

MIND LAB TURKEY RESEARCH

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INTRODUCTION

Problem

Education is a very important field because of the role it plays in the lives of individuals, societies and nations. As a matter of fact, education is a topic of continuous discussion for improvement in terms of its goals, content and methodology. The humanity handles education through the society it has created itself, while the government handles it through organs such as the academic communities and non-governmental organizations. Therefore, very powerful methods of education have come to existence.

Mind Lab is such an education/teaching system that aims at improving education within a world scale. Mind Lab system is based on enhancing and functionalizing the education process put into practice where both the students and the teachers richly benefit.

The theoretical bases of this system are within the axis of progressivity and constructivist approach. Arguing that the students need more than what traditional approach suggests (retrospective knowledge), progressivist approach aims to allow students to observe the needs of their own lives as well as to progress in line with their interests, skills and curiosity. However, through taking the strong aspects of the traditional approach into consideration, it focuses on learning from experiences where students take an effective role in their own learning alongside with the curricula designed specifically for their needs.(Dewey, 2007).

This is because education has both conservative and reconstructivist approaches. Education is conservative due to its mission to transfer the cultural heritage to the new members of the society and has also a reconstructivist aspect since it provides the opportunity to change the culture with language and technology, and thus socializing the new members with the transfer of cultural experience. Considering the world to be in a constant changing process, Dewey accordingly argues that the cultural structures of societies are open to change. It is possible to have a control on this change through using the scientific method. (Dewey, 1996).

The progressivist approach argues that the objective of education is to provide a cultural environment that matures the individual and to provide them with the language, knowledge and abilities that help them to take part in the social life while emphasizing the relation between the society and education. The school and education provide the individuals with the symbols and language tools necessary for interacting with the society and identify a thinking process that help them grow. Therefore, the progressivists reject separating the knowledge from experience and avoid presenting the knowledge by dividing it into parts. They support the idea of diversity in the curricula and argue that the curricula should include the problem-solving-oriented learning activities (Ozmon and Craver, 2008). According to this approach thinking and acting are integrated with each other; in other words, theory and practice cannot be separated from each other (Dewey, 1996; 2007).

In other words, Mind Lab methodology aims to contribute to the process of acquiring the cognitive, social, emotional and ethical competencies. The students acquire these skills and competences through games, which are created according to their age groups. Through a curricula and games designed for children between 4-15 years of age, Mind Lab Methodology has been applied in many countries throughout the world. Mind Lab has also been applied in Turkey since the 2006-2007 academic year, Aiming to teach the students the abilities to discover, to learn and to transfer what is learnt through game-based processes, this system might be really meaningful and contributive to the primary and secondary school education which have been recently reconstructed by the Government as (4+4+4) and which will be put to practice in the coming academic year: 2012-2013. As a matter of fact, a new subject called “Games and Physical Activities” has been added to the course schedules starting this academic year within the frame of the above mentioned structuring.

The progressivist approach states that education has a major role in human communities. Community activities contribute to the development of social intelligence, and the classes and the schools are the smallest community models where the participants work together and find solutions to the problems they encounter. The students, brought together by common objectives and practices, learn not only to live together but also be a member of the community where they share their opinions and behaviors (Guttek, 2001). Mind Lab method, in accordance with this philosophy, provides the students with the practices (games) where they acquire competencies in cognitive, emotional, social and ethical fields while they head

towards common objectives. In other words, it provides a frame where they transfer the theory to practice.

The progressivist approach has made the student determine his own learning by giving him/her an active role in the learning process. The role of teacher within this process is to organize the learning environment, to lead the learning activities of the students, to help the students match the knowledge with their personal experience, while the role of the students in this process is to question, to obtain information about the situations that affect them and to adapt to the society and to maintain their lives (Ozmon ve Craver, 2008).

Based on the progressivist educational approach, the problem solving method suggested by Dewey is different from the educational method that is based on the determination of the teacher within the context of traditional classroom. What is fundamental in this method is that the individuals should seek for solutions collectively when they encounter a problem and act autonomously and create an internal discipline, and the teacher's role should be leading rather than determining. In this teaching approach, leading is conducted only for the solution of some problems and the student is in the center of the learning process instead of the teacher. In this method, the teacher avoids putting pressure on the students while leading them, and rather supports the realization of the learning process. Therefore, it supports the development of students' internal disciplines. The teachers support the students to help them set their own learning objective, take actions to reach these objective and evaluate their results (Dewey, 2007; Ozmon and Craver, 2008).

