

An Analysis of the Impact of Reflective Teaching on the Beliefs of Teacher Trainees

Yansıtımalı Öğretimin Öğretmen Adaylarının İnançları Üzerindeki Etkisinin İncelenmesi

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Abstract

The aim of this research is to measure the possible changes in the beliefs of teacher trainees on teaching profession throughout the language teaching methodology course. The trainees were asked to construct a metaphor before they took the language teaching methodology course. At the end of the academic term, the trainees were asked to construct a metaphor again. The trainees were also given a pre-test and a post-test so as to measure the effect of the methodology course they take. The results have revealed that the methodology course based on the reflective approach has led many teacher trainees to change their beliefs from a behaviorist perspective to a constructivist/cognitive one.

Key Words: Teacher Education, Beliefs on Teaching, Reflective Teaching, Metaphor

Öz

Bu araştırmanın amacı, öğretmen adaylarının dil öğretim yöntemleri dersi boyunca öğretim üzerine inançlarında meydana gelmesi olası değişiklikleri ölçmektir. Öğretmen adaylarından dil öğretim yöntemleri dersini almadan önce, öğretim üzerine inançlarını temsil eden bir metafor yazmaları istenmiştir. Akademik dönemin sonunda, aynı öğretmen adaylarına yeni bir metafor daha yazdırılmıştır. Ayrıca öğretmen adaylarına dil öğretim yöntemleri dersinde, öğretim üzerine inançlarını ölçen bir öntest ve sontest uygulanmıştır. Sonuçlar, yansıtımalı yaklaşım temelli dil öğretim yöntemleri dersinin, birçok öğretmen adayının öğretim üzerine inançlarını davranışsal perspektiften yapılandırmacı/bilişsel perspektife doğru bir değişime yönlendirdiğini ortaya koymaktadır.

Anahtar Sözcükler: Öğretmen eğitimi, öğretim üzerine inançlar, yansıtımalı öğretim, metafor.

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Introduction

Learning to teach, and accordingly, becoming a teacher, is quite a different task to fulfill for various reasons. Acquiring the knowledge, the set of skills and the dispositions necessary to become an effective teacher are crucial. Thus, it can be said that an effective teacher blends the scientific knowledge with his/her own teaching skills in line with his/her personality. An effective teacher may be defined differently in various countries and cultures depending on contextual expectations. In most cases, people expect an effective teacher to be a good observer and to have effective communication/interaction skills as well as a profound knowledge and insight on the subject matter taught. Therefore, teacher educators try to furnish prospective teachers with initial professional competence and reflective teaching skills rather than prescribed behaviors as the traditional teacher training methods would suggest. According to the reflective approach, trainees are treated as 'a teacher to be' and are encouraged to construct their teacher self through a certain set of tasks and experiences identified by the trainer and the program.

Paul (2004:2) clarifies the importance of reflective teaching saying "departments teach history but not historical thinking; education but not educational thinking, or biology but not biological thinking", which may lead us to come to a consensus on the fact that reflective practice should be taken as a whole. The trainees' beliefs on teaching and learning must be the target of all educational activities in teacher training programs. We can then, expect any positive improvement in their beliefs to result in a positive change in their attitudes as a teacher in the future. The series of experiences the trainees go through in the reflective approach should improve their understanding of teaching and their professional self.

Nettle noted (1998:194) that trainers generally focus on the following pedagogical implications in teacher education, which may give us an idea about the consensus on how to develop the 'professional self' of the learners and how to shape their beliefs in line with scientific grounds:

- encouraging activity and independence in learning;
- motivating learning;
- establishing interpersonal relations conducive to learning;
- and structuring learning.

In a tiring and lengthy process of training a teacher, the list above may be criticized in many ways. However, teacher autonomy and developing a personalized and humanistic interaction can easily be considered the main pillars of teacher education. In fact, these two are important in all kinds of educational activities, from language teaching to educating other professionals. As for the education of a teacher, the list may include some elements addressing the main tenets of the teaching profession. Three more elements may be added to the list noted by Nettle (1998):

- developing critical and creative thinking;
- establishing real life experiences for the growth of professional self;
- teaching to become reflective.

