School Policies and Practices at Upper Secondary Schools in Turkey According to PISA 2009 Data

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In this study, the question "According to PISA 2009 data, what is the situation of the school policies and practices at upper secondary schools in Turkey?" was answered. Study group included 150 principals at upper secondary schools, which were taken into PISA 2009 Turkey sample. The data related to school policies and practices used in this study were derived from OECD database of which were the responses of school principals to the questions placed in the part F of the PISA 2009 school questionnaire. The dimensions of study are as follows: The considered factors in admitting students to school; grouping students; the reasons for transferring students; using assessment of student data in declaration/transparency and monitoring-developing; the methods for monitoring the practice of teachers; using assessment of student data in evaluation of teachers' and principal's performance. Using data from the PISA 2009, the findings suggest that equity is not taken sufficiently into account for school policies and practices, and administrative accountability is used predominantly rather than professional accountability.

Introduction

PISA (Programme for International Student Assessment) is a study in which countries presenting 90% of world economy participate to monitor the situation of basic education systems, and presents considerable data to monitor the learning outcomes and to establish an effective education system in terms of determining the needed policies and practices. Additionally, PISA provides policy makers and practitioners with useful tools to improve the quality, equity and effectiveness in education through determining the common characteristics of successful students, schools, and education systems. Without such a consideration, it seems impossible to determine the strong and week aspects of basic education systems, and to reveal the points which should be improved and supported (Schleicher, 2007, s. 350). In turn, the data derived from PISA are vital in terms of monitoring and improving the basic education systems.

In the PISA 2009, one of the dimensions in the school questionnaire applied for the school principals has been school policies and practices. The variables placed in this dimension can be given as follows (OECD, 2011): student admission and placement policies; transferring students to other schools, accountability policies, using achievement data, monitoring teacher

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practices, schools' autonomy, and school principals' leadership.

Educational policy is determining the principles and actions related to educational issues designed for achieving the aims which should be requested and followed (Trowler, 2003, s. 95). In this regard, the core policies in education are shaped through the relations between education process and aims. The policy in education has a considerable impact on what happens and the experiences gained at the school. Also it should be a dialectic process because the developing policy displays continuity. During this process, all the situations which may be affected by policies should be taken into account. Besides, in the policy making process, many steps such as producing, investigating, discussing and debating, legitimating and implementing the alternatives are followed (Bell & Stevenson, 2006, p. 2-23).

A great majority of the practitioners of policies in the education are administrators and related staff at the rank level, school principals, and teachers. Nevertheless the teachers are not robots implement the commands given by the rank levels, but they decide in a social and cultural context. Thus, all policies can be changed scarcely or majorly during the implementation process (Fowler, 2000, s. 11; Mazmanian & Sabatier, 1989). For instance, when the policies established gorgeously and expansively in a capital city arrive in a rural area, they can be contravened. For that, the policies should be designed with the practices (Adams, 2008, s. 111).

School leaders can not be far from the determining policy and adapting process. Also a considerable part of their responsibilities as public employees is to seek to provide most suitable policies for the school. After deciding the policy, it should be considered that how the policy is to be implemented. Because, following the rules and new arrangements do not indicate that polices are implemented automatically. Achieving the practices depends on motivating teachers and providing them with needed resources. Since the school principals have a considerable role in developing and implementing the policies, they are expected to develop the action plans of policies, motivate teachers and other staff for collaboration, determine the needed resources, and give feedback. Consequently, today's school leaders have a different role rather than in the past; and this requires to qualify in the public leadership (Fowler, 2000, s. 12-234).

The studies regarding PISA in Turkey in the literature can be divided into four group as follows: *The studies evaluating generally the PISA* (Özmusul, 2012; Ural, 2011; Köseleci Blanchy & Şaşmaz, 2011; Yalçın, 2011; Çelen et. al, 2011; MEB, 2010; ERG, 2010; TEPAV, 2010; Uysal-Kolaşin & Güner, 2010; Ovayolu, 2010; Cinoğlu, 2009; Dinçer & Uysal Kolaşin, 2009; Akkuş, 2008; Acar, 2008; MEB, 2007; MEB, 2005) *the studies investigating the factors affecting reading, mathematics, and science achievement* (Yılmaz Fındık, 2012; Gürsakal, 2012; Yalçın vd., 2012; Yıldırım, 2012; Acar & Öğretmen, 2012; Azapağası İlbağı, 2012; Anıl, 2011; Özer & Anıl, 2011; Anagün, 2011; Şengül, 2011; İş Güzel & Berberoğlu, 2010; MEB, 2010; Boztunç, 2010; Çelebi, 2010; Akyüz & Pala, 2010; Demir & Kılıç, 2010; Albayrak, 2009; Anıl, 2009; Anıl, 2008; Çalışkan, 2008; Çiftçi, 2006; Erbaş, 2006; Şaşmazel, 2006; Yılmaz, 2006; Aşkar & Olkun, 2005), *the comparative studies* (Eraslan, 2009; Akarsu, 2009; Aydın, vd. 2012) and *technical studies* (Asil & Gelbal, 2012; Güzeller, 2011; Uyar, 2011; Tepehan, 2011; Ayan, 2011; Seis, 2011; Aydoğdu İskenderoğlu & Baki, 2011; Asil, 2010; Demir, 2010; Atalay, 2010; Çetin, 2010; Çirci, 2009; Çet, 2006; Savran, 2004). When considering these studies, it can be said that the PISA studies in Turkey have been predominantly in the limelight of the researchers in the division of measurement and evaluation, and curriculum and instruction.

