A Suggested In-service Training Model
Based on Turkish Preschool Teachers' Conceptions
for Sustainable Development

Abdülkadir Kabadayı
Necmettin Erbakan University, Turkey

Abstract

Nowadays, teacher professionalization has been upgrading and the status, training and working conditions of teachers have received a great deal of interest for sustainable education. It is recognized that if teachers are equipped with adequate professional knowledge and personal practical knowledge, they will become active curriculum planners at schools – and will have the potentials to transform from "cook" to "chef" in teaching. Therefore, in-service training of teachers is one of the most effective ways of sharing professional experiences and a medium of sustainable education in the society. Based on the existing literature, the present study was conducted to investigate the preschool teachers' needs about in-service training courses (INSET) to suggest an effective INSET model based on their INSET needs assessment for sustainable education in a Turkish setting. A questionnaire consisting of fixed-response, open-ended and Likert-style questions was administered to preschool teachers (n=133) currently working in Tokat, one of the vicinities of Turkey, to obtain information about their background characteristics and to determine their conceptions and needs for INSET for sustainable education. The study comprises two steps. As a first stage, socio-demographic structures of the INSET participants are analyzed in respect to different variables. In the second stage, the preferences of the INSET participants are analyzed regarding *before in-service training, while in-service training* and *after in-service training* process.

Keywords: sustainable education, in-service training, Turkish context, preschool teachers, DENTIS, conception

Introduction

Life is an educative experience and there is an organic connection between education and personal experience as the idea of life-long education is considered to be the keystone of the learning society. In the past, in-service teacher training has become a priority; now it is also a big challenge for sustainable education. The primary purpose of in-service training is to increase the knowledge and skills of employees and thereby increase the potential of the school to attain its goals and objectives (Che Mohd Zulkifli, 2014). For the education, this process of assessing the needs of employees can be essentially the

process of determining the discrepancy between the existing and the needed competencies of the teachers. Educators understand it as a non-linear process in that they are used to evaluate and receive its results after some time, which is characteristic to complex processes (Salīte, 2015). It is recognized that if teachers are equipped with adequate professional knowledge and personal practical knowledge, they will become active curriculum planners at schools and will have the potentials to transform from "cook" to "chef" in teaching.

It is known that some of the teachers seem to have basic teaching skills, prerequisite skills, and some theoretical teaching knowledge and may feel as "cook" metaphorically when they have graduated from the universities. Salite (2008) emphasizes that current teacher education focuses on the preparation of teachers for reflective practice and further suggests that teachers conducting reflective professional activities have to be also a researcher. At this point, it is necessary for them to be equipped with more recent knowledge metaphorically as a "Chef" to make more contribution to the sustainable education in the society in which they have been already involved. In other words, future teachers should assume the role of action researchers as their societal action expands teachers' roles from a classroom technician to an active political agent (Iliško, 2007). Therefore, as the "cook versus chef" metaphor implies, they need to develop themselves to be a "Master" by the medium of in-service teacher training courses, which is the short-cut to attain their goals for sustainable education in the society. Thus, in-service training of teachers is one of the most effective ways of sharing professional experiences. In fact, it is a sine qua non for any teachers having spent some years in teaching. Furthermore, in-set training courses can be an agent for educational change for the teachers who are ready to expose themselves to the innovations and the challenges of teaching. A teacher should be an action researcher and should continue to learn throughout his/her life as the education is a long life process. According to Tagorero, who won the Nobel Prize in literature in 1913, "A teacher can never truly teach unless he is still learning himself. A lamp can never light another lamp unless it continues to bum its own flame." Hence, no man or woman should decide to teach unless he or she is determined to learn because a true teacher is a student all throughout his life. Nowadays, teachers need to equip themselves with the most recent knowledge to balance what they know and the technological developments for sustainable education (Salīte, 2015; Ortega & Fuentes, 2015; Strode, 2013; Bentham, 2013; Cincera, 2013; Sakk, 2013; Heba EL-Deghaidy, 2012; Armstrong & LeHew, 2011; Bakutytė & Ušeckienė, 2010; Kostoulas-Makrakis, 2010; Saluma, 2007; Karagiorgi & Symeou, 2008; Wong, 2003). Based on the existing literature, this current study was conducted to analyze the preschool teachers' needs about in-service training courses (INSET), to design and suggest an effective INSET model regarding their INSET needs assessment in Turkish context as determination, designing and suggesting an INSET model provide a context to discuss ways to enhance the teaching in preschool settings in different socio-cultural context for sustainable development. The INSET model should present challenges for the deliverers as in order for this course to be effective it needs to focus on influencing teachers' attitudes towards themselves, others and the world. The aim of this course is to lead teachers towards a self-reflective awareness of their teaching philosophy and their commitment to make a difference in education and society at a larger scale. Thus, the course provided teachers with the opportunity to examine and evaluate their beliefs. This becomes a prerogative for implementing ideals of a sustainable education in practice