The question "How do the beliefs of teacher trainees change?" still possesses a lot of uncharted territories. However, the idea of considering the profession not only as a scientific input to be presented in courses but a new perspective to life and to learners may be the main issue on which all educationalists will agree.

Purpose of the Research

The aim of this research study is to (a) materialize an analysis of teacher beliefs and the possible effect/contribution of English Language Teacher (ELT) training methodology courses on the development of beliefs of the trainees. Also, this study may give us an idea about (b) the impact of reflective approach, and may lead to a further discussion on some of the vital issues such as teacher autonomy, assessment in teacher education and generally accepted core curricular content. Furthermore, the researcher aspires to gain an invaluable insight into the ways in which we can really figure out the complicated development of beliefs and innovative ways on assisting trainees for establishing effective beliefs.

Methodology

Nature and General Aspects of the Research

It is a fact that we cannot measure human behavior merely by quantitative tools (Tailor, 2005). Therefore, as well as exploiting a quantitative phase, this research study is mainly a qualitative one, aiming at observing the possible changes in the beliefs of teacher trainees before and after the methodology course they take. The trainees at Gazi University, English Language Teaching department were administered a pre-test and a post-test in the academic year 2007-2008 so as to measure the change in their beliefs on teaching. Then, if there is a change, the nature, direction and impact of this change should be specified. At the beginning of their methodology course, trainees were asked to construct a metaphor which represents their beliefs on teaching, and the same task was done at the end of the methodology course as well. Besides, the trainees were given a questionnaire.

Data Collection Procedure

The first phase of the data collection was to administer a questionnaire, for a survey research, to 128 participants randomly selected from 426 students taking the methodology course at ELT department. The mean age of the participants was 21.3. Eighty-two percent of the participants were females and the rest were males. 105 of the sample group have returned their questionnaires fully completed. The questionnaire with a 15-item likert scale was developed and piloted by the researcher. Apart from the piloting results (Alpha: 0.89), the instrument and the piloting process were also observed and examined by two leading experts in the field. The second phase of the data collection was to randomly choose another group of teacher trainees who would then be asked to construct metaphors illustrating their beliefs on teaching. 57 participants were selected for metaphor construction. These trainees were invited to two different sessions, each of which consisted of one hour training, to discuss some of the aspects of constructing metaphors. 51 trainees fully participated in these sessions. In these sessions, the trainees were taught only about how to construct metaphors, what makes a metaphor an effective one and that is all. The main discussion in these sessions was as follows:

- describing what a metaphor is;
- the role and use of creativity in constructing a metaphor;
- the Do's and Don'ts of metaphor construction;
- some hands-on tasks for metaphor construction, and trainer/peer feedback.

At the beginning of their methodology course, the participants constructed their metaphors which they think best describes their beliefs on teaching. At the end of the term, they were given a post-test for constructing one more metaphor. 48 participants completed their post-tests.

The metaphors of 48 participants were then analyzed and 25 of these metaphors were identified to be representative of the remainder.

In the methodology courses, the trainees are provided with the latest training syllabuses, materials, feedback, and assessment techniques. They perform micro and macro teaching demonstrations, get feedback from both their trainer and peers, and are asked to reflect on their teaching experiences before and after the teaching attempts. All these feedback sessions are used as a personal channel between the trainer and trainees. The trainees are also asked to keep a portfolio which is the dominant factor in their success or failure in the course, and they keep the assignments, feedback forms of the trainer and other selected materials in their portfolios. They are never exposed to a kind of ‘ideal’ teaching of micro and macro skills in language teaching as well as other pedagogical aspects like classroom conduct, but mostly they are led to discover ‘their way of teaching’ by standing on the scientific ground of the ELT methodology. This surely provides trainees with a sense of critical thinking, self-discovery and autonomy.