Mind Lab System that is developed based on the progressivist philosophy also relies on constructivism approach which has a close relationship with this philosophy. The roots of constructivism might be grounded with the philosophical and educational approach of John Dewey as well as with the studies of theorists such as Piaget, Vygostky, Gestalt Okulu, Barlett and Bruner (Woolfolk, 2007). One of the most remarkable distinctions in constructivist approach, which considers the learning process as a construction process created by the individual, is about the cognitive and social constructivism.

Emphasizing the structuring process within the context of the cognitive development of individuals, Piaget argues that the knowledge's representation in human mind is internalized

through processing it the mind; in other words, the human mind internalized knowledge through its own cognitive structures (Glaserfeld, 2007). Although this argument was mentioned by some philosophers (Hume, Kant, etc) at a philosophical level as an answer to what reality is and how does the human mind know it (Özlem ,2010), Piaget legitimated this argument with his studies on a psychological platform. However, focusing on individual in the process of structuring the knowledge , Piaget was criticized for making a limited emphasis on environment's effect in his theory (Westen, 1999).

On the other hand, approaching from a different aspect of constructivism and emphasizing the effect of environment, especially the inner environment in structuring the knowledge and in realizing the learning process, Russian psychologist Vygotsky argues that knowledge is built upon social interactions and experiences, and learning is realized according to both interaction (particularly consultancy, being a model, etc.) and to the previous knowledge, beliefs and thoughts of the individual (Woolfolk, 2007). As can be understood from this Vygotsky gives the teacher the role to mediate and facilitate while learning is put into practice.

Mind Lab System presents an approach that allows teachers to lead students in a more effective way while aiming at developing the competencies of students in different fields. The objective of mediative teaching approach is to include both the student and the teacher during the educational process and to improve their transferring skills.

Within the scope of the frame described above, it has become very important that the effect and contributions of Mind Lab system for the schools, should be evaluated in a scientific approach. We think it is of utmost importance to focus not only the students but the teachers as well.

Although the effectiveness of Mind Lab System has been evaluated in the countries it is applied through various researches, its success and effect have not been researched in a systematic way at schools in Turkey. Therefore, we are going to make a research that aims at determining the effects and contributions of Mind Lab System which is being applied at 55 schools in Turkey.

Objective

The objective of the research is to determine to what extent the practices put within the scope of Mind Lab System achieve the expected goals. In this research we are going to examine the contributions of Mind Lab System practices by evaluating the experiences of teachers and students qualitatively and quantitatively in accordance with this main goal.

METHOD

In this study, patterned in the mixed model, we are going to discuss the developments in cognitive, social, emotional and ethical competencies of the students in Mind Lab classes designed according to the Mind Lab curricula in a qualitative and a quantitative way, while discussing the experiences of the students and teachers in this process (transferring skill /mediative teaching) in a qualitative approach. We are going to use different data collecting techniques for this.

Tools

Measurement tools for the student

Achievement tests

The achievement tests consisting of 25-30 questions, prepared by specialists in their field will be given to 2-4th and 6-8th Grades during the 5th, 10th weeks and at the end of semester at schools participating in the research in accordance with the curricula of Math and Turkish-Language classes. And these tests will be applied in all schools participating in the study simultaneously as a “common exam”.

Sentence completion test

The test consists of questions to be answered by a total of 600 students. 100 students are randomly chosen from each grade level (2,3,4,6,7,8) . These students have not taken Mind Lab classes before. These questions have been prepared for all age levels according to the objectives of that age (**Annex 1-6**). The application of these questions has two stages, one of which is at the beginning of the semester while the other one is at the end. The objective of using these questions is to evaluate in what degree the students acquire the emotional, social and ethical competencies aimed by Mind Lab at knowledge level.

Measurement tools for the teacher

Teacher self-efficacy scale

In the research we are going to determine the self-efficacy of the teachers who started mind lab practices for the first time through the *Teacher Self-Efficacy Scale (ÖÖYÖ)* developed by Tschannen-Moran and Woolfolk-Hoy (2001) and of which Turkish adaptation is practiced by Çapa and his friends (2005) in Turkey on 628 candidate teachers from different universities (**Annex 7**).