In Turkey, it can be said that the PISA data have not been sufficiently and deeply investigated in terms of educational administration. In this sense, the question "According to PISA 2009 data, what is the situation of the school policies and practices at upper secondary schools in Turkey?" was answered.

The sub questions are as follows:

What is the situation of the upper secondary schools' policies and practices related to:

(1) the considered factors in admitting students to school?
(2) grouping students?
(3) the reasons for transferring students?
(4) using assessment of student data in declaration/transparency?
(5) using assessment of student data in monitoring-developing?
(6) the methods for monitoring the practice of teachers?
(7) using assessment of student data in evaluation of teachers' and principal's performance?

Method

This study was performed as a descriptive research in terms of investigating the situation of upper secondary schools' school policies and practices. In this study, a study group consisted of 150 school principals at upper secondary school was established in consequence of removing primary schools from total 170 schools taken into PISA 2009 Turkey sample. The sampling design, and procedures concerning reliability, validity, and usability of questionnaires are given explained in detail in the technical report   (OECD, 2012). Table 1 shows the distribution of school principals in the study group according to school/programme types. As can be seen in the table, among the 150 school principals; 37,4 percent works at vocational schools (including Anatolian vocational schools), 38,7 percent works at general high schools, 5,3 percent works at multi programme high schools, 14,7 percent works at Anatolian high schools, 1,3 percent works at Anatolian teacher training high schools, 2 percent works at science high schools, and 0,7 percent works at Anatolian fine arts high school.

Table 1: Distribution of school principals in the study group according to school/programme types

School/Programme Types	f	%
Anatolian Vocational High School; Technical High School; Anatolian Technical High School	1	0,7
Anatolian Vocational High School	1	0,7
Multi Programme High School	8	5,3
General High School	58	38,7
Anatolian High School	22	14,7
Science High School	3	2,0
Anatolian Teacher Training High School	2	1,3
Anatolian Fine Arts High School	1	0,7
Vocational High School; Anatolian Vocational High School; Technical High School; Anatolian Technical High School	9	6,0
Vocational High School; Anatolian Vocational High School; Technical High School	2	1,3
Vocational High School; Anatolian Vocational High School	19	12,7
Vocational High School; Technical High School; Anatolian Technical High School	7	4,7
Vocational High School; Anatolian Technical High School	5	3,3
Vocational High School	12	8,0
Total	150	100

The data related to school policies and practices used in this study were derived from OECD database of which were the responses of school principals to the questions placed in the part F of the PISA 2009 school questionnaire (OECD, 2011, p. 18-24). Additionally, the questions related to grouping students and using student achievement data were taken into the study because they associated to the policies and practices. In order to elicit the research questions, the frequency and percentage values of the responses of school principals to the school questionnaire were used.

Findings and Discussion

Table 2 shows the considered factors when students are admitted to the school. As the table indicates, when students are admitted to the school, the most considered factor (*sometimes* or *always*) is student's academic achievement. It is followed by recommendation of feeder schools, whether the student requires or is interested in a special programme, residence in a particular area, other reasons, and finally, preference given to family members of current or former students. Furthermore, when students are admitted, the percentage of school principals reporting that other reasons are considered (sometimes or always) is 41.3. Consequently, it may argue that many unclear factors (others=?) are considered in addition to the factors given above when admitting students to the school.

Table 2: The considered factors when students are admitted to the school

Factors	Never		Sometimes		Always	
	f	%	f	%	f	%
Residence in a particular area	66	44,0	21	14,0	61	40,7
Student's record of academic performance (including placement tests)	50	33,3	50	33,3	49	32,7
Recommendation of feeder schools	48	32,0	75	50,0	24	16,0
Whether the student requires or is interested in a special programme	52	34,7	64	42,7	32	21,3
Preference given to family members of current or former students	97	64,7	39	26,0	12	8,0
Other	62	41,3	48	32,0	14	9,3

Table 3 shows grouping students by ability. As can be seen in the table, 55 percent of school principals reports that students are grouped by ability into different classes for all subjects or some subjects. In parallel, 26,8 percent of upper secondary schools groups students by ability for all subjects. In turn, a considerable part of schools tend to have the policy of grouping students by ability. Nevertheless, this policy seems controversial in terms of equity dimension when considering that some classrooms may consist of high achievers while some classrooms may consist of low achievers

Table 3: Grouping students by ability

Item	For all subjects		For some subjects		Not for any subject	
	f	%	f	%	f	%
Students are grouped by ability into different classes	40	26,87	43	28,7	66	44,0

Table 4 shows using assessments of students for grouping for instructional purposes. As can be seen in the table, 73,3 percent of school principals report that assessments of students are used for grouping students for instructional purposes. This high percentage can be explained by a wide variety of types of upper secondary schools and programmes in Turkey. In addition to selecting students by central exams, on the other hand, tendency of schools to admit students according to academic performance; grouping students for instructional purposes

may indicate a strict selection-elimination policy at upper secondary school system. A finding by OECD (2010, p. 37) suggests that there is a negative relation between the policy of selecting and grouping students and achievement. Thus, the comments made above are explicitly important.