(Iliško, 2007). At this point, the participants may need to transformative learning which is a process involving a change in worldviews and habits of thinking and offers teachers avenues for getting involved in educational processes that enact their sense of social responsibility (Cranton, 1994; Mezirow, 1991).

Method

A questionnaire named as *Determining Educational Needs of Teachers In-Service (DENTIS)* was developed by the researcher and conducted to obtain the study data. It was constructed to obtain needs, conceptions and preferences of the teachers for sustainability. Relaibility co-efficency of the questionnaire was found to be .74. The three sections in the questionnaire consist of fixed-response, open-ended and Likert-style questions. In the first section, *DENTIS* displays teachers' background information about INSET. In the second section, *DENTIS* compromises 26 likert type questions ranging from *1 (Strongly Disagree) to 5 (Strongly Agree)*. 9 out of 26 items includes the options related to *Before-INSET course*, 9 out of 26 items comprise the options regarding *While-INSET course*, and 8 out of 26 items involve the options related to *After-INSET course*. In the third section, *DENTIS* includes an open-ended part designed to elicit what the participants think about INSET courses in general. Hence, *DENTIS was* administered to preschool teachers (*n*=133) currently working in Tokat, one of the vicinities of Turkey, to obtain information about their background characteristics and also to determine their conceptions and needs for INSET to propose a new instructional INSET model for sustainable development. In this process, content analysis technique and descriptive statistical analysis were used to analyze the data obtained via Likert-style items. 5 columns 4 intervals technique was used to determine the mean scoring intervals. The value of this interval is 4/5=0.8. Cross-tab procedure was used to classify participants' preferences, conceptions and needs to design a new instructional INSET model.

The study comprises two steps. In the first stage, socio-demographic structures of the INSET participants are analyzed in respect of different variables including the school types they graduated from, the number of the participation to INSET courses, the duration and the time and the academic career of the lecturer of the INSET courses. In the second stage, the preferences of the INSET participants are analyzed regarding *before in-service training, while in-service training* and *after in-service training* process. 22 out of 26 items are above the cut-off point of 2,60. A new INSET instructional model for the preschool teachers in Turkey is suggested on the basis of the conceptions and preferences of the INSET participants, 2,60 and above as the cut-off point.

Findings

The findings of the study are evaluated in two phases. In talking about the demographic information of the participants 44% (59) of the participants have bachelors, 26% (34) of them have pre-bachelor and 21% (28) of them have high school degrees. 52% (69) of the teachers explained that they never participated the INSET courses before while 48% (31) of them stated that they did not participate in any INSET courses. 26% (34) stated that they participated in INSET courses only once, 21% (28) explained that they participated in twice, and 5% (7) of them pointed out that they participated in INSET courses more than twice. For the place where the INSET course

to be offered, 70% (93) of them wanted INSET courses to be designed in their districts while 23% (30) required it to be planned in one of the coastal cities of Turkey. In talking about the lecturer of the INSET courses, 31% (41) of the participants wanted the experienced teachers to give a lecture to them while 60% (79) of them required the academicians to give a lecture. Given the time of the course, 53% (71) of the participants wanted the INSET courses to be planned at the beginning of the term while 34% (45) of them required it to be designed at the end of the term.

The findings are evaluated with regard to the extent of which the teachers' needs for the INSET course are met by utilizing the descriptors of *"Never", "Low level", "Middle level", "Higher level", and "the Highest level"*. A new INSET instructional model is suggested and designed on the basis of the level of importance or the INSET items such as, *"Important"*, *"Quite important"* and *"Very important"* by omitting the items with *"Not important at all"* and *"With little importance"* options.