Data Analysis

This research is an integration of certain quantitative and qualitative research techniques. As for the analysis of the quantitative data, namely a survey research, the responses of the participants were gathered and analyzed with SPSS 16. Demographical features of the participants were taken into account in terms of some variables such as (a) Age, (b) Gender, (c) Family Income and (d) Secondary School Graduated. The analysis of the findings has shown that there is no relationship between age, family income and Secondary School Graduated. However, a statistically significant relation was observed between ‘Gender’ and change in the beliefs of the trainees. Female participants were observed to be more flexible in adopting and improving their beliefs (Table 1).

Table 1.
T-test Results for Gender Variable

Groups	N	\bar{X}	ss	df	T	p
Male	78	55.15	3.84	33	-318	.754
Female	27	55.56	3.046			

The main objective of this survey research was to support the main research of the study, which is the analysis and interpretation of the qualitative data, in terms of measuring whether the curricular outcomes of the methodology course are fulfilled. In this respect, the overall scores of the participants from pre-test and post-test were analyzed so as to make sure that the content and methodology of the teacher training class meets the demand of the research (Table 2).

Table 2.
Overall Scores Obtained from Pre/Post-test

	N	\bar{X}	ss	sd	T	p
Pretest	105	55.26	3.61	34	11.131	.0000
Posttest	105	62.83	2.73			

After the completion of the methodology course, it was observed that there was a significant change in the beliefs of the learners on teaching profession ($t_{(105)}=-11.131, p<.01$). While the mean of the scores of the trainees which they took before the course was $\bar{X}=55.26$, the scores obtained after the course was measured as $\bar{X}=62.83$. This finding gives us a clear idea about the content and

methodology of the course; that is, the trainer has applied a reflective model of teacher education, taken the needs and differences of each trainee into account, and set up some real life teaching experiences for which he can give constructivist feedback and guidance.

The qualitative data obtained were simply metaphors constructed by the trainees before and after the methodology course they took. Analysis of the metaphors proceeded in a manner consistent with a naturalistic inquiry approach (Lincoln & Guba, 1985 as cited in Leavy et al., 2007). For an effective categorization of the metaphors, Martinez et al. (2001) suggested a set of categorization, as follows:

- behaviorist/empiricist,
- cognitivist/constructivist,
- situative or socio-historical perspective.

The researcher asked three experts in the field to categorize the metaphors in terms of the classification of the Martinez et al. (2001). Also the researcher himself categorized the metaphors in the same way. Then the categorization of the experts and of the researcher was analyzed, and four metaphors categorized under different headlines were discussed and reclassified based on the expert consensus. Six other metaphors were not clear to the researcher and the experts, thus the students were asked to re-construct their metaphors. Some of the metaphors were not observed to be suitable for any of the categorization given above. For these metaphors, the researcher designed yet another category, namely 'Personal-Case'. Therefore, the validity of the categorization was materialized by (a) interpretation of the independent researchers, (b) comparing the categorizations of experts and researcher which was finalized by an expert consensus, (c) gathering additional data from the focus group (N=51) and finally by (d) referring to previous research studies.

Results

After the completion of the sessions on how to construct effective metaphors, the participants were asked to construct a metaphor reflecting their beliefs on what teaching means to them. 48 of the participants fully constructed their metaphors.

Analysis of the metaphors constructed at the beginning of the year within the framework presented by Martinez et al. (2001), the researcher found out that before the methodology course, 52% of the participants were found to hold behaviorist metaphors, 19 % constructivist metaphors, 12% situative metaphors, and 17% presented metaphors categorized as personal case (see Table 3).

Table 3.