Table 4: Using assessments of students for grouping for instructional purposes

Item	Yes		No	
	f	%	f	%
In your school, are assessments of students in <national modal grade for instructional for 15-year-olds> used for grouping for instructional purposes.	110	73,3	40	26,7

Table 5 shows the reasons for transferring students to another school. As can be seen in the table, the most likely (likely or very likely) reason for transferring students to another school is behavioural problems, and the less likely reason is low academic achievement. The most likely reason which is behavioural problems may indicate that schools tend to transfer the students with behavioural problems to another school. Only 10 percent of school principals responded *not likely* to the regarding question. In parallel, it seems remarkable that a considerable part of the school principals, 53,3 percent of study group, tends to report that the behavioural problems is the reason of transferring students to another school. Consequently, this situation may create serious pressures on the upper secondary school system and social system in terms of both the students' sense of the school belonging and the potentially risky behaviours of students transferred to another school. Moreover, the high percentage of (64,7 % of) the school principals, who tends to report transferring students to another school because of special learning needs, may suggest that schools are unable to meet such students' learning needs sufficiently.

Table 5: The reasons for transferring students to another school

Reasons	Not likely		Likely		Very likely	
	f	%	f	%	f	%
Low academic achievement	57	38,0	68	45,3	12	8,0
Behavioural problems	15	10,0	93	62,0	30	20,0
Special learning needs	39	26,0	79	52,7	18	12,0
Other	19	12,7	84	56,0	10	6,7

Additionally, as Table 5 indicates, the another high percentage of (62,7 % of) school principals, who tends to report transferring students to another school because of the other reasons, may indicate that there are many unclear factors in transferring students to another school. The reasons for transferring students to another school arise predominantly from changing the residence; however, many reasons can be adduced as follows: over-crowded schools, decreasing class size, suspension or expulsion policies, school selection, general academic achievement, and social climate etc. (Rumberger, 2003, s. 6).

Table 6 shows the purposes of using assessment of student data and achievement data in terms of declaration/transparency. As can be seen in the table, the assessment and achievement data are mostly used to provide information to parents of students on their child's academic performance relative to other students (89,3 % of school principals reported); are least used to post publicly in terms of declaration/transparency (48 % of school principals reported). Since the high percentage of (89,3 % of) school principals, who reports the achievement data are used to provide to parents on comparatively information on students' academic performance, may create serious pressure on both parents and students, it can be said that the upper secondary school system encounters a high cost. Moreover, since the percentage (approximately 70 %) of school principals, who reports that the information is

provided to parents on their child's academic performance relative to out of school benchmarks, may indicate a competition among the schools, it can increase the pressure on the teachers, administrators, and other stakeholders as well as the parents and students. On the other hand, Table 6 displays almost half (48 %) of the school principals report that achievement data are posted publicly. Because the schools have no obligation to post publicly the achievement data, it can argue that the schools which post publicly these data have good student achievement data. In turn, it can be said that the schools adopt this policy provoke competition among the schools against to the schools with low performance, and increase the pressure on the stakeholders.

Table 6: The purposes of using assessment of student data and achievement data in terms of declaration/transparency

The items	Yes		No	
	f	%	f	%
to provide information to parents of students on their child's academic performance relative to other students	134	89,3	13	8,7
to provide information to parents of students on their child's academic performance relative to students in the same grade in other schools	102	68,0	44	29,3
to provide information to parents of students on their child's academic performance relative to national or regional <benchmarks>	104	69,3	42	28,0
To compare the school with other schools	109	72,7	41	27,3
Achievement data are posted publicly (e.g. in the media)	72	48,0	77	51,3
To compare the school to <district or national> performance	109	72,7	41	27,3

Table 7 shows the purposes of using assessment of student data and achievement data in terms of monitoring-developing. The assessment and achievement data are mostly used to inform parents about their child's progress (93,3 % of school principals reported); are least used to identify aspects of instruction or the curriculum that could be improved (54 % of school principals reported) in terms of monitoring-developing. It can be said that a considerable part of the schools provide information to parents on the progress of their student. It seems that schools show a positive approach in terms of monitoring the achievement data. Additionally, when considering the percentage of school principals, who reports that achievement data are tracked over time by an administrative authority (76 %), and are used to monitor the school's progress from year to year (82,7 %); it can be said that most of schools adopt a good policy in terms of monitoring the assessment of student data.

Table 7: The purposes of using assessment of student data and achievement data in terms of monitoring-developing

The items	Yes		No	
	F	%		F
To inform parents about their child's progress	140	93,3	10	6,7
To monitor the school's progress from year to year	124	82,7	26	17,3
Achievement data are tracked over time by an administrative authority	114	76,0	34	22,7
To identify aspects of instruction or the curriculum that could be improved	81	54,0	69	46,0

Nevertheless, Table 7 suggests that almost half of the schools (46 % of school principals) reports that assessments of students are not used to identify aspects of instruction or the curriculum. For that, it seems that the schools do not fulfill sufficiently the duty expected from them in terms of investigating and improving the weak aspects of instruction, and implementing the principle of student centered curriculum. Also disusing the assessments of students for improving the instruction or curriculum in a considerable part of the schools may fail to consider the learning needs of some students. For that, this situation can be accepted as a reason of student failure. When investigating the literature, there is limited research on the

data usage at the schools in Turkey.