Table 1
Participants' Conceptions about Before In-service Training Courses

No	Items	$\overline{X}$	Importance	Meeting Needs
2	The INSET courses can be carried out in any schools under the title of Ministry of National Education	3.24	Important	Middle Level
6	It is necessary that MNE (Ministry of National Education) cooperate with the Universities in INSET planning	4.39	Very Important	Highest Level
7	The INSET courses should be arranged according to the needs and interest of the participants	4.47	Very Important	Highest Level
9	Each preschool teacher should participate INSET once a 5 year period	4.37	Very Important	Highest Level
13	The center of INSET courses should be equipped with technological tools like data show and computers	4.50	Very Important	Highest Level
18	At the end of the in-service training course, the knowledge pre-school teachers will gain is important	4.73	Very Important	Highest Level
21	It is advantageous for me to visit historic and touristic places thanks to INSET training courses.	3.65	Quite Important	Higher Level

Table 1 shows the participants' conceptions about the *"before-in-service training"* courses. 2 out of 9 items related to participants' conceptions about before in-service training courses are removed due to the selection criteria of the INSET items formed. The participants are of the opinion that 7 items are ideal to display the conceptions of the participants about the before in-service training courses. The participants prefer that 5 out of 7 items including 6, 7, 9, 13, 18 meet the participants INSET needs to a highest level while 1 of the items meets their INSET needs to a higher level and 1 of them meets their needs to middle level. As education is a life-long process, every teacher is a learner. According to the report by The International Commission on Education about the needs of in-service training as a new concept of sustainable education, every individual must be in a position to keep learning throughout his life. Relevant scholarly literature in the proposed INSET course generally allow the course participants to explore, discuss and criticize the theories and their own teaching skills. The table shows that the participants seem to be reluctant and open for the positive change in education as a role of change agent for sustainability.

Table 2
Participants' Conceptions about While In-service Training Courses

No	Items	$\overline{X}$	Importance	Meeting Needs
3	The INSET course should be enriched by pedagogical courses of preschool department	4.33	Very Important	Highest Level
4	It is important for me to share teaching experiences with the preschool teachers from various provinces	4.42	Very Important	Highest Level
8	The INSET course should be enriched by professional courses of preschool department	4.45	Very Important	Highest Level
10	The course content of the INSET should be determined by the Board of INSET	3.14	Important	Middle Level
17	At the end of the in-service training course, pre-school teachers are equipped with mostly practicing knowledge	4.40	Very Important	Highest Level
19	At the end of the in-service training course, the interaction of the pre-school teachers with the participants from different cities is important from socio-cultural aspect	4.43	Very Important	Highest Level
20	The courses in the INSET training should be carried out with the interaction and co-operation of trainers and trainee	4.47	Very Important	Highest Level

Table 2 displays the participants' conceptions about the "*while-in-service training*" courses. 2 out of 9 items related to participants' conceptions about while in-service training courses are removed due to the selection criteria of the INSET items formed. The participants agree that 7 items are ideal to explain the conceptions of the participants about the while in-service training courses. The participants are of the opinion that 6 out of 7 items including the Items 3, 4, 8, 17, 19 and 20 meet the participants INSET needs to a highest level while 1 of the items, Item 10, meets their INSET needs to middle level. In identifying the training needs, many aspects have to be taken into consideration. It is really meaningful to see the very high reflections of the results of the Items 8,3 and 17 respectively in the mission-oriented pedagogy evolution of cooperative relations which is a self-evident requirement, a real condition for pedagogical relations which develop as complex and non-linear in order to find the answers that allow the re-orientation of teacher education towards sustainable development to realize (Salīte, 2015). It is true that only after some time, pedagogy can see the results of its work. Various formulations of an educator's mission also highlight it as a philosopher's, an artist's and a prophet's missions. A teacher's mission is to look at the world and to see more of what is known for society, education and science.

Table 3 explains the participants' conceptions about the "*after-in-service training*" courses. 8 of 26 items related to participants' conceptions about after in-service training courses are included in the INSET instructional design due to the selection criteria of the INSET items formed. The participants have pointed out that 8 items are ideal to display the conceptions of the participants about the after in-service training courses. The participants prefer that 2 out of 8 items including, 16 and 22 meet the participants INSET needs to the highest level while 3 of the items numbered 12, 23 and 25 meet their INSET needs to a higher level and 3 of them, Items 14, 15 and 24 meet their needs to a middle level. This shows that training program that is planned and implemented well will have a positive effect on students, teachers and schools for sustainable education.

