Career Choice of Deutsche-Schule-İstanbul's Graduates: Influence of 'Hidden Curriculum'

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ABSTRACT

Turkey is a country where the same curriculum for all schools is officially implemented under the Ministry of National Education. Given this fact, it is of interest to ask why students graduating from particular schools differ in their career choice. The reason might lie beyond the official curriculum. Accordingly, this study is an attempt to reveal how the education of a particular foreign school influences graduates' career choice The school chosen for the study in that regard, the Deutsche-Schule-İstanbul (DSI), is located in Beyoğlu, İstanbul. The current study is an attempt to find out how the DSI's socialization influences its graduates' career choice, (more specifically why this school may have a special influence on the choice of engineering as a career) and to reconstruct the interdependence of the relevant influencing factors within the theoretical framework of activity theory.

ABSTRAKT

Die Türkei ist ein Land, in dem ein einheitliches Curriculum für alle Schulen offiziell vom Bildungsministerium vorgeschrieben wird. Aufgrund dieser Tatsache ist es interessant die Frage zu stellen, warum sich Privatschulabsolventen in ihrer Berufswahl unterscheiden. Der Grund hierfür könnte außerhalb des offiziellen Curriculums liegen. Diese Studie ist daher ein Versuch, um herauszustellen, was in einer fremden Privatschule bezüglich des Einflusses auf die Karrierelaufbahn der Absolventen hervorgeht. Hierfür wird die Deutsche -Schule – İstanbul (DSI) in Betracht gezogen, die sich in Beyoğlu/ İstanbul befindet. In der vorliegenden Untersuchung wird versucht herauszufinden, inwiefern die Sozialisation in der DSI die Karrierewahl ihrer Absolventen beeinflusst, (im speziellen, warum diese Schule einen besonderen Einfluss auf das Ingenieurwesen als Berufswahl haben könnte) und die Interdependenz der relevanten Einflussfaktoren mit dem theoretischen Rahmen der Aktivitätstheorie zu rekonstruieren.

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CHAPTER I.

1.1 Introduction

Education is one of the most crucial elements of modernization. In a similar vein, Turkey's educational system, established after the reforms of Ataturk at the beginning of the 20th century, has played an important role in the modernization of Turkey. Currently, there are many types of schools in modern Turkey, most of them are owned and administered by the public, but there are also foreign, private, and religious schools. All of them have in common that officially, at the core, they have the same curriculum, established by the National Education Ministry.

The schools that had been founded since the Ottoman era, mainly in the 19th century, are known as "foreign schools". Their goal is to provide qualified education with at least two foreign languages. Although specific characteristics of those schools vary, their commonality is to educate students, to learn to speak at least two foreign languages. These schools are still among the most successful ones in present-day Turkey,

This study is an attempt to reveal what was happening in a foreign school to direct the graduates' career choice. It is assumed that because of a variety of reasons, foreign schools seem to influence the career choice of their students in a special direction. The school chosen for the study, the Deutsche-Schule-İstanbul (DSI), is located in Beyoğlu, İstanbul. It was originally established as a private school in 1868. Since 1979, the school only accepts students, who have obtained the highest mark in the lyceum examination. In other words, for students to attend this school, a high grade in the above-mentioned examination is required. Also, this school requires fees of a great amount to pay for the education received there.

Even though there are few studies on foreign schools, these studies mostly claim that most of these schools were established for missionary reasons and still continue to serve that purpose. The DSI is a special case in that it has a diverse historical background, as it was not established for missionary reasons but, mainly because of the necessities arising from the growing trade and business transaction between Germany and Turkey.

A further reason why this school has been taken as an example for a case study is, that up until now, this school has not been scientifically investigated (taken under consideration for a scientific endeavor) to analyze the special circumstances and conditions of socializing their students.

Researches on foreign schools often use only statistical data. Consequently, there is not much systematic research on the special educational conditions of foreign schools. Taking this into consideration, the focus in this study will be on the educational activities of a foreign school, without concerning its initial reasons for establishment. The main source for this analysis is primary data brought together from interviews.

Although there are a lot of points, which might explain career choice of a school's graduates, the school system and the parents seem to be the most important ones. Differently put, this study, which has largely been carried out through interviewing graduates of the DSI, focuses on the analysis of the specific reasons for the just-mentioned career choice.