The study conducted by Demir (2009, p. 393) at the primary schools concluded that the data, except perceptual data, were collected inclusively, but the collected data, except central exam and pilot tests, were not used mostly by school administrators in the decisions for improving student achievement or developing school. Development of schools, fulfillment of the duties expected from them, and overcoming the problems depend on making an applicable strategic plan and implementing it effectively (Çalık, 2003, p. 251-252). However, the results of the studies indicate that schools in Turkey fail in strategic planning owing to the problems related to the knowledge, motivation, support, duration, budget, legal issues, and human resources etc (Çalık, 2003, s. 265; Işık & Aypay, 2004, s. 349; Memduhoğlu, & Uçar, 2012, s. 246; Yelken, Üredi & Kılıç, 2012, s. 84-87; Soydan, 2009, s. 19-20). On the other hand, the study conducted by Çalık (2003, s. 265) in Ankara revealed that high schools were more week in the strategic planning than the primary schools. The reasons for this situation, following obstacles were cited: more discipline problems, physical inadequacies, excessive student numbers, insufficient budget, and less parent support. In Turn, these obstacles seem considerable clue to reveal the reasons of inability of schools in developing/improving dimension.

Table 8 shows the methods used to monitor the practice of teachers at the school. As can be seen in the table, the most preferred method for monitoring the practice of teachers is principal or senior staff observations of lessons (86,7 % of school principals reported); the least preferred method is teacher peer review (45,3 % school principals reported). The high percentage of school principals, who reports that the observations of lessons is used mostly for monitoring the practice of teachers, may attribute to the existence of administrative accountability approaches, which determine and reward the good teachers, good schools, and good districts obtain good student achievement data, but to sanction the others obtain bad data. However, it is clear that the teacher peer review should be given predominantly at the schools when considering that teachers attend more actively to the teaching-learning process than school principals do, and they can evaluate effectively each other's practices. Consequently, it can be said that there are mainly administrative approaches in monitoring the practices of teachers at the school, rather than professional accountability (supporting the school staff and requests of public, instead of adjusting what should be done, and how should be done).

Table 8: The methods used to monitor the practice of teachers at the school

The methods	Yes		No	
	F	%	f	%
Tests or assessments of student achievement	125	83,3	24	16,0
Teacher peer review (of lesson plans, assessment instruments, lessons)	68	45,3	80	53,3
Principal or senior staff observations of lessons	130	86,7	18	12,0

Also, as Table 8 indicates, 83,3 % of school principals report that the tests or assessments of student achievement are used to monitor the practice of teachers. When considering that there are many factors affect student achievement, and the socio-economic background of student is a considerable variable among them; using test scores or similar assessments of students in monitoring the practices of teachers, may cause pressure on the teachers particularly who work at the schools having low socio-economic background, and may cause that the schools encounter the problems aroused by administrative accountability.

Table 9 shows using achievement data in evaluation of the principal's and teachers'

performance. As can be seen in the table, the percentage of school principals (72 %) who reports that the achievement data are used in evaluation of teachers' performance is considerably higher than the percentage of school principals (46 %) who reports the data are used in evaluation of principals' performance. This finding may indicate that the teachers are held more responsible for student achievement rather than school principals. Additionally, it may indicate that school principals display insufficient instructional leadership in using achievement data in evaluation.

Table 9: Using achievement data in evaluation of the principal's and teachers' performance

Items	Yes		No	
	f	%	f	%
Achievement data are used in evaluation of the principal's performance	69	46,0	81	54,0
Achievement data are used in evaluation of teachers' performance	108	72,0	42	28,0

Conclusions

- When students are admitted to the school, the most considered factor is student's academic achievement (including placement tests). It is followed by - recommendation of feeder schools, - whether the student requires or is interested in a special programme, - residence in a particular area, - other reasons, and finally, - preference given to family members of current or former students

- More than half (55 percent) of schools place the students to the different classes in all subjects or some subjects; and a great majority (73.3 %) of them use the assessments of students to group students for instructional purposes.

- The most likely reason for transferring students to another school is behavioral problems. It is followed by - other reasons, - special learning needs, and - low academic achievement.

- The assessment of student data is mostly used to provide information to parents of students on their child's academic performance relative to other students in terms of declaration/transparency. It is followed by - to compare the school with other schools, - to compare the school to <district or national> performance, - to provide information to parents of students on their child's academic performance relative to national or regional <benchmarks>, - to provide information to parents of students on their child's academic performance relative to students in the same grade in other schools, and to post publicly.

- The assessment of student data is mostly used to inform parents about their child's progress in terms of monitoring-developing. It is followed by - to monitor the school's progress from year to year, - to track achievement data over time by an administrative authority, and - to identify aspects of instruction or the curriculum that could be improved.

