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**How Realistic are ECTS Credits  
from the Student's Perspective?**

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**Abstract**

*Various Bologna tools have been developed in order to compare higher education systems with each other, to easily understand higher education systems in different countries, and to ensure recognition and transparency in higher education systems. The European Credit Transfer and Accumulation System (ECTS) is one of these tools. This research aimed to investigate whether there was a difference in reaching ECTS credits between university students studying in an accredited program and those in non-accredited programs. For this, students responded to a survey asking how much time they spent in the courses they attended. The data obtained from the survey are ECTS credits according to the students' opinions. The differences are calculated by subtracting these credit values from the ECTS credits in the curriculum. These differences should be close to zero. In non-accredited programs, this difference is statistically different from zero, and the mean is greater than zero. These findings showed that the ECTS credits in the curriculum and the ECTS credits determined according to the students' opinions in non-accredited programs are different from each other and that the student completes the course with a workload less than the workload in the curriculum. On the other hand, there was no difference between the ECTS credits calculated according to the answers of the students studying in accredited programs and the ECTS credits included in the curriculum of these students.*

**Keywords:** accreditation, ECTS, higher education.

**JEL Classification:** I23.

**1. Introduction**

The main functions of universities are education, research, and sharing them with society. Significant changes are taking place in the fulfilment of these functions of universities. It is essential to make this change sustainable and comprehend and

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implement the change. For this purpose, states can act together to achieve qualified education.

The Education Ministers of France, Italy, Germany and England put forward the idea of creating a common European Higher Education Area at a meeting they held in the Sorbonne in 1998. The Bologna Process officially started in 1999, with the ministers responsible for higher education from 29 European countries meeting in Bologna and signing the Bologna Declaration to create a common higher education area in Europe. The main goal of this process is to create a European Higher Education Area (EHEA) by 2010. This framework is aimed to expand the mobility of students and lecturers in order to improve the role and effectiveness of Europe in higher education, implement the European Credit Transfer and Accumulation System (ECTS), to create easily understandable and comparable higher education diplomas and/or degrees, and to establish and expand the network of quality assurance systems in higher education.

The European Credit Transfer and Accumulation System (ECTS) is a tool of the European Higher Education Area to make studies and courses more transparent. It helps students move between countries and have their academic qualifications and periods of study abroad recognized. ECTS credits allow courses in one higher education institution to be counted towards a qualification studied at another higher education institution.

There are some problems in determining ECTS credits and student workloads (Karseth, 2006). Lecturers trying to plan with ECTS credits in higher education institutions are often faced with the task of having to assign learning times that are unknown in principle and must be estimated (Garmendia et al., 2008).

In most studies that aimed to determine how much time students take to complete a course, students are surveyed at the end of the course and asked to give an overall estimate of the time they have spent on that topic. The results obtained in these studies are very variable (Kolari et al., 2006). Properly formulated, administered, and processed questionnaires can indeed provide consistent answers (Cohen et al., 2007).

In this study, it was compared whether the workload collected from the students through questionnaires differed from the ECTS credits in the curriculum of the students. In addition, the differences between accredited and non-accredited programs were discussed separately. Thus, the relationship between quality assurance and ECTS credits was also examined. As a result, it has been tried to present a study that can create new ideas and form a basis for the calculation of ECTS credits and quality assurance elements.

### ***1.1 European Credit Transfer and Accumulation System***

The European Credit Transfer and Accumulation System (ECTS) is a tool of the European Higher Education Area for making studies and courses more transparent. It helps students to move between countries and to have their academic qualifications and study periods abroad recognised. ECTS supports the planning, implementation, and evaluation of higher education programs. It is an effective and useful tool in the Bologna process, making national education systems internationally comparable.

ECTS credits represent learning based on defined learning outcomes and their associated workload. According to Andrich (2002), there is a strong link between behaviourism and outcomes-based education, and outcomes-based education is the planning and implementation of what is required for all students to successfully do everything in an education system.

There are three methods applied to determine ECTS credits. The first method is the “top-down method”, in which the lecturer in charge of the course calculates, based on his individual experience, by estimating how much time the average student should devote to which applications to be successful in the course. The second method; based on the results of the survey applied to the students, is the “bottom-up method” in which the average amount of time allocated to the basic stages of the course is calculated. The third method is to calculate the ECTS credits according to the learning outcomes of the course. According to the literature, these three methods have positive and negative aspects (Lavigne, 2003; Loskovska, 2008).

In this research, it was planned to determine how realistic the ECTS credits are from the students' perspective in a university where the top-down method is generally used. The purpose was to contribute to this gap in the field of higher education by presenting empirical data to the criticisms of this method. Research results could provide faculty members with a different perspective on ECTS credits in curriculum designs.

