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# A Model Study on the Explanation of the Centralized High School Entrance Examination in Turkey

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**Abstract:** The main objective of this study is to determine the predictive power of students' self-efficacy perceptions, metacognitive self-regulation skills, course test points, school achievement points and school behaviour points on their High School Entrance Examination (SBS) scores. The study is carried out in accordance with a model where the dependent variable is students' SBS scores and the independent variables are their self-efficacy perceptions, metacognitive self-regulation skills, course test points, school achievement points and school behaviour points. In addition, interaction between the variables and differences according to gender and school type are investigated. The study group consisted of 1322 primary school students in the grades 6 and 7 who also attend SBS preparation courses. In the analysis of data, Pearson correlation analysis and regression analysis are used. The results show that all the independent variables of the study explain the SBS points significantly except the "school behaviour points", which act in favor of girls. Furthermore, in the prediction of SBS achievement, different models come into the picture.

**Key words:** Achievement · Self-efficacy · Metacognition · Self-regulation · Test points · Behaviour points · Entrance examination

## INTRODUCTION

In the Turkish educational system, students take a nationwide exam before starting the secondary education. This High School Entrance Examination, which is also called the Level Assessment Exam, or SBS, is held at the end of 6th, 7th and 8th grades. Given that the chance to attend the high schools which play a crucial role for the students' prospects of going to a good university is determined by the score that they receive from SBS gives this exam a big importance for the students, parents and teachers. The content of the exam is composed of the areas Turkish, Mathematics, Science and Social Sciences of the second level of primary education. Most questions are aimed to measure the ability to comprehend and to conduct critical thinking. In order to do well in the SBS, students have to attend the courses which are specifically designed to prepare them for the exam in addition to continuing their normal schedule at school. In determining the final SBS score, the students' school achievement points for primary education and their school behavior points add in.

The behavior point is the score that reflects the teacher's conviction about the student's overall attitude, interest and performance at the school. Like other examinations, SBS also contain perceptional, behavioral and physiological variables that affect the student's performance. The purpose of this study is based on determining the variables that affect the students' success in SBS.

According to this, the research question of the study is determined as "According to the school type and gender, to what degrees do school achievement points, school behaviour points, course test points, self-efficacy perceptions and metacognitive self-regulation skills predict students' high school entrance examination points?"

In general, metacognitive skills can be defined as the thinking of one's own thoughts. This thinking can be about the individual's knowledge, actions, or cognitive and emotional states [1]. Metacognitive skills are intentional, planned, demanded, goal and future oriented cognitive behaviours that are used to fulfill cognitive tasks. Meanwhile, metacognitive skills involve regulations on personal thinking processes to cope with changing conditions [1]. These skills are multi-layered and they include strategies, tasks and evaluation on personal knowledge and strategies [2]. Researches show that there

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is a significant relation between the usage of metacognitive self-regulation strategies and academic achievement [3-5]. In general, self-regulation is the skill of setting accurate goals, observing, using appropriate strategies, keeping the motivation at high levels and self evaluation for various cases and problems by considering the ability, knowledge and skills, which brings in the control of mind over its own states, functions and intrinsic processes [6, 7].

Self-efficacy refers to perceived capabilities for learning or performing behaviors at designated levels and can influence choice of activities, effort, persistence and achievement. People acquire information about their self-efficacy for a given activity from their actual performances, vicarious experiences, forms of persuasion and physiological symptoms. In educational settings, students have goals and varying levels of self-efficacy for learning. As they engage in a task they acquire skills and evaluate their learning progress. Perceptions of progress sustain self-efficacy and motivation and promote learning. Students' self-efficacy is influenced by such contextual variables as goals, social models, rewards, social comparisons and forms of feedback. Self-efficacy has been shown to predict student motivation and achievement across a variety of content areas. The theory of self-eficacy states that an individual's beliefs about their personal competences are related to their reactions on the tasks they are given. Individual's perception about the performance on the accomplishment of the task is a strong determinant about the behaviour. Because self-efficacy perception is a determinant in terms of thinking processes that affect individual's achievement such as selecting the ways to be followed, amount of effort to be shown, moves when in case of facing barriers and failure, level of anxiety to be experienced [8, 9]. Self-efficacy is an important determinant of academic achievement in various areas. Pajares and Miller [10] found that self-efficacy has a significant positive effect on mathematics achievement and this effect is greater than the effect of the variables anxiety and attaching importance to the course. Self-regulation, required for achievement, is effected by self-efficacy [11]. Students who possess self-regulation skills should first possess a high level of self-efficacy perception [12]. Studies reveal that students possessing high level of self-efficacy beliefs use self-regulation strategies effectively and obtain a high level of academic achievement [13-21].