- The most preferred method for monitoring the practice of teachers is principal or senior staff observations of lessons. It is followed by - tests or assessments of student achievement, and - teacher peer review (of lesson plans, assessment instruments, lessons).

- The assessment of student data is mostly used in evaluation of teachers" performance rather than principal"s performance.

Suggestions

- When students are admitted to the school, a policy, that the students are distributed equally to schools according to their achievement situations, distribution of students with high achievement to certain schools can be prevented, and heterogeneous groups regarding achievement can be established, should be followed. Ministry of education decided in the year 2010 through a change on the Regulation on Secondary Schools, to admit the students to the upper secondary schools, which admit students without central exam, via electronic environment. Through this electronic environment, students can be placed equally to the school according to academic achievement situations in accordance with their choices. In this regard, electronic environment can be used to place equally students in the classes in accordance with normal distribution.

- Instead of placing students by ability or according to the instructional purposes at the school to the classes, through establishing heterogonous classes, additional support programme should be offered to the students with low achievement

- To prevent that the students with special needs or behavioral problems are transferred to another school in the unnecessary conditions, and to keep them at the school: additional support programmes after school or lesson can be prepared; the criteria for each education grade can be determined in terms of increasing learning equity, and it can ensure that students pass the grades through these criteria, this process can be approached as a strategic issue under the leadership of guiding service at the school, and action plans can be prepared and implemented in accordance the strategy; the upper secondary school system can be removed from an eliminative structure, and be transformed into a structure of preparatory to the life with regard to decreasing the ratio of early leavers.

- The steps preventing the transparency policy that schools compare the assessment of student data with both intra-school and extra-school indicators should be taken, because it may cause a strict accountability approach, and also may increase existing pressure on the stakeholders. Instead of this, the assessment of student data can be shared directly with related parent without any comparisons. And a parent collaboration policy based on the individual development of students in terms of achievement should be followed.

- In monitoring the practice of teachers, a policy that concentrates on the professional development and self-evaluation of teachers. In this regard, the steps promote a teacher peer review culture at the school which means reviewing and developing of lesson plans, assessment instruments, lessons, teaching methods etc.

Acknowledgement

References

Acar, O. (2008). PISA sonuçları ışığında Türkiye'nin rekabet gücünün değerlendirilmesi. TEPAV Report.

Acar, T. & Öğretmen, T. (2012). Çok düzeyli istatistiksel yöntemler ile 2006 PISA fen bilimleri performansının incelenmesi. [Analysis of 2006 PISA science performance via multilevel statistical methods]. Education and Science, 37 (163), 178-189.

Adams, D. K. (2008). Eğitimin sürdürülebilir ekonomik kalkınma üzerindeki etkisi. Turkish Education Association (Ed.). 80. Yıl Uluslararası Eğitim Forumu Eğitim Hakkı ve Gelecek Perspektifleri.

Akarsu, S. (2009). Öz-yeterlik, motivasyon ve PISA 2003 matematik okuryazarlığı üzerine uluslararası bir karşılaştırma: Türkiye ve Finlandiya. [A cross-national study on self-efficacy, motivation and PISA 2003 mathematics literacy: Turkey and Finland]. Abant İzzet Baysal University, Institute of Social Science, unpublished master thesis.

Akkuş, N. (2008). *Yaşam boyu öğrenme becerilerinin göstergesi olarak PISA 2006 sonuçlarının Türkiye açısından değerlendirilmesi.* [Evaluation of PISA 2006 results as an indicator of lifelong learning skills in terms of Turkey]. Hacettepe University, Institute of Social Science, unpublished master thesis.

Akyüz, G., & Pala, N.M. (2010). PISA 2003 sonuçlarına göre öğrenci ve sınıf özelliklerinin matematik okuryazarlığına ve problem çözme becerilerine etkisi, [The Effect of Student and Class Characteristics on Mathematics Literacy and Problem Solving in PISA 2003] Elementary Education Online, 9(2), 668-678.

Albayrak, A. (2009). *PISA 2006 sınavı sonuçlarına göre Türkiye'deki öğrencilerin fen başarılarını etkileyen bazı faktörler.* [According to the PISA 2006 results, some factors that affect the success of science of Turkish students] Hacettepe University, Institute of Social Science, unpublished master thesis.

Anagün, Ş. S. (2011). PISA 2006 sonuçlarına göre öğretme-öğrenme süreci değişkenlerinin öğrencilerin fen okuryazarlıklarına etkisi. [The impact of Teaaching-Learning process variables to the students' scientific literacy levels based on PISA 2006 results] Education and Science, 36 (162).

Anıl, D. (2011). Türkiye'nin PISA 2006 fen bilimleri başarısını etkileyen faktörlerin yapısal eşitlik modeli ile incelenmesi. [Investigation of factors Influencing Turkey's PISA2006 Science Achievement with Structural Equation Modelling] Educational Sciences: Theory & Practice, 11(3), 1253-1266.

Anıl, D. (2009). Uluslararası öğrenci başarılarını değerlendirme programı (PISA)'nda Türkiye'deki öğrencilerin fen bilimleri başarılarını etkileyen faktörler. [Factors Effecting Science Achievement of Science Students in Programme forInternational Students' Achievement (PISA) in Turkey] Education and Science, 34(152), 87-100.