In addition, Ficarra, and Quinn (2014) state that given the number and variety of skills associated with effective evidence-based classroom management, pre-service preparation in this area will undoubtedly need to be supplemented by in-service endeavors. Moreover, the results they indicate that teachers develop skills in the area of classroom management via both pre-service and in-service sources, with the latter source being more prominent according to participants' self-reports.

Table 3
Participants' Conceptions About the After In-service Training Courses

No	Items	$\overline{X}$	Importance	Meeting Needs
12	At the end of the in-service training course, pre-school teachers should demonstrate a sample lesson	3.69	Quite Important	Higher Level
14	At the end of the in-service training course, incentives the pre-school teachers will gain are important	2.96	Important	Middle Level
15	At the end of the in-service training course, pre-school teachers should take proficiency exam about the course	3.18	Important	Middle Level
16	At the end of the in-service training course, pre-school teachers are to be given participation certificate	4.51	Very Important	Highest Level
22	By the end of the in-service training course, pre-school teachers will have been taught how to manipulate technologic devices in the classroom	4.33	Very Important	Highest Level
23	At the end of the in-service training course, participants should be given incentives	3.45	Quite Important	Higher Level
24	At the end of the in-service training course, pre-school teachers should be made to present projects	3.37	Important	Middle Level
25	At the end of the in-service training course, INSET educational centers should ask the participants to complete a rapport about the productivity of the courses	4.10	Quite Important	Higher Level

Discussion

It is a critical period of tremendous changes in the Turkish education system as there is a transfer from teacher-centered model of teaching to a more learner-centered models. At this point, teachers' professional roles have changed from the one of a transmitter of general curriculum to that of a designer of individual educational programs. The study abounds that today many teachers have chosen to have active roles to reform the curricula and teaching approaches in their schools (Pipere and Mičule, 2014; Flores, et al., 2014; Strode, 2013; Berziņa, 2011; Pipere, Reunamo & Marion, 2010; Saluma, 2007; Tuisk, 2007). As the recent development in education opens the possibility for teachers to be the initiators of change, they are forced to use active teaching methods as the agents of transformation. Ilisko and her colleagues (2010) focus on the in-service teachers' points of views regarding their role as researchers and distinguish a key term for teachers' voice, which is defined as an expression of teachers' frames of reference. As is outlined by the authors of the paper, action research initiated by teachers provides a framework to strengthen the teachers' voice. Soobik (2014) also reports that the teaching methods used by the teachers of technology education in Estonian schools shifted from the traditional approach to teaching towards a more constructivist approach.

The teachers actively working at the schools and have a high expertise in a subject matter have to choose in-set courses to cover the gap between pre-service teachers who are still being educated mostly by the modern methods and themselves who once were educated by the traditional one in order to adapt to the tremendous changes in education for sustainability. The aim of this study was to lead teachers towards a self-reflective awareness of their teaching philosophy and their commitment to make a difference in education and society at a larger scale. Thus, it is seen in this study that research provides teachers with the opportunity to examine and evaluate their beliefs, which becomes a prerogative to implement the ideals for a sustainable education in practice, which is also stated by Iliško (2007) in her study. In this study, teacher opinions about the inset courses were investigated in relation to three stages as pre-inset course, while-inset course and post-inset course. The study put forward some important outcomes in relation to the stages in question. At the before-INSET course, the participants prefer that 5 out of 7 items including the Items 6, 7, 9, 13 and 18 meet the participants INSET needs to the highest level while 1 of the items meets their INSET needs to a higher level and 1 of them meets their needs to middle level. According to Reupert and Woodcock (2010), in-service teachers utilize classroom management practices in which they feel confident in applying even if some other strategies have been shown to be more effective. It was acknowledged that teachers begin the program with the high expertise in their field of teaching and a desire to deepen their knowledge (Ilisko, 2007). The result shows that the teachers are ready to accept and internalize the new policies and roles as curriculum leaders to ensure the sustainability of curriculum development as is also put forth by Viirpalu and her colleagues (2014) and Ülker & Mentiş Taş (2009). For the while – INSET course, the participants are of the opinion that the INSET course they would be involved in should be enriched by both pedagogical and professional courses and their mission seems to look at the world and to see more of what is known for society, education and science like in the mission-oriented pedagogy science. The participants seem to be exposed to support and attain mission driven pedagogy. Therefore, openness for the use of new, complex and developing processes are recommended and this need is also supported by the BBCC action research issue about the reorientation of teacher education towards sustainable development which clearly points out the need for promoting and increasing the society's sustainability. Salīte (2015) supports that the use of the concept of mission-oriented pedagogy now helps to reflect those cases when pedagogy and educators have not lost the highest humane ideals and the function of searching for sustainability which is characteristic to pedagogy. In this course, the essence of science and the mission of a teacher is its orientation to sustainability by the inclusion of mission-driven pedagogy that fosters the refreshment of the society. Additionally, Sakk (2013) also explains that it is important to reorient teacher education and social skills by forming the basic skills of learning and using different websites for studying since this will become crucial in the teaching of new generation due to the rapid changes of the society. The participants are of the opinion that they strongly need practical wisdom to maintain sustainable development in the society in which they live. Salīte (2015) also suggested the theme of practical wisdom in participative action research which initiated an attention to self-potention and the research of the development of complex networks features for the reorientation of education towards sustainability. At after – INSET course, the participants are of the opinion that they are strongly in need of certificates and incentives when they have completed the INSET course to maintain sustainability in society in