Classification of the Metaphors (Pre-test)

Behaviorist %	Constructivist %	Situative %	Personal Case %
52	19	12	17

As is seen in Table 3, most of the trainees interpret teaching and learning from the behaviorist perspective. This may be due to some reasons. First, most of the language teaching instruction in the country is still carried out in a behaviorist fashion, and these trainees were taught English accordingly. Second, the role of the teacher in these trainees' metaphors is someone who transmits the knowledge, and the learners' role is to acquire whatever they are exposed to. This context of learning and teaching may be seen as the reflection of the common sense of the society. As for the example of behaviorist metaphor presented in Table 4, the teaching profession is resembled to baking bread. At first sight, the metaphor looks more like a constructivist/cognitive one. However,

the baker is restricted with strict rules and all he needs to do is to follow the steps for producing tasty bread. He does not have to think about different ways, or different kinds of bread. Very few metaphors were classified as cognitive/ constructivist (19%). The constructivist metaphors referred to notions of organization and elaboration of knowledge by students, to their active role in restructuring experiences and achieving conceptual coherence, to the understanding of theories and concepts, and to the development of general skills, intrinsic motivation and transfer (Martinez et al., 2001 as cited in Leavy et al., 2007). In these metaphors, teachers are the guides and facilitators, aiming at developing their interaction with the students so as to support them in their learning process with a humanistic perspective. As well as being competent in their field, the teachers in constructivist metaphors are more open to discover with their learners in various group and project studies. An example of constructivist/cognitive metaphor is provided in Table 4. A small percentage (12 %) of the teacher trainees expressed a situative understanding of learning in a metaphor (Table 4). The main tenet of this perspective is that knowledge is created and made meaningful by the context and activities through which it is acquired (Prestine & LeGrand, 1991, p. 62).

Though the four categories of different perspectives of teaching were accentuated, the popular metaphors constructed in the pretest came out as follows: teaching is like a sports game (f=12), like playing a musical instrument (9), like some certain design works like building an apartment and designing a machine (f=5), and like a field of arts (f=2).

Table 4.

Metaphors constructed in Pre-test

Type*	
B	Teaching resembles baking. After you find the necessary ingredients, you can bake your bread. However, it is not that easy to make it. You need to follow the exact steps of baking and you need to obey the statements suggested in the recipe. You may have the best flour, salt, or other fine quality ingredients, but they do no good if you just mix them together and expect to make tasty bread. You should take the right steps and do a lot of practice.
C	Teaching is like helping one of your relative getting prepared for a dancing competition. You need to encourage her a lot because before an important dance competition, she can easily get discouraged. Also you need to give her necessary feedback without reservation because if you want her to improve her skills, you should always give accurate and realistic feedback. When she gets tired of practice, you should help your relative recall her purpose so that she can concentrate on the practice. You should also share your experience, skills and knowledge with her so that with a different perspective she obtained from you, she can develop even faster.
S	Teaching is like putting on make-up. I believe that knowing how to put on make-up is a very hard thing and a very special ability. Without make-up, ladies may resemble each other somehow, someway. But after a nice make-up, you can display the most beautiful parts and aspects of ones beauty, and hide some slight defects. Of course, make-up requires expertise as it is a profession, even the softest, loveliest science. Thus, one should spend some years to learn it. Those who are open-minded, inquisitive and analytical can be effective make-up experts because you need to understand the needs of those you are putting on making up. Then, you must observe her face carefully, and decide on the application of the make-up by always baring in mind your plan. It takes time, god knows it does. So during this time, you must find a way to entertain your client and help her endure. At the end, all you have is a beautiful face.
P-C	Teaching is like reading a novel. Every single page you read brings new lives and stories in your life. With the new novels, you begin to see that you enlarge your horizons and stretch your thinking boundaries. However, when reading the book, you also make many guesses about the following pages, and sometimes like the author, you may make up stories based on the events in the novel. Patience and dedication are necessary to become a good reader. After reading a lot, you will see that what you have read has changed your life.

A tenor is a part of a metaphor which is the subject to which attributes are ascribed (Richards, 1936). The distribution of choice of the metaphors in terms of 'tenor' may not necessarily give any idea on the improvement of the beliefs of the trainees. However, in the post-test the tenors display some changes, which can be associated with the nature of the change in the belief of the teacher trainees on teaching.