Anıl, D. (2008). The analysis of factors affecting the mathematical success of Turkish students in the

PISA 2006 evaluation program with structural equation modeling. *American-Eurasian Journal of Scientific Research*, 3 (2), 222-227.

Asil, M. & Gelbal, S. (2012). PISA öğrenci anketinin kültürler arası eşdeğerliği [Cross-cultural Equivalence of the PISA Student Questionnaire]. *Education and Science,* 37(166), 236-249.

Asil, M. (2010). *Uluslararası öğrenci değerlendirme programı (PISA) 2006 öğrenci anketinin kültürler arası eşdeğerliğinin incelenmesi.*[Assessing cross cultural equivalence of the Programme for International Student Assessment (PISA) 2006 student questionnaire] Hacettepe University, Institute of Social Science, doctoral thesis.

Aşkar, P. & Olkun, S. (2005). PISA 2003 sonuçları açısından okullarda bilgi ve iletişim teknolojileri kullanımı [The use of ICT in schools based on PISA 2003 data]. Euroasian Journal of Educational Research, 2005 (19), 15-34.

Atalay, K. (2010). *PISA 2006 öğrenci anketinde yer alan tutum maddelerinin değişen madde* fonksiyonu açısından incelenmesi.[Evaluation of attitude items in PISA 2006

student questionnaire in terms of differential item functioning] Hacettepe University, Institute of Social Science, unpublished master thesis.

Ayan, C. (2011). *PISA 2009 fen okuryazarlığı alt testinin değişen madde fonksiyonu açısından incelenmesi.* [PISA 2009 analysis of science test in terms of changing item function] Hacettepe University, Institute of Social Science, unpublished master thesis.

Aydın, A., Sarıer, Y. & Uysal, Ş. (2012). Sosyoekonomik ve sosyokültürel değişkenler açısından PISA matematik sonuçlarının karşılaştırılması. [The Comparative Assessment of the Results of PISA Mathematical Literacy in terms of Socio-Economic and Socio-Cultural Variables] Education and Science, 37(164), 20-30.

Aydoğdu İskenderoğlu, T. & Baki, A. (2011). İlköğretim matematik 8. sınıf ders kitabındaki soruların PISA matematik yeterlik düzeylerine göre sınıflandırılması. [Classification of the questions in an 8th grade mathematics textbook with respect to the compentency levels of PISA] Education and Science, 36 (161), 287-301.

Azapağası İlbağı, E. (2012). *PISA 2003 matematik okuryazarlığı soruları bağlamında 15 yaş grubu öğrencilerinin matematik okuryazarlığı ve tutumlarının incelenmesi.* [Examination of the mathematical literacy and attitudes of the students aged 15 in terms of PISA 2003 mathematical literacy items] Atatürk University, Institute of Educational Sciences, unpublished doctoral thesis.

Bell, L., & Stevenson, H. (2006). Education policy: Process, themes and impact: Taylor & Francis.

Boztunç, N. (2010). *Uluslararası Öğrenci Değerlendirme Programı (PISA)'na katılan Türk öğrencilerin 2003 ve 2006 yıllarındaki matematik ve fen bilimleri başarılarının incelenmesi. [*An investigation about mathematics and science achievement of Turkish students participating in Programme for International Student Assessment (PISA) in 2003 and 2006] Hacettepe University, Institute of Social Science, unpublished master thesis.

Cinoğlu, M. (2009). What does the PISA 2003 mean for Turkey? Journal of Social Sciences, 19(1), 43-50

Çalık, T. (2003). Eğitimde stratejik planlama ve okulların stratejik planlama açısından nitel Değerlendirilmesi. [Strategical planning in education and the qualitative evaluation of the schools as regards to strategical planning] Kastamonu Education Journal, 11 (2), 251 - 268.

Çalışkan, M. (2008). *The impact of school and student related factors on scientific literacy skills in the programme for international student assessment-PISA 2006.* Middle East Technical University, Graduate School of Natural and Applied Sciences, unpublished doctoral thesis.

Çelebi, Ö. (2010). *A cross - cultural comparison of the effect of human and physical resources on students' scientific literacy skills in the Programme for International Student Assessment (PISA) 2006.* Middle East Technical University, Graduate School of Natural and Applied Sciences, unpublished doctoral thesis.

Çelen, F. K., Çelik, A. & Seferoğlu, S. S. (2011). Türk eğitim sistemi ve PISA sonuçları. Academic Informatics Conference 2011, 2 - 4 Şubat 2011, İnönü Üniversitesi, Malatya.

Çet, S. (2006). *A multivariate analysis in detecting differentially functioning items through the use of programme for international student assessment (PISA) 2003 mathematics literacy items.* Middle East Technical University, Graduate School of Natural and Applied Sciences, unpublished doctoral thesis.

Çetin, B. (2010). Cross-cultural structural parameter invariance on PISA 2006 student questionnaires. Egitim Arastirmalari-Eurasian Journal of Educational Research, 38, 71-89.