## ***1.2 Quality Assurance in Higher Education***

The demand for higher education is increasing day, by day and it is estimated that the number of students studying in these institutions will reach 263 million by 2025 (Karaim, 2011). As the demand for quality education increases, quality assurance (QA) has become a necessity rather than an option for universities where the mobility of students, faculty, programs, and higher education institutions in global networks increases (Hou, 2012; Varonism, 2014). Quality assurance can be a driving force for institutions to achieve excellence in higher education. However, ensuring that the quality of education programs simultaneously meets local and international standards has become a major challenge in many countries (OECD, 2007). Therefore, the cooperation of quality assurance agencies and the acceptance of quality assurance review decisions are needed (Ryan, 2015).

In order to create a quality assurance system in higher education, learning design, content, and pedagogy will be evaluated effectively (Puzziferro, Shelton, 2008). According to Barnett (1992), the quality of higher education can be measured by reaching the determined performance indicators. Another way to describe quality in higher education is faculty-student interaction (Lundberg, Schreiner, 2004).

Accreditation is a review of the quality of higher education institutions and programs (CHEA, 2014). An institution or program is accredited if it meets minimum quality standards. The main objectives of accreditation include quality assurance assessment and continuous improvement. Accreditation agencies have developed standards and procedures to guide institutions in the process of voluntary

commitment to continuous improvement through the application for accreditation. These standards are used by review committees as a basis for decision making and for making recommendations.

One of these standards is the curriculum of the program. Considering that one of the components of the curriculum is ECTS credits, quality assurance of these credits should be established. In this study, the opinions of students studying in accredited programs about ECTS credits were investigated. The findings were aimed to provide knowledge about the quality assurance of ECTS credits.

## **2. Methodology**

The main purpose of this research was to investigate whether there was a difference in reaching the prescribed ECTS credits between university students studying in an accredited program and those in non-accredited programs. The survey model was adopted by collecting quantitative data in the research. The research participants were students studying at a state university in Turkey. At the end of the semester, the students were asked questions about the effort they put into the courses they attended. The questions are given in Table 1. ECTS credits based on the working hours spent by the student were obtained by dividing the total workload obtained from the questions by 25. Because one academic year corresponds to 60 ECTS credits, equivalent to a total workload of 1500-1800 hours. The university decided to put this workload on 1500 hours and one ECTS credit corresponds to 25 hours.

**Table 1. Survey questions**

<b>No</b>	<b>Activity in the semester</b>	<b>Repetition</b>	<b>Time spent</b>	<b>Time</b>
1	How many weeks was the lesson held during the semester?	...weeks	How many hours per week was the lesson held?	... hours
2	How many times did you prepare before the lesson during the semester?	...times	How many hours per week did you work on average for preliminary preparations?	... hours
3	How many times did you prepare homework within the scope of the course during the semester?	...times	How many hours on average did you study for the assignments?	... hours
4	How many presentations/seminars did you prepare during the semester?	...times	On average, how many hours did you work for the presentation(s)?	... hours
5	How many times was a quiz given in the course during the semester?	...times	On average, how many hours did you study for each of the quizzes?	... hours
6	How many times were the midterm exams made during the semester?	...times	How many hours on average did you study for the midterm(s)?	... hours

No	Activity in the semester	Repetition	Time spent	Time
7	How many times did you prepare a project/semester homework during the semester?	...times	How many hours did you work on average for the project/semester assignment?	... hours
8	How many times did you do practice/laboratory/field work outside of class hours during the semester?	...times	On average, how many hours do you spend per week for practice/laboratory/field work?	... hours
9	How many activities (research, forum, discussion, etc.) did you do during the semester, apart from preliminary preparation, homework, and seminars?	...times	On average, how many hours did you work for each of the activities (research, forum, discussion, etc.)?	... hours
10	How many hours did you study for the final exam?			... hours

Source: Authors' own research.

Participants completed the questionnaire on a completely voluntary basis. The number of students who answered the questionnaires about the courses studied from non-accredited programs was 1847. The number of students who answered the questionnaires from accredited programs was 974. In a non-voluntary survey study, question marks arise about the reliability of the data collected, since the student is obliged to answer. In this case, the student may write random numbers in the required fields to complete the questionnaire quickly and cause contamination of the information to be transferred to the academic units.