ÖÖYÖ consists of 24 articles of which 8 measuring the “Competency of Encouraging Student’s Participation” (articles 1, 2, 4, 6, 9, 12, 14, 22) and 8 measuring the “Teaching Strategies Competency” (articles 7, 10, 11, 17, 18, 20, 23, 24.) and 8 measuring the “Classroom Management Competency” (articles 3, 5, 8, 13, 15, 16, 19, 21).

Scale 9 is in “likert” type. According to this type 1 describes “incompetent”, 3 describes “very little competent”, 5 describes “a little competent”, 7 describes “quite competent” 9 describes “very competent”. The scoring of the scale is determined through calculating the total score average (Çapa and et al., 2005; Tschannen-Moran and Woolfolk-Hoy, 2001).

The analyses in structure validity in the Turkish adaptation of the scale have supported a three-dimensional structure repeating the factorial structure of the original form. ÖÖYÖ Cronbach Alpha (a) coefficients are .93 for the entire scale, .82 for the Competency of

Encouraging Student's Participation the sub-dimension, .86 for the Teaching Strategies Competency sub-dimension and .84 for the Classroom Management sub-dimension (Çapa et al., 2005).

This measurement tool will be applied on the teachers participating in the beginning and at the end of the first semester.

Classroom observations and teacher meetings

It is planned to make classroom observations during the Mind Lab classes and the classes such as Turkish Language, Math, Science of Life (Social Studies, Science) to understand the knowledge and transfer levels of the teachers and the students. It is planned to follow and record one of classes the teacher's taking part in the study, in addition to the mind lab class. Based on the information obtained through these observations and sentence completion tests applied on the teachers, we are going to prepare questions for the personal meetings to be conducted with the teachers. These meetings will be carried out until the end of the semester and will involve 50 teachers selected according to the different features of the teachers (their seniority, gender, teacher self-efficacy levels, etc).

Measurement tools for the parents

Evaluation survey

The survey consists of questions aiming to learn parents' opinions about the application of Mind Lab. It is planned that this survey will be filled by the parent at the end of the semester (**Annex 8**).

Procedure

This mixed model research will consist of stages where different data collection and analysis processes will be done simultaneously.

The Quantitative Stage

A.

1. Applying the achievement test for the students during the 5th week of the semester
2. Applying the achievement test for the students during the 10th week of the semester
3. Completing the Mind Lab application for the first semester
4. Applying the achievement test at the end of the semester
5. The analysis of the development shown by the students in the achievement tests (Math, Turkish Language, Science, Social Sciences, etc)

B. To measure the social, emotional and ethical competencies

1. Applying the sentence completion test at the beginning of the semester
2. Putting the Mind Lab application into practice
3. Applying the sentence completion test at the end of the semester
4. Quantitative and qualitative analysis of the social, emotional and ethical development of the students

It is planned to evaluate the developments in these fields according to the features such as being a group, collaboration, cooperation, asking for help, obeying the rules, understanding the desires of the opponents, delay of gratification, determination, curiosity, taking risks, avoiding the dangers, etc. Such evaluation can be interpreted qualitatively and quantitatively.

C. The objective is to quantitatively evaluate the contribution of the Mind Lab application to the teacher by measuring the teacher's self-efficacy levels as pre-test and end-test.

D. Applying the evaluation survey for the parents

The Qualitative Stage

A. Making the classroom observations throughout the semester

B. Conducting teacher meetings at the end of the semester

Participants

The sample planning of the study in different stages is as follows:

1. **Achievement test application:** The experimental group will consist of all the students studying at 2nd, 3rd, 4th, 6th, 7th, and 8th grades at the schools where Mind Lab application is practiced. In this evaluation it is planned that the control group will consist of students selected from 5 public schools and 5 private schools that would not take part in the Mind lab application and that are similar to the schools where Mind lab application is practiced in terms of other features (SED, classroom size, etc).
2. **Sentence completion test:** The test will be applied on a total of 600 students, 100 of which are randomly selected from grade levels (2,3,4,6,7,8) in the grades stated at schools and of which others are the ones who have not participated the Mind Lab training.
3. **Teacher self-efficacy:** It is going to be applied two times at the beginning and at the end of the semester on all the teachers who start practicing Mind Lab for the first time.
4. **Teacher meeting:** Meeting will be carried out with 50 teachers selected according to the different features of the teachers (seniority, gender, teacher self-efficacy levels, etc).
5. **Classroom observation:** It will be carried out with 50 teachers selected according to the different features of the teachers (seniority, gender, teacher self-efficacy levels, etc).
6. **Parents survey:** It will be applied on the parents of all the students participating in the study.