Çiftçi, A. (2006). *PISA 2003 sınavı matematik alt testi sonuçlarına göre Türkiye`deki öğrencilerin başarılarını etkileyen bazı faktörlerin incelenmesi.* [According to 2003 PISA mathematic subtest scores: The analysis of some effecting factors on students assessment in Turkey] Hacettepe University, Institute of Social Science, unpublished master thesis.

Çirci, R. (2009). *A study on construct validity of science items in PISA 2006: The case of Turkey.* Boğaziçi University, Institute of Graduate Studies in Science and Engineering, unpublished master thesis.

Demir, E. (2010). *Uluslararası öğrenci değerlendirme programı (PISA) bilişsel alan testlerinde yer alan soru tiplerine göre Türkiye'de öğrenci başarıları.* [The students achievement in Turkey, according to the question types used in program for international student assessment (PISA) cognitive domain tests] Hacettepe University, Institute of Social Science, unpublished master thesis.

Demir, K. (2009). İlköğretim okullarında verilere dayalı karar verme. [Data-Driven Decision-Making in Primary School] Educational Administration: Theory and Practice , 15(59), 367-397

Demir, İ. & Kılıç, S. (2010). Öğrencilerin matematik başarısını etkileyen faktörlerin PISA 2003 kullanılarak incelenmesi. [Using PISA 2003, examining the factors affecting students'mathematics achievement] Hacettepe University Journal of Education 38, 44-54.

Dinçer, M. A. & Uysal Kolaşin, G. (2009). Türkiye'de öğrenci başarısında eşitsizliğin belirleyicileri. Education Reform Inititative, Sabancı University.

Eraslan, A. (2009). Finlandiya'nın PISA' daki başarısının nedenleri: Türkiye için alınacak dersler [Reasons behind the Success of Finland in PISA:Lessons for Turkey]. Necatibey Faculty of Education Electronic Journal of Science and Mathematics Education, 3(2), 238-248.

Erbaş, K. C. (2005). *Factors affecting scientific literacy of students in Turkey in programme for international student assessment (PISA).* Middle East Technical University, Graduate School of Natural and Applied Sciences, unpublished master thesis.

ERG (Education Research Inititative). (2010). PISA 2009 sonuçlarına ilişkin değerlendirme. ERG note.

Fowler, F. C. (2000). Policy studies for educational leaders. Prentice-Hall, New Jersey

Gürsakal, S. (2012). PISA 2009 öğrenci başarı düzeylerini etkileyen faktörlerin değerlendirilmesi. Süleyman Demirel University The Journal of Faculty of Economics and Administrative Sciences , [An evaluation of PISA 2009 student achievement levels' affecting factors] 17(1), 441-452.

Güzeller, C. O. (2011). PISA 2009 öğrenci anketinde yer alan bilgisayar tutum boyutunun kültürlerarası eşitliğinin incelenmesi [A study of cross-cultural equivalance of computer attitude in PISA 2009 student questionnare]. Education and Science, 36 (162), 320-327.

Işık, H. & Aypay, A. (2004). Eğitimde stratejik plan geliştirme sürecinde karşılaşılan sorunlar: [Problems Faced in the Process of Strategic Planning in Education A Study Conducted in Çanakkale] Çanakkale ilinde yapılan bir inceleme. Gazi University Journal of Gazi Educational Faculty, 24(3), 349-363

İş Güzel, Ç., & Berberoğlu, G. (2010). Students' affective characteristics and their relation to mathematical literacy measures in the Programme for International Student Assessment (PISA) 2003. Eurasian Journal of Educational Research, 40, 93-113.

Köseleci Blanchy, N. & Şaşmaz, A. (2011). PISA 2009: where does Turkey stand? Turkish Policy Quarterly, 10 (2), 125-134.

Mazmanian, D.A. & Sabatier, P.A. (1989). Implementation and public policy. University Pres of America

MEB. (2010). PISA 2009 projesi ulusal ön raporu. MEB EARGED publications.

MEB. (2007). PISA 2006 projesi, ulusal ön rapor. MEB EARGED publications

MEB. (2005). PISA 2003 projesi - ulusal nihai rapor. Ankara: MEB EARGED publications.

Memduhoğlu, H. B. & Uçar, İ. H. (2012). Yönetici ve öğretmenlerin stratejik planlama algısı ve okullarda mevcut stratejik planlama uygulamalarının değerlendirilmesi. [The perception of administrators and teachers about strategical planning and evaluation of current strategical planning practices at schools] Mehmet Akif Ersoy University Journal of Education Faculty, 12(23), 234 – 256.

OECD. (2012), PISA 2009 Technical Report, PISA, OECD Publishing.

OECD. (2011). School questionnaire data file. Database – PISA 2009. [Online] Retrieved on 26.03.2012 at URL: http://pisa2009.acer.edu.au/

OECD. (2010). PISA 2009 results: what makes a school successful? – resources, policies and practices (volume iv). OECD publishing.

Ovayolu, Ö. (2010). *Türkiye'deki öğrencilerin PISA 2006 matematik alt testindeki düşünme süreçlerine ilişkin puan dağılımları.* [The range of scores in competency clusters of Turkish students in mathematics sub-test according to PISA 2006] Ankara University, Graduate School of Educational Sciences, unpublished master thesis.