After 14-weeks/8 hours of methodology course, the students were asked to construct another metaphor which represents their beliefs on teaching. The researcher found out that after the methodology course, 28% of participants were found to hold behaviorist metaphors, 46% constructivist metaphors, 14% situative metaphors, and 12% presented metaphors categorized as personal case (see Table 5). Analysis of the categorization of the metaphors at the post-test stage indicates a significant drop in the number of behaviorist, a sharp increase in the proportion of metaphors classified as constructivist, and a slight increase personal-case and situative metaphor categorizations (Table 5).

Table 5.

Classification of the Metaphors (Post-test)

Behaviorist %	Constructivist %	Situative %	Personal Case %
28	46	14	12

The findings of the post-test show that as the constructivist/cognitive perspective of teaching was adopted by the trainees (pretest: 19% and post-test: 46%), a teacher training course grounded on a reflective view of teacher training has a strong impact on the development of the beliefs of teacher educators on teaching. A number of factors may have influenced this increase. A strong factor is that the trainees were not assessed through a classical and product-oriented view of evaluation. Conversely, they were evaluated by some set of process-oriented view of testing, which may integrate the learning and testing process, leading students to establish more effective learning strategies. Another factor for the development in beliefs is that the students were not given any grade in their micro and macro teaching attempts, which may have led them to develop a reflective look to their experiences. Some examples for post-test categorizations are given in Table 6.

Table 6.
Metaphors constructed in Post-test

Type*	
B	Teaching is like building an apartment. However, in order to build a safe and comfortable apartment, you need to know the science of civil engineering and have a lot of experience in the field. Nevertheless, there may not be enough if you do not follow the innovations in civil engineering. Also, you cannot just begin the construction. You need to have a plan, a team, necessary resources and a desire for doing your job. If you lack just one of these, you cannot construct your apartment. Besides, you need to know for whom you are building the apartment: for the rich or poor? Or for the students or large families. You need to consider the clients who will buy the apartment. Rich or poor people? Married or bachelor people? Large families or small families? All those factors, and even more, should be considered.
C	For me, being a teacher is exactly like running a greenhouse. There are some kinds of plants which can only be grown in a greenhouse. By protecting your plants from the hazards of the outer world, you spend a lot of time, energy and dedication and grow your plants. At first, you will see that you are spending a lot of time and money, but all you got is an empty and humid greenhouse full of small plants. You need to be patient and understanding since plants does not grow over night. However, time passes and the plants grow. They look wonderful and full of vegetables and fruits. Now you are rich because everybody admires your harvest. You know that all these plants grow and become strong and healthy creatures thanks to your efforts.
S	Teaching is like painting. You need to develop your skills and knowledge before producing good paintings. You need to know the secret of the colors. Also you must have something to discuss in your pictures, which is the message you want to give to your fans. When painting, you must be cautious and alert so as not to ruin your work. People may think that you are doing your job slowly and there is little progress. However, you know that no painting can be completed over night. As you love what you have created, you always want it to be a masterpiece appreciated by everyone. That's why you do your job carefully and sensitively. Also you are always open to criticism..
P-C	I think teaching is like paragliding. I mean it is risky in some way. Before the jump you choose the hill you will jump off. You will also examine the area and you need to prepare yourself for the possible threats, and take all the necessary precautions for a safe paragliding. There is always a possibility of failure as well as success. However, you need to take the risk of jumping. Maybe, your parachute may not function and you may get very close to the end. No matter how hopeless the situation is, there is always a chance of saving your life and land on the ground smoothly.

The most popular metaphors constructed in the post-test were as follows: teaching is like a sports game (f=7), like playing a musical instrument (f=10), like some certain design works like building an apartment and designing a machine (f=6), and like a field of arts (f=12). As mentioned previously, the tenors of the metaphors are not a significant factor in deciding participants' metaphor to be a representation of a behaviorist or a constructivist belief in teaching. Nevertheless, it may be considered that the remarkable increase in the number of tenors like arts and playing a musical instrument may be one of the explanatory evidences in understanding the change from a behaviorist/empiricist perspective to a constructivist/cognitive one (Table 7).