THE CALENDAR

- August 2012:** Applying the teacher self-efficacy scale for the teachers who will take part in the Mind Lab application for the first time (Annex 8)
- September 2012:**
1. The finalizing of the sample numbers (with the researchers and Mind lab group)
 2. The preparation of the common exams to be applied during the 5th week of the Semester by the teachers
- September 17-21, 2012:** Application of the sentence completion test
- October 15- 19, 2012:** Giving common exams(5th Week)
- September 2012- October 2013:** Making classroom observations
- September 2012- November 2012:** Preparation of the parent surveys by the researchers
- October 2012:** The preparation of the common exams to be applied during the 10th week of the semester by the teachers
- November 19-23, 2012:** Giving the 2nd common exams (10th Week)
- December 2012:**
1. Applying the parents surveys
 2. The preparation of the common exams to be applied at the end of the semester by teachers
- January 21-25, 2013:** 3. Giving the common exam (The end of the semester)

January 14 –January 25 2013: Applying the teacher self-efficacy scale for the second time for the teachers who have taken part in the Mind Lab application for the first time (Annex 8)

January 2013: Preparation of teacher meeting questions (based on the classroom observations)

January 14- February 28 2013: Conducting teacher meetings

January 2013-March 2013: Data analysis as in the order below,

1. The statistical analysis of the parent surveys
2. The statistical analysis of the achievement tests
3. The statistical analysis of the teacher self-efficacy survey
4. The quantitative/qualitative analysis of the student sentence completion test
5. The qualitative analysis of teacher meetings

April 2013: Reporting

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ANNEXES

ANNEX. 1

Sentence Completion Test for the Level of Grade II

1. When I encounter a problem....
2. When I need help....
3. If a friend of mine hits me.....
4. If I have difficulty in solving a problem...
5. When playing a game ... to win
6. If I want the same thing as my friend...
7. If a friend of mine wants to play the same toy I want to play ...
8. When a person helps me....
9. If I lose during the game...
10. If I get a low mark in an exam...
11. When I make a mistake...
12. While choosing the move I will make during a game...
13. What makes me happy the most while playing the game.....
14. A good player.....
15. While playing a game it is important.....

ANNEX. 2

Sentence Completion Test for the Level of Grade III

1. While playing a game with my friends...
2. If I lose during the game...
3. If I get a low mark in an exam...
4. When I want to achieve a goal...
5. To find my way in a city I don't know...
6. When it is necessary for me to solve a problem quickly...
7. To become a real champion...
8. To have true knowledge in a subject...
9. While making puzzles...
10. If a friend of mine says words that hurt me...
11. When I'm faced with a mysterious situation...
12. While learning a new subject...
13. If I have difficulty in solving a problem...
14. When playing a game ... to win
15. If I make a mistake...
16. While choosing the move I will make during a game...
17. What makes me happy most while playing games.....
18. A good player.....
19. While playing a game it is important.....

ANNEX. 3

Sentence Completion Test for the Level of Grade IV

1. If I lose while playing a game...
2. If I get a low mark in an exam...
3. When I want to achieve a goal...
4. The first step necessary to solve a problem...
5. When there are more than one way for me to achieve a goal...
6. The best way to handle a problem...
7. Before acting...
8. If I have difficulty in solving a problem...
9. While playing a game ... to win
10. When I make a mistake...
11. While choosing the move I will make during a game...
12. What makes me happy most while playing games.....
13. A good player.....
14. While playing a game it is important.....

Annex. 4

Sentence Completion Test for the Level of Grade VI

1. When I encounter a problem...
2. If the solution I find does not work in solving the problem...
3. If it is not possible to avoid risks during a game...
4. If I lose while playing the game...
5. If I get a low mark in an exam...
6. When I want to achieve a goal...
7. While playing games with my friends...
8. If I have difficulty in solving a problem...
9. While playing a game... to win
10. A good group member...
11. When I make a mistake...
12. While choosing the move I will make during a game...
13. What makes me happy most while playing games.....
14. A good player.....
15. While playing a game it is important.....