This analysis will be done within the framework of the activity theory and "hidden curriculum". The assumed hidden curriculum is seen as the most significant mediator in the activity system for the career choice of the graduates. In conducting the research, accordingly, key factors influencing career choice have been selected and evaluated by using the data taken from the interviews.

The following three questions can be posed as a guide for the research: How were graduates educated in such a foreign school? Which characteristic features of DSI may be responsible for graduates' career choice? Why did most of the graduates prefer to become engineers?

While addressing these overreaching questions, the study ultimately raises significant questions about the nature and schooling of the DSI. Career choice, activity theory and hidden curriculum are the main topics of this study. The literature on each of these topics will be analyzed in detail in the following chapters.

I.2 Review of Literature on Career Choice and Hidden Curriculum

In this literature review studies on career choice and hidden curriculum are examined. It is not intended to give *a* comprehensive presentation and discussion of all related theories and research. Rather, the purpose is to present an overview of the theoretical framework and empirical studies directly relevant to this study. This literature review will now focus on research to the theoretical frameworks that support this study. Although they exist apart from this study, an examination of these theoretical orientations will prove helpful in evaluating and understanding the ways students experience hidden curriculum. This part is divided into the section on career choice and the one on hidden curriculum. At each section, theories and then empirical studies will be presented. Literature review on activity theory, the theoretical foundation of the thesis, is not given in this chapter, as it will be explicated in Chapter III.

I.2.1 Career choice

A *career* can be defined as "the sequence of individually perceived work-related experiences and attitudes that occur over the span of a person's work life" according to Hall (1987, p.1). In other words, a career is a life-long process that includes the preparation for and choice of an occupation. One's present job is therefore just one of a sequence of work experiences encompassed by a career. Therefore, many theorists have examined 'career choice' as a developmental process. To reflect the nature of such a comprehensive and complex self development throughout the person's life span, it is advisable that the term 'career' be replaced by the phrase 'life career development'. However, it is beyond the scope of this part to scrutinize career development theories; rather, it is attempted to present how career choice and development theories have been studied hitherto in order to determine the area of this study.

'Career choice' has been generally studied throughout the theories of career development that has been defined by numerous scholars and supported by a number of theories[1] (Strong, 1943; Ginzberg 1951; Super, 1957; Tiedeman & O'Hara, 1963; Campbell, 1971; Holland, 1973; Roe, 1976; Osipow, 1983). Significant research in the area of career choice and development began in the 1950s and most of the literature in the field has been produced in the past sixty years. Two leading career choice and development theories proposed by Anne Roe and John Holland, suggest that the appropriate choice of a career for

[1] See for career development definitions Egan et al. 2006, p. 447-456.

an individual depends on *this* individual's personality. First, Roe's research as a clinical psychologist focused on factors that influenced career choice among artists and scientists (1957). She argues that there are observable differences in the way members of these groups deal with people. Moreover, Roe concludes that the differences she detected stemmed from early childhood experiences. Second, John Holland (1973, 1985) also relates personality to career choice. He argues that a person expresses personality through the choice of a career and that so-called interest surveys are really personality inventories. Moreover, he believes that each person holds stereotypical views of various careers.

As mentioned previously, Roe (1957) developed the personality theory of career choice by drawing upon psychoanalytical and personality literature, then hypothesizing that career choice is the result of early childhood experiences, admitting that individual differences are due in part to inheritance of genetic factors. Roe (1957) maintained that patterns of childhood experiences with parents, such as emotional concentration and avoidance or acceptance of the child, can influence the development of two basic orientations: 1) an orientation toward people, and 2) an orientation not toward people. Individuals oriented toward people tend to choose careers in service, business, and art. Those individuals "not oriented toward people" choose scientific, technological, and non-people oriented fields. Roe's contribution to personality-based and social-based theories of career choice has generated great interest in the impact of personality and environment on an individual's career choice.

Another prominent career choice theorist, Holland (1985) supports the conception that career interests and choices reflect in part an individual's attempt to find a work environment she or he perceives to be compatible with her or his personal style. Holland's six personality types (realistic, investigative, artistic, social, enterprising, and conventional) represent different styles of organizing the environmental influences. Holland argues that people search for work environments that let time exercise their skills and abilities, express their attitudes and values, and take on problems and roles that match their personalities.