which they have lived. In line with this, Ficarra and Quinn (2014) found that certified teachers were good at reflecting on how they learned evidence-based classroom management practices. At the end of the INSET course, the participants wanted to be equipped with prerequisite skills to prepare projects in teaching and manipulating the technological devices as Pontes-Pedrajas and Varo-Martinez (2014) support that future teachers and environmental educators consider that concept mapping is a valuable tool to represent their knowledge about environmental education, to encourage reflexive and collaborative learning, to improve teaching communicative abilities and to use effectively ICT in the classroom. In line with this, Redman (2013) also acknowledges that teacher education for sustainability is a central part of integrating sustainability into classrooms and schools and it encompasses different forms of knowledge that embraces the normative, dynamic and action-oriented nature of sustainability. In addition to this, Wade (2012) puts forward the potential of new technologies in helping educators to play an active role in creating and promoting the learning to develop local and global communities for the sake of transformative learning for sustainable development.

Conclusion and Suggestions

It is clearly understood from the discussion above that in-service training is important for teachers at school as a tool for professional development and to escalate their knowledge and quality of teaching and learning for sustainable education in the society they have involved. Teachers are facing new challenges and changes in the education world and it is important for teachers to equip themselves with new knowledge and skills by attending in-service training as an important agent of sustainability in the society in order to play an important and effective role as an educator. Furthermore, the effectiveness of in-service training is also important to ensure that the training is appropriate and brings positive effect to the teachers. The effectiveness of the in-service training is influenced by teacher's attitudes, needs analysis and the teaching / learning methods used in the IN-SET training program for sustainable development. Needs assessment in teacher education can be challenging for a number of reasons. First, the importance of responding to teacher needs is not always acknowledged (Campbell & Kane, 2000). Then, as teachers are often attributed a minimal role in the identification of their own needs, it is important to establish a balance between INSET and individual needs for the purposes of teacher professional development for sustainable development.

As a result of the analysis of the findings above, the participants prefer that 13 out of 22 items including the Items 6, 7, 9, 13, 18, 3, 4, 8, 17, 19, 20, 16 and 22 meet the participants INSET needs to the highest level while 4 of the items, 21, 12, 23 and 25 meet their INSET needs to a higher level and 5 of the items involving 2, 10, 14, 15 and 24 meet their needs to a middle level on the basis of the criteria ranging from the highest level (5.00) to the middle level (2.60).

In conclusion, a new instructional INSET model is constructed based on the needs of the teachers in question above as in the three phases as *before-in-service; while-in-service* and *after-in-service training* courses to foster the sustainable education in the society. The results show that the teachers are ready to accept and internalize new policies and roles as curriculum leaders to ensure the sustainability of curriculum development. The participants agree that the INSET course they would be involved should be enriched by both pedagogical and professional courses and their mission seems to look

at the world and to see more of what is known for society, education and science as is also in the mission-oriented pedagogy. The participants want to be equipped with pre-requisite skills to prepare projects in teaching and to manipulate the technological devices for sustainable education.