It is important to show the effect of gender based roles due to society's culture on individuals' learning skills. Depending on the variation of perceptions' about gender according to culture, the study originated from the concern about the effect of students' self-efficacy beliefs, metacognitive self-regulation skills and academic achievement on SBS points in Turkey. Furthermore, the research also investigated the same subject according to school type by reason of the difference between the instructions at private and public schools. Based on these facts, the question of the research is determined as "Do students' self-efficacy beliefs, metacognitive self-regulation skills, school achievement points, school behaviour points and course test points predict their SBS points according to gender and school type?".

It is anticipated that the findings of the study would guide educators and families in helping students to perform effective learnings. Meanwhile, it is predicted that the results attained within the context of the research would serve as a starting point for the relevant new studies and expansions in the area.

**Method:** In this research, relational survey model is used. Karasar [22] defines the researches which use relational survey model as the studies describing an aspect as it is.

**Study Group:** The study group of this research consists of 1322 6$^{th}$ and 7$^{th}$ grade students from different primary schools, who attend a private course for SBS preparation on weekends. While the questionnaires are applied in the guidance hours via optical forms, students' achievement points, behaviour points, course test points and SBS points are obtained from the guidance department of the same course. The frequencies of the study group according to gender and school type are given in table 1.

Table 1: Distribution of the Study Group according to Gender and School Type

| | | Gender | | | | |
|---|---|---|---|---|---|---|
| | | Female | | Male | | |
| | | F | % | F | % | Total |
| School | Private | 148 | 52.8 | 132 | 47.2 | 280 |
| | Public | 485 | 46.5 | 557 | 53.5 | 1042 |
| Total | | 633 | 47.8 | 689 | 52.2 | 1322 |

Although number of students in public schools is nearly four times than the number in private schools, this reflects the actual dominance of public schools in Turkey. In addition, this difference does not corrupt the analyses in the study, because the evaluation is performed within the groups seperately. Moreover, in case of further analyses between groups, the results will still be valid, as the number of the small group is large enough for statistical applications and the Levene's Test results state that the variances of the groups are equal.

**Data Collection:** SBS Test Points, School Achievement Points and School Behaviour Points: Obtained from students' test preparation courses.

**Gender and School Type:** Obtained from students directly by the part at the first page of the survey.

**Metacognitive Self-Regulation Skills:** Obtained directly from students by the "Motivated Strategies for Learning" questionnaire developed by Pintrinch and De Groot [18] which is translated to Turkish by Uredi [23]. In the study, 13 items from the metacognitive self-regulation part is used. The Cronbach's Alpha reliability coefficient is 0.82 for the applied Turkish form.

**Self-Efficacy Perceptions:** Obtained directly from students by the "Motivated Strategies for Learning" questionnaire. For this study 8 items from the self-efficacy perception part is used. The Cronbach's Alpha reliability coefficient is 0.92.

**Statistical Application:** In order to determine to what degree do school achievement points, school behaviour points, course test points, self-efficacy perceptions and metacognitive self-regulation skills predict students' high school entrance examination points, correlation and multiple regression analyses are conducted to the data by the SPSS 16 computer program.

**Findings:** To find an answer to the question "To what degree do school achievement points, school behaviour points, course test points, self efficacy perceptions and metacognitive self regulation skills predict students' high school entrance examination points", firstly, the correlation between the dependent and independent variables are investigated. Then, effect of the independent variables on the dependent variable is found by multiple regression analysis. The results of these two analyses are given in tables 2 and 3.

Table 2 shows that there is a significant correlation between all the independent variables and the dependent variable.

In Table 3, multiple regression analysis indicates that, except behaviour points, all independent variables are significant predictors of the dependent variable, SBS scores.

To find an answer to the question for private schools seperately, same analyses are applied where the results are given in tables 4 and 5.

Table 4 shows that there is a significant correlation between all the independent variables and the dependent variable.

Table 2: Correlation Analysis between Dependent and Independent Variables

| Variables | N | r | p |
|---|---|---|---|
| Metacognitive Self-Regulation Points and SBS Points | 1322 | .323 | .01 |
| Course Test Points and SBS Points | 1322 | .852 | .01 |
| Achievement Points and SBS Points | 1322 | .730 | .01 |
| Behaviour Points and SBS Points | 1322 | .230 | .01 |
| Self-Efficacy Points and SBS Points | 1322 | .370 | .01 |