Özer, Y. & Anıl, D. (2011). Öğrencilerin fen ve matematik başarılarını etkileyen faktörlerin yapısal eşitlik modeli ile incelenmesi. [Examining the factors affecting students' science and mathematics achievement with structural equation modeling] Hacettepe University Journal of Education, 41, 313-324.

Özmusul, M. (2012). A contextual analysis of factors tend to be effective school system in Turkey. Procedia-Social and Behavioral Sciences Journal, 46(2012), 515-519.

Rumberger, R. W. (2003). The causes and consequences of student mobility. Journal of Negro Education, 6-21. Savran, N. Z. (2004). PISA projesi'nin Türk eğitim sistemi açısından değerlendirilmesi. Journal of Turkish Educational Sciences,2(4), 397-414

Schleicher, A. (2007). Can competencies assessed by PISA be considered the fundamental school knowledge 15-year-olds should possess? Journal of Educational Change, 8(4), 349-357.

Seis, A. (2011). *6.-8. sınıf matematik ders kitaplarının PISA 2003 Belirsizlik Ölçeği'ne göre incelenmesi.* [An investigation of 6th - 8th grade mathematics textbooks according to PISA 2003 Uncertainty Scale] Abant İzzet Baysal University Institute of Educational Sciences, unpublished master thesis.

Soydan, H. (2009). Eğitimde stratejik planlama önünde engeller, Eğitimde Stratejik Planlama Makaleler, MEB Strateji Geliştirme Başkanlığı.

Şaşmazel, A. G. (2006). *Uluslararası öğrenci değerlendirme programı (PISA)'nda Türk öğrencilerin fen bilgisi başarılarını etkileyen faktörler.* [Factors that affecting success of scientific literacy on students in Turkey that participate programme for international student assessment (PISA)] Hacettepe University, Institute of Social Science, unpublished master thesis.

Şengül, A. (2011). *Türk öğrencilerinin PISA 2009 okuma becerilerini açıklayan değişkenlerin CHAID analizi ile belirlenmesi.* [Determination variables which define Turkish students? PISA 2009 reading literacy with CHAID analysis] Ankara University, Graduate School of Educational Sciences, unpublished master thesis.

TEPAV. (2010). PISA 2009 sonuçlarına ilişkin bir değerlendirme.

Tepehan, T. (2011). *Türk öğrencilerinin PISA başarılarının yordanmasında yapay sinir ağı ve lojistik regresyon modeli performanslarının karşılaştırılması* [Performance

comparison of artificial neural network and logistic regression model in predicting Turkish students? PISA success]. Hacettepe University, Institute of Social Science, unpublished doctoral thesis.

Trowler, P. (2003). Education policy: Psychology Press. Routledge Taylor&Francis Group, London. Second edition.

Ural, A. (2011). …üç pisa'yı hazmetmek-bir temel eğitim öyküsü-. Eleştirel Pedagoji, 16.

Uyar, Ş. (2011). *PISA 2009 Türkiye örnekleminde öğrenme stratejileri modelinin farklı gruplarda ölçme değişmezliğinin incelenmesi.* [An investigation of measurement invariance of learning strategies model across different groups in PISA Turkey sample] Hacettepe University, Institute of Social Science, unpublished master thesis.

Uysal-Kolaşin, G. & Güner, D. (2010). Eğitimin kalitesinde sınırlı iyileşme. BETAM Research Paper

Yalçın, M., Aslan, S. & Usta, E. (2012). Analysis of PISA 2009 exam according to some variables. Mevlana International Journal of Education(MIJE), 2(1), 64-71.

Yalçın, S. (2011). *Türk öğrencilerin PISA başarı düzeylerinin veri zayıflama analizi ile yıllara göre Karşılaştırılması. [Th*e comparison of Turkish students? PISA achievement levels in relation to years via data envelopment analysis] Ankara University, Graduate School of Educational Sciences, unpublished master thesis.

Yelken, Y., Üredi, L. & Kılıç, F. (2012). Stratejik planlama uygulamalarına ilişkin ilk ve ortaöğretim okulu öğretmenlerinin görüşlerinin incelenmesi [Primary and secondary school teachers'Views on strategic planning aplications]. National Education, 2012,(195):67-90

Yıldırım, K. (2012). PISA 2006 verilerine göre Türkiye'de eğitimin kalitesini belirleyen temel faktörler. Journal of Turkish Educational Sciences, 10(2), 229-255.

Yılmaz, E. T. (2006). *Uluslararası öğrenci başarı değerlendirme programı (PISA)'nın Türkiye'deki*

öğrencilerin matematik başarılarını etkileyen faktörler. [The factors that effect the mathematics achievement of the students of Turkey in programme for international student assesment (PISA)] Hacettepe University, Institute of Social Science, unpublished master thesis.

Yılmaz Fındık, L. (2012). PISA 2009 sonuçlarına göre Türkiye'deki sosyo-ekonomik dezavantajlı öğrencilerin okuma becerileri alanındaki başarılarının değerlen-dirilmesi. [PISA 2009 results; evaluating the reading achievement of resilient students and disadvantaged low achievers] Hacettepe University, Institute of Social Science, unpublished master thesis.