Given the preschool teachers' conceptions and preferences on INSET course, a multitude questions warrant further research by using the survey in question as research tools, for example: Is there a difference between male and female; pre-bachelor and bachelor; INSET course participant and non-participant preschool teachers' in relation to their conceptions and preferences on INSET course for sustainable education. There is generally much to learn about preschool teachers with regard to their conceptions, preferences and views on INSET courses for sustainable education. In addition to these, it is useful to draw attention to the main limitations the researcher faced in conducting this research. First, as in all self-report questionnaires, DENTIS provides subjective data; the validity and the reliability of DENTIS need to be further evaluated, most likely by additional research techniques. Second, the participants were just limited to the teachers working in Tokat district of Turkey. Therefore, results from this study are limited in this extent and follow-up studies are necessary in order to verify the consistency and gene-ralizability of the presented data. Third, the study is limited to the Turkish educational system and culture. Therefore, further research in other countries is recommended to broaden our knowledge and understanding of the cross-cultural dimensions of teachers' conceptions and implicit theories of creativity for sustainable education.

Note: This study is the revised and the rearranged form of the submission in 2012 in Tunisia of <u>IOSTE XV International Symposium</u>.

References

Akar Öztürk, E. (2007). In-service training needs of biology teachers and observed local differences. *Education and Science, 32(143), 68–79.*

Armstrong, C., LeHew, M. (2011). Scrutinizing the explicit, the implicit and the unsustainable: A model for holistic transformation of a course for sustainability. *Journal of Teacher Education for Sustainability, 13(2), 17–43, DOI: 10.2478/v10099-011-0012-2.*

Bakutytė, R., and Ušeckienė, L. (2010). In-service training of pre-school pedagogues as a way towards sustainable development. *Discourse and Communication for Sustainable Education, 1, 58–65.*

Bentham, H. (2013). Clearing the path that has been laid: A conceptualization of education for sustainable development. *Journal of Teacher Education for Sustainability, 15(2), 25–41, DOI: 10.2478/jtes-2013-0009.*

Campbell, A., and M. Kane. (2000). Best of times, worst of times: The importance or otherwise of regular in-servicing. *Teacher Development* 4, (2) 293–302.

Che Mohd Zulkifli, C. O. (2014). The need for in-service training for teachers and its effectiveness in school. *International Journal for Innovation Education and Research www.ijier.net (2)11, 1–9.*

Cincera, J. (2013). Managing cognitive dissonance: Experience from an environmental education teachers' training course in the Czech Republic. *Journal of Teacher Education for Sustainability, 15(2), 42–51, DOI: 10.2478/jtes-2013-0010.*

Cranton, P. (1994). *Understanding and promoting transformative learning. San Francisco: Jossey Bass.*

EL-Deghaidy, H. (2012). Education for sustainable development: Experiences from action research with science teachers. *Discourse and Communication for Sustainable Education, l (3), 23–40, DOI: 10.2478/v10230-012-0002-1.*

Ficarra, L. and Quinn, K. (20014). Teachers' facility with evidence-based classroom management practices: An investigation of teachers' preparation programmes and in-service conditions. *Journal of Teacher Education for Sustainability, (16)2, 71–87, DOI: 10.2478/jtes-2014-0012.*

Flores, M. A. and Santos, P., Fernandes, S., and Pereira, D. (2014). Pre-service teachers' views of their training: Key issues to sustain quality teacher education. *Journal of Teacher Education for Sustainability, 16 (2), 39–53, DOI: 10.2478/jtes-2014-0010.*

Iliško, D., Ignatjeva, S., and Mičule, I. (2010). Teachers as researchers: Bringing teachers' voice to the educational landscape. *Journal of Teacher Education for Sustainability, 12(1), 51–65, DOI: 10.2478/v10099-009-0046-x.*

Ilisko, D. (2007). Teachers as agents of societal change. *Journal of Teacher Education for Sustainability, 7, 14–26.*

Karagiorgi, Y. and Symeou, L. (2008). Through the eyes of the teachers: revisiting in-service training practices in Cyprus. *Teacher Development*, 12(3), 247–259.