Table 3: Regression Analysis on Predicting the SBS Scores

| | Standart Points | | Standardized Points | |
|---|---|---|---|---|
| Variables | β | SH | β | t |
| Constant | 146800.209 | 10502.067 | | 13.978 |
| Metacognitive Self-Regulation Points | 216.519 | 100.138 | .033 | 2.162** |
| Course Test Points | .481 | .018 | .658 | 26.618** |
| Achievement Points | 873.790 | 128.481 | .181 | 6.801** |
| Behaviour Points | 20.669 | 136.730 | .003 | .151 |
| Self-Efficacy Points | 641.670 | 130.807 | .079 | 4.905** |
| $R^2$ =. 74 | F= 771.8** | | | |

Table 4: Correlation Analysis between Dependent and Independent Variables for the Private Schools

| Variables | n | r | p |
|---|---|---|---|
| Metacognitive Self-Regulation Points and SBS Points | 280 | .29 | .01 |
| Course Test Points and SBS Points | 280 | .89 | .01 |
| Achievement Points and SBS Points | 280 | .47 | .01 |
| Behaviour Points and SBS Points | 280 | .21 | .01 |
| Self-Efficacy Points and SBS Points | 280 | .55 | .01 |

Table 5: Regression Analysis on Predicting the SBS Scores for the Private Schools

| | Standard Points | | Standardized Points | |
|---|---|---|---|---|
| Variables | β | SH | β | t |
| Constant | 240602.562 | 31532.559 | | 7.630 |
| Metacognitive Self-Regulation Points | 111.485 | 167.948 | .023 | .664 |
| Course Test Points | .453 | .035 | .708 | 12.899** |
| Achievement Points | 538.080 | 241.540 | .123 | 2.228** |
| Behaviour Points | -459.118 | 374.210 | -.049 | -1.227 |
| Self-Efficacy Points | 662.425 | 266.172 | .096 | 2.489** |
| $R^2$=. 70 F= 132.2** | | | | |

Table 6: Correlation Analysis between Dependent and Independent Variables for the Public Schools

| Variables | n | r | p |
|---|---|---|---|
| Metacognitive Self-Regulation Points and SBS Points | 1042 | .31 | .01 |
| Course Test Points and SBS Points | 1042 | .87 | .01 |
| Achievement Points and SBS Points | 1042 | .71 | .01 |
| Behaviour Points and SBS Points | 1042 | .24 | .01 |
| Self-Efficacy Points and SBS Points | 1042 | .38 | .01 |

Table 7: Regression Analysis on Predicting the SBS Scores for the Public Schools

| | Standard Points | | Standardized Points | |
|---|---|---|---|---|
| Variables | β | SH | β | t |
| Constant | 142157.698 | 11204.151 | | 12.688 |
| Metacognitive Self-Regulation Points | 243.963 | 118.952 | .035 | 2.051* |
| Course Test Points | .469 | .021 | .628 | 22.286** |
| Achievement Points | 1075.067 | 149.474 | .223 | 7.192** |
| Behaviour Points | -91.143 | 149.282 | -.013 | -.611 |
| Self-Efficacy Points | 668.762 | 147.469 | .081 | 4.535** |
| $R^2$=. 75 | | F= 623.8** | | |

Table 8: Correlation Analysis between Dependent and Independent Variables for the Girls

| Variables | n | r | p |
|---|---|---|---|
| Metacognitive Self-Regulation Points and SBS Points | 633 | .23 | .01 |
| Course Test Points and SBS Points | 633 | .89 | .01 |
| Achievement Points and SBS Points | 633 | .68 | .01 |
| Behaviour Points and SBS Points | 633 | .18 | .01 |
| Self-efficacy Points and SBS Points | 633 | .37 | .01 |

Table 9: Regression Analysis on Predicting the SBS Scores for the Girls

| | Standard Points | | Standardized Points | |
|---|---|---|---|---|
| Variables | β | SH | β | t |
| Constant | 157764.622 | 20832.907 | | 7.573 |
| Metacognitive Self-Regulation Points | 207.821 | 133.407 | .034 | 1.558 |
| Course Test Points | .440 | .026 | .598 | 16.699** |
| Achievement Points | 1308.121 | 185.612 | .257 | 7.048** |
| Behaviour Points | -360.762 | 242.761 | -.037 | -1.486 |
| Self-Efficacy Points | 728.737 | 181.039 | .096 | 4.025** |
| $R^2$=. 73 | | F= 346.1** | | |

Table 10: Correlation Analysis between Dependent and Independent Variables for the Boys

| Variables | n | r | p |
|---|---|---|---|
| Metacognitive Self-Regulation Points and SBS Points | 689 | .38 | .01 |
| Course Test Points and SBS Points | 689 | .75 | .01 |
| Achievement Points and SBS Points | 689 | .61 | .01 |
| Behaviour Points and SBS Points | 689 | .25 | .01 |
| Self-Efficacy Points and SBS Points | 689 | .34 | .01 |