Table 7.
Frequency of Choice of Tenors in Metaphors

Groups	Sports	Musical Instrument	Designing & Construction	Arts & Acting
Pre-test	12	9	5	6
Post-test	7	10	6	12

Discussion

The analysis and interpretation of the metaphors constructed by the teacher trainees at the pre-test phase of the study has clearly shown that more than half of pre-service teachers possessed basically behaviorist understanding of teaching and learning. This finding is in accord with the previous studies (Richardson, 1996), indicating that the premature beliefs on teaching may regard it as a transfer of knowledge, which is a simplistic and a naïve belief. A quite low percentage of the constructivist metaphors is surely the indicator of the nature of the instruction the trainees were exposed to in their previous education. In the related literature, it is also claimed that the teacher trainees are disposed to develop their survival skills as a novice rather than their ontology's and epistemologies (Leavy et al., 2007).

Reflective practices have the potential to provide the link that that will bridge the ever-widening gap between the theory and practice of professional preparation (Leavy et al., 2007: 14). The examination of the results of post-test has revealed that the reflective practice in teacher training do have a very strong effect on the beliefs of trainees, which can be considered as a momentous development in their professional self. Trainees, exposed to some set of tasks through which they are led to ask critical questions on their experience and are provided a learning context in which they can reflect upon their experiences, display a shift from a behaviorist perspective of teaching to a more constructivist one. This finding can be supported by some of the feedback taken from the participants in this study. Many of the trainees claimed that their attitudes have changed towards students where they teach in their practicum. As was observed by the researcher throughout the practicum of the trainees, becoming more patient and empathetic when teaching and improvement in their spontaneous observation skills leading them to adjust their lesson plans were some of the strong indicators of 'the change' the trainees claimed. Teaching as a profession surely constitutes so much knowledge needed to be personally shaped and developed as well as its scientific grounds. In this context, what we have observed was that the effective adoption and application of the scientific grounds of teaching was mostly based on personalizing the input and teaching it through some set of teaching experiences tailored by some critical questions and feedback.

While a significant change was not recorded in the frequency of 'situative' metaphors, we can claim that the decrease in the number of 'Personal Case' metaphors, which cannot be classified under other categories, is an indicator of the development in the beliefs of teacher. At least, it shows that most of the trainees know what teaching is like, whether their perspective is a cognitive, constructivist or a situative one.

Conclusion

There is a general consensus on the idea that teacher trainees bring profoundly grounded beliefs and values about teaching and learning to their professional educational process (Kagan, 1992; Pajares, 1992). No doubt the novices will stand on their beliefs on teaching and learning in front of their students, and behave in accordance with how they perceive learning and teaching. In this context, the quality of the teacher education can be evaluated by the change and improvement it materializes in the beliefs of the trainees throughout the faculty years. In this study, we try to reveal the nature of this change so as to understand the process through which trainees develop their 'professional self', and in a sense, evaluate the impact of reflective process in terms of its possible influence against the beliefs and dispositions acquired naturally in educational lives of the trainees. The pursuit of gathering representative, reliable and valid data has led us to decide on asking teacher trainees to construct metaphors before and after their methodology courses. Apart from their value and richness for the researcher, the metaphors

constructed by the trainees have also assisted them to ponder over the question of ‘How to develop my professional self’ and surely led them to reach awareness in their journey of becoming a teacher. The results were promising for the researcher in some aspects. First, the effect of reflective practice was measured in Turkish context, specifically at Gazi University. It is a known fact that reflective approach in teacher education requires so much institutional experience and culture, and it would be unwise to consider that there is only one way or some ways of designing an effective reflective practice in any institution. Second, the results have revealed that the formulas, generalizations, dispositions and any kind of beliefs on learning and teaching can be modified and updated mostly by designing some set of educational experiences supported by a personalized way of instruction and by some critical thinking tasks. Third, the results have shown that the trainees feel more comfortable and confident when they observe the evidence of a growing ‘self’ based on a scientific field. No doubt, this field of research merits more studies to reveal the lifespan and impact of the beliefs developed through the reflective practice.

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