Kostoulas-Makrakis, N. (2010). Developing and applying a critical and transformative model to address education for sustainable development in teacher education. *Journal of Teacher Education for Sustainability, 12(2), 17–26, DOI: 10.2478/v10099-009-0051-0.*

Mezirow, J. (1991). *Transformative dimensions of adult learning*. SanFrancisco: JosseyBass.

Ortega, J. L. G. and Fuentes, A. R. (2015). Communication skills training in trainee primary school teachers in Spain. *Journal of Teacher Education for Sustainability, 17 (1), 86–98. DOI: 10.1515/jtes-2015-0007.*

Pipere, A. and Micule, A. (2014). Mathematical identity for a sustainable future: An interpretative phenomenological analysis. *Journal of Teacher Education for Sustainability, 16(1), 5–31, DOI: 10.2478/jtes-2014-0001.*

Pipere, A., Reunamo, J., and Jones, M. (2010). Perceptions of research in education for sustainable development: An international perspective. *Discourse and Communication for Sustainable Education, 1, 5–24.*

Pontes-Pedrajas, A. & Varo-Martínez, M. (2014). Educative experience of the use of concept mapping in science and environmental teacher training programmes. *Journal of Teacher Education for Sustainability, (16)1, 102–116, DOI: 10.2478/jtes-2014-0006.*

Redman, E. (2013). Opportunities and challenges for integrating sustainability education into k-12 Schools: Case study phoenix, AZ. *Journal of Teacher Education for Sustainability, 15(2), 5–24, DOI: 10.2478/jtes-2013-0008.*

Reupert, A., & Woodcock, S. (2010). Success and near misses: Pre-service teachers' use, confidence and success in various classroom management strategies. *Teaching and Teacher Education, 26, 1261–1268.*

Sakk, M. (2013). Coping at school – academic success or/and sustainable coping in future? *Journal of Teacher Education for Sustainability, 15(1), 84–106, DOI: 10.2478/jtes-2013-0006.*

Salīte, I. (2015). Searching for sustainability in teacher education and educational research: Experiences from the Baltic and Black Sea Circle Consortium for educational research. *Discourse and Communication for Sustainable Education, 6, 21–29, DOI: 10.1515/dcse-2015-0002*.

Salīte, I. (2008). Educational action research for sustainability: Constructing a vision for the future in teacher educatżon. *Journal of Teacher Education for Sustainability, 10, 5–17*.

Saluma, T. (2007). Changes in organisational culture in schools and readiness of teachers for those changes. *Journal of Teacher Education for Sustainability 8, 5–13*.

Soobik, M. (2014). Teaching methods influencing the sustainability of the teaching process in technology education in general education schools. *Journal of Teacher Education for Sustainability, 16(1), 89–101, DOI: 10.2478/jtes-2014-0005*.

Strode, A. (2013). Participatory action research for development of prospective teachers' professionality during their pedagogical practice. *Discourse and Communication for Sustainable Education, 4, 80–90, DOI: 10.2478/dcse-2013-0007*.

Tuisk, M. (2007). Are teachers tired of responsibilities? *Journal of Teacher Education for Sustainability 8, 37–47*.

Ülker, A. & Mentiş Taş, A. (2009). Class teachers' conceptions about in-service training (The case of Turkey). *American – Eurasian Journal of Scientific Research 4(4), 275–280*.

Viirpalu, P., & Mikser, E. K. R. (2014). Investigating Estonian teachers' expectations for the general education curriculum. *Journal of Teacher Education for Sustainability, (16)2, 54–70, DOI: 10.2478/jtes-2014-0011*.

Wade, R. (2012). Pedagogy, places and people. *Journal of Teacher Education for Sustainability, 14(2), 147–167, DOI: 10.2478/v10099-012-0014-8*.

Wong, S. S. (2003). A Narrative inquiry into teaching of in-service kindergarten teachers: Implications for re-conceptualizing early childhood teacher education in Hong Kong. *Early Child Development and Care*, 173(1), 73–81.

Correspondence concerning this paper should be addressed to Assoc. Prof. Dr. Abdülkadir Kabadayı, Necmettin Erbakan Üniversitesi Ahmet Keleşoğlu Eğitim Fakültesi Dekanlığı. Posta Kodu: 42090, Meram Yeni Yol / Meram / KONYA TURKEY. Email: akkabadayi03@gmail.com