ANNEX. 5

Sentence Completion Test for the Level of Grade VII

1. When I encounter a problem...
2. If the solution I find does not work in solving the problem...
3. If it is not possible to avoid risks during a game...
4. If I lose while playing the game...
5. If I get a low mark in an exam...
6. When I want to achieve a goal...
7. While playing games with my friends...
8. If I have difficulty in solving a problem...
9. While playing a game... to win
10. A good group member...
11. The best way to solve a problem...
12. When I make a mistake...
13. When telling what I need to my group mates ...
14. While choosing the move I will make during a game...
15. What makes me happy most while playing games.....
16. A good player.....
17. While playing a game it is important.....

ANNEX. 6

Sentence Completion Test for the Level of Grade VIII

1. When I encounter a problem...
2. If the solution I find does not work in solving the problem...
3. If it is not possible to avoid risks during a game...
4. If I lose while playing a game...
5. If I get a low grade in an exam...
6. When I want to achieve a goal...
7. While playing games with my friends...
8. When I encounter a problem that is difficult to solve...
9. While playing a game ... to win
10. A good group member...
11. When I encounter with new conditions while applying a plan...
12. What I need to do to solve a complex problem...
13. When I encounter a trivial problem while solving a problem...
14. If I have a conflict with one of my friends...
15. When I make a mistake...
16. While choosing the move I will make during a game...
17. What makes me happy most while playing a game.....
18. A good player.....
19. While playing a game it is important.....

ANNEX. 7

Teacher Self-Efficacy Scale

Please read the articles below carefully and indicate in what scale you find yourself competent for the situation given in each article by marking (circling) the most appropriate choice given with each of the articles.

Incompetent **Very little competent** **A little competent** **Quite competent** **Very competent**
 <----->

1 2 3 4 5 6 7 8 9 >----->

	Incompe tent		Very little		A little compe te		Quite compe te		Very compe te nt
1. How can you manage to reach the students for whom it is difficult to study?	1	2	3	4	5	6	7	8	9
2. How much can you help students in thinking critically?	1	2	3	4	5	6	7	8	9
3. To what extent can you ensure controlling the behaviors that affect the classroom negatively?	1	2	3	4	5	6	7	8	9
4. How much can you motivate the students that show less interest in the classes?	1	2	3	4	5	6	7	8	9
5. How much clearly can you describe your expectations about the student behaviors?	1	2	3	4	5	6	7	8	9
6. How much can you help the students believe that they might be successful at school?	1	2	3	4	5	6	7	8	9
7. How well can you answer the difficult questions of the students?	1	2	3	4	5	6	7	8	9
8. To what extent can you ensure that the classroom activities are carried out regularly?	1	2	3	4	5	6	7	8	9
9. To what extent can you ensure that the students give value to learning?	1	2	3	4	5	6	7	8	9
10. How well can you evaluate whether the students comprehend what you teach?	1	2	3	4	5	6	7	8	9
11. To what extent can you prepare questions that allow the students to evaluate themselves effectively?	1	2	3	4	5	6	7	8	9
12. How much can you help students develop their creativity?	1	2	3	4	5	6	7	8	9
13. To what extent can you ensure that the students abide by the classroom rules?	1	2	3	4	5	6	7	8	9
14. How much can you help an unsuccessful student to understand the lesson better?	1	2	3	4	5	6	7	8	9
15. To what extent can you calm the students that affect the lesson negatively or that make noise?	1	2	3	4	5	6	7	8	9
16. How well can you create a classroom management system appropriate for different student groups?	1	2	3	4	5	6	7	8	9
17. To what extent can you ensure that the lessons are appropriate for the level of each student?	1	2	3	4	5	6	7	8	9
18. How much can you use different evaluation methods?	1	2	3	4	5	6	7	8	9
19. How well can you prevent some problematic students from ruining the class?	1	2	3	4	5	6	7	8	9
20. How many alternative explanations or examples can you provide for the students when they are confused?	1	2	3	4	5	6	7	8	9
21. To what extent can you deal with the students when they show behaviors that ignore you?	1	2	3	4	5	6	7	8	9
22. How much support can you show for the families to help them make their children become successful?	1	2	3	4	5	6	7	8	9
23. How well can you use different teaching methods in the classroom?	1	2	3	4	5	6	7	8	9
24. To what extent can you provide the appropriate learning environment for students that are very talented?	1	2	3	4	5	6	7	8	9

ANNEX. 8

Parents Survey

The questions of this survey, which will be applied at the end of the semester, are being developed.