Table 11: Regression Analysis on Predicting the SBS Scores for the Boys

| | Standard Points | | Standardized Points | |
|---|---|---|---|---|
| Variables | β | SH | β | t |
| Constant | 136628.346 | 12527.485 | | 10.906 |
| Metacognitive Self-Regulation Points | 391.663 | 151.775 | .055 | 2.581** |
| Course Test Points | .503 | .025 | .688 | 20.187** |
| Achievement Points | 667.821 | 181.413 | .139 | 3.681** |
| Behaviour Points | 339.981 | 173.704 | .051 | 1.957 |
| Self-Efficacy Points | 199.952 | 150.903 | .0452 | 2.123* |
| $R^2$=. 76 | | F= 439.1** | | |

In Table 5, multiple regression analysis indicates that, except behaviour points and metacognitive self-regulation points, all independent variables are significant predictors of the dependent variable for private schools.

To find an answer to the question for public schools seperately, same analyses are applied where the results are given in tables 6 and 7.

Table 6 shows that there is a significant correlation between all the independent variables and the dependent variable.

In Table 7, multiple regression analysis indicates that, except behaviour points, all independent variables are significant predictors of the dependent variable for public schools.

To find an answer to the research question for the girls seperately, same analyses are applied where the results are given in tables 8 and 9.

Table 8 shows that there is a significant correlation between all the independent variables and the dependent variable.

In Table 9, multiple regression analysis indicates that, except behaviour points and metacognitive self-regulation points, all independent variables are significant predictors of the dependent variable for the girls.

To find an answer to the research question for the boys seperately, same analyses are applied where the results are given in tables 10 and 11.

Table 10 shows that there is a significant correlation between all the independent variables and the dependent variable.

In Table 11, multiple regression analysis indicates that, except behaviour points, all independent variables are significant predictors of the dependent variable for the boys.

## RESULTS

**The Findings of the Research Reveal That:**

- Course test points are the most effective variables in predicting the SBS scores both for private and public schools and for boys and girls,
- School achievement, self-efficacy and meta-cognitive self-regulation points are the following variables that predict the SBS scores and they differ according to gender and school type,
- School behaviour points do not have an effect in predicting the SBS scores.

## DISCUSSION

The results of the research show that the practice course test points have the highest significant effect on SBS scores. This is a natural result because the course tests are designed in accordance with the content of the SBS and are conducted under the similar conditions of the SBS. For this reason, students' practice course test points carry a significant resemblance to the actual examination results. However, the point that needs to be discussed is that in predicting the SBS score, school achievement points come second after the course test points considering that the content of the exam is determined among the areas that are taught at school. In this regard, the important point that needs to be focused on is how well the coherence between the educational system at schools and the assessment process is established.

On the other hand, predicting the SBS score by the metacognitive self-regulation ability, there are differences both by the school type and the gender. Metacognitive self-regulation strategy involves the individual's awareness on one's own level of knowledge, one's ability to control this and to do the necessary adjustments. According to the results of the study, the difference in the predictions of SBS scores between the students in public schools and private schools can be explained as following: While the students in the public schools have the chance to take responsibility for their learning process and to enhance this ability, the students in the private schools may under-develop this responsibility and awareness because of the extreme support of their parents. In their study, Mc Whaw and Abhami [24] found that the students who receive high levels of attention for their expected performance in the exam use more metacognitive self-regulation strategies. Moreover, in case of failure in the SBS, the students from private schools in this study still have the chance to enroll in a good school and this fact may a factor on the result that the metacognitive self regulation does not have a significant effect on SBS scores for them. For the difference in gender, the findings may be a result of the dominance of the internal motivation for the females versus the dominance of the external motivation for the males in the country. Also, the difference about the motivation between genders may be a result of both hereditary and environmental factors. Another result that the study reached is that self-regulation has a significant effect on SBS score both by the school type and the gender. Self-regulation is individual's perception for organizing the necessary activities and completing them successfully in order to reach a certain performance [25]. Students who believe that they will be successful in the exam have a higher confidence in organizing their studies for the exam, in setting higher goals and in constructing and following stronger strategies to reach their goals. In the literature, studies state that there is a positive correlation between self efficacy and academic achievement [14, 16, 17, 20, 21]. Finally, the study shows that the school behaviour points have no significant effect on predicting the SBS score. The reason for this can be explained by the fact that, like in all parts of the world, as a result of human nature, the behaviour points are mostly subject to subjective standards instead of objective ones. In other words, although there are clear definitions for evaluation, the teacher's own standards are also involved in the process.

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