreign researchers could also investigate the same topic further via more detailed research tools focusing on critical reflection towards the expected 21st-century socio-educational transformation in order to attempt a comparison of results regarding the extent to which reflection is used adequately and effectively as an INSET tool.

7. Conclusion

The research findings reveal a severe deficit of reflective practices, which results in teachers' explicit dissatisfaction with INSET methods and techniques and, most importantly, in INSET's weakness in contributing to teachers' professional development in the 21st century via a process of critical reflection, individual and collective, towards transformation. This inadequacy of reflective practices necessitates a systematic INSET review and reform towards a more reflective training model compatible with the emerging socio-educational challenges in the era of globalization. That is to say, survey findings highlight the need for an INSET shift from simple acquisition and typical application of theoretical knowledge to critical reflection on teachers' professional experience as well as from decontextualized teaching skills to contextualized reflective skills by linking theory to actual practice towards the expected transformation of teachers' perceptions, attitudes and practices as a prerequisite to the 21st-century socio-educational transformation.

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Conflict of Interest Statement

The authors declare no conflicts of interest.

About the Authors

Maria Tzotzou is state-school teacher, PhD Student at the University of Patras, Department of Educational Sciences and Early Childhood Education, Greece.

Email: m.tzotzou@upatras.gr

Maria Poulou (PhD) is Associate Professor at the University of Patras, Department of Educational Sciences and Early Childhood Education, Greece.

Email: mpoulou@upatras.gr

Thanassis Karalis (PhD) is Professor at the University of Patras, Department of Educational Sciences and Early Childhood Education, Greece.

Email: karalis@upatras.gr

Amalia Ifanti (PhD) is Professor at the University of Patras, Department of Educational Sciences and Early Childhood Education, Greece.

Email: ifanti@upatras.gr

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