ECTS credits should be calculated on the basis of the "average student". In order to find the average student, it is the calculation of the arithmetic mean from the remaining data by removing the highest and lowest 25% parts of the data, which is also known as the "interquartile mean" in the literature (Bickel, 1965). In this way, it is not possible to calculate exactly the theoretical distribution of the statistic obtained. However, it is known that this distribution converges to the normal distribution as the number of samples increases (Maronna et al., 2006).

With the data obtained from the ECTS survey, the variable "ECTS credits according to student" was calculated for each course. This value was deducted from the variable "ECTS value in the curriculum". The difference was labelled as the "ECTS credit difference" variable. The fact that this difference value is close to zero means that the value in the curriculum and the effort of the student are equal. Therefore, one sample t-test was used to find out whether the variable "ECTS credit difference" is different from zero. Zero was taken as the test value.

### 3. Findings

Survey data were obtained for 1054 different courses from 68 non-accredited undergraduate programs. These data were subjected to the extraction procedure and the opinions of the students in the lower and upper quartiles of 25% and the opinions of only one student for a course were excluded from the analysis. As a result of this process, 549 different courses were included in the analysis. Survey data were obtained for 372 different courses from 18 accredited programs. After the data were extracted, the ECTS credit difference was calculated for 258 different courses. Descriptive statistics of "ECTS credit difference" variables are presented in Table 2.

**Table 2. Descriptive statistics of the ECTS credit difference variable**

ECTS credit difference	N	Min	Max	Mean	Std. Deviation	Skewness	Kurtosis
Non-accredited	549	-6,10	10,64	,453	2,541	-,224	,245
Accredited	258	-3,16	2,34	,069	1,524	-,342	-,967

Source: Authors' own research.

In Table 2, it can be said that the distribution for both variables is close to the normal distribution because of skewness and kurtosis values. Some researchers suggest that skewness and kurtosis up to an absolute value of 1 may indicate normality (Huck, 2012; Joyner et al., 2018). It is striking that the range and standard deviation are larger in non-accredited programs. In addition, the mean for both variables

was greater than zero. When calculating the difference, the ECTS credits in the curriculum were subtracted from the survey data, so if this difference was greater than zero, it means that the students put in less effort than expected in the curriculum.

One sample t-test was conducted to investigate whether the difference from zero of the "ECTS credit difference" variable was statistically significant. Here, the test value was taken as zero. The results are presented in Table 3.

**Table 3. One sample t-test**

ECTS credit difference	t	df	p	Mean Difference
Non-accredited	4,177	548	,000	,453
Accredited	,733	257	,464	,069

Source: Authors' own research.

When Table 3 is examined, the difference between "ECTS value in the curriculum" and " ECTS credits according to student " of non-accredited programs differs significantly from zero ( $t=4.177$ ;  $p<0.05$ ). If this difference is significantly greater than zero, it means that the effort made by the students is less than the ECTS credits in the curriculum. On the other hand, this difference value is not

significantly different from zero in accredited programs ( $t=0.733$ ;  $p>0.05$ ). This result shows that the ECTS credits specified in the curriculum are more consistent in accredited programs.

#### **4. Conclusion and Recommendations**

In this study, it was investigated whether there was a difference between university students studying in accredited programs and those in non-accredited programs in reaching the ECTS credits specified in the curriculum. For this, the students answered a survey asking how much time they spent in the classes they attended. This study had some limitations during the data collection phase. The fact that the participation in the surveys was on a voluntary basis decreased the representativeness of the population of the sample. In addition, the fact that the questionnaire was administered at the end of the period may have affected the reliability. Because during the whole semester, students may have forgotten how much they had studied. The data obtained from the survey were the ECTS credits in the views of the students. The differences were calculated by subtracting these credit values from the ECTS credits in the curriculum. These differences should be close to zero. In non-accredited programs, this difference was statistically different from zero, and the mean is greater than zero. These findings showed that in non-accredited programs, the ECTS credits in the curriculum and the ECTS credits determined according to the students' views were different from each other and that the student completed the course with a less workload than the workload in the curriculum. On the other hand, there was no difference between the ECTS credits calculated based on the answers of the students studying in accredited programs and the ECTS credits written in the curricula of these students. Based on this finding, it can be said that the workload of students in accredited programs is more realistic. This result may be the result of accredited programs providing quality assurance in education systems. Because the function of national accreditation systems is to provide quality assurance of the program through an evaluation process. (Andreani et al., 2020). In fact, quality assurance for ECTS credits must be established in all programs, accredited or not. ECTS credits determined by faculty members and ECTS credits obtained from student responses should be compared. In cases where the workload is low according to the student, the number of in-class and extra-curricular activities should be increased or the ECTS value of the relevant course should be written lower when revising the curriculum.

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