Holland and Roe's contribution to career choice provides the researchers to focus on personality and environment while examining the reasons of career choice. On the other hand, their studies have some limitations:

First, Roe claims that early childhood experiences influence one's career choice. Whereas one's childhood experiences are important for the career choice, considering one's life with just this period will cause a poor outcome. Since, the child has not already socialized

during the childhood period; therefore, it is more crucial to examine one's school life to get a more valid outcome.

Second, Holland states that "*a person expresses personality through the choice of a career*". He claims that there is a relation between career choice and personality. However, he does not thoroughly examine on how and where the components of personality have been formed that would help the researcher to search the reason(s) of one's career choice. Henceforth, it would be useful for the researcher to recognize under which circumstances one's personality has been formed while investigating his/her reason for career choice.

On the other side, some theorists maintain that it may not be sufficient to examine just childhood periods or personality-career choice relations to find out the reason of career choice. Rather, it might be more appropriate to examine it throughout the life span. Within the framework of this thought, career development theorists around Ginzberg (Ginzberg et al. 1951) examine career choice from a different perspective. Ginzberg et al. (1951) proposed three life stages which broadly correspond with chronological age. According to their theory, starting in preteen and ending in young adulthood, individuals pass through three stages: the fantasy, the tentative and the realistic stage.

In the *Fantasy* period, choices are made without limits. The child in this period, generally up to age eleven, feels as if anything and everything is possible and wishing will make it happen. During this period, the child observes and hears about various types of occupations[2] and begins to role-play the behavior that is relevant to the occupations.

In the second period, *Tentative* (age eleven to seventeen), the person makes choices basically on personal criteria: interests, abilities, and, values. During this period, although the family generally continues to act as an important reference, other peer groups (such as classmates, friends, sports team members, club associates, and other associates) move into prominence.

The third period, *Realistic* (between the age of seventeen and the early years of adulthood), is a time when the individual begins to balance the personal criteria with the opportunities, requirements, and limitations of the occupations presented in society. It is during this period that the individual explores the alternatives and then determines the specific career choice or area of occupation.

[2] *Occupation* (Longman Language Activator Dictionary, 1993) means, *"A word used especially in an official context meaning someone's usual full-time job." Career* means *"the type of work that you do or wish to do for the most of your working life, especially where this involves several similar jobs over a long period of time"* (706). In present study, sometimes occupation is used instead of career as their occupation is known.

As mentioned above, Ginzberg et. al (1951) have examined career choice, as a decision-making period comprised of the three periods “Fantasy”, “Tentative”, and “Realistic”. Examining career choice in three processes seems to be more valid than focusing only on personality as in the approaches explained before. However, the importance of the school in the “Tentative” period is not well elaborated. The socialization of a person during the high school period seems to be most crucial for his/her career choice. Therefore, it is considered that this period should be analyzed in more detail. The present study attempts to fill this gap. It has been recognized that especially in this period, issues of parents, friends, and school come into play to open or close doors of occupational choice.

As yet, theories of the most prominent career choice theorists who are relevant for this study have been introduced. The following paragraphs will present the empirical studies relevant to career choice as it is considered in the present thesis.

Empirical Studies

In recent years, also, empirical studies about career choice are performed (Table 1.1). In this study, six surveys have been taken as examples considering they would be appropriate to understand how ‘career choice’ has been studied so far. The common point of these studies is that all of them investigate the reasons for career choice although they use distinct methods, instruments and samples. In the following pages, these studies will be summarized and then compared with the present study considering their similarities and differences.

Woolnough, Young & Fraser (1997). This study was based upon the hypothesis that the students' career choice is influenced by their ability and personality, by the experiences they had in school and out of school, and by the values placed on careers in science and engineering by society. They compared the career aspirations of science and physics students, from 20 rural and urban high schools in Western Australia. They were particularly interested in students who chose science and engineering as careers. They found significant cultural differences between rural and urban students and that students tended to choose their future careers on the basis of their experiences, their family support and advice, their gender, the information presented either directly or indirectly to them at school and their own beliefs and value systems.

Table 1.1: Overview of empirical studies on career choice

Author	Theoretical approach and method	Instrument	Place	Content	Subjects	Independent variables (factors influencing career choice)
Woolnough, Young & Fraser's (1997)	Grounded theory	Questionnaire	High schools	Engineering Comparative (rural/urban)	Current students	Out of school In school Personality types
Evans (1997)	O'Neil et al.'s model of career decision-making	Interviews	High school	Vocational teaching careers	African Americans	Teacher role models, family support, altruism, and a love for vocational subject matter
Hoover (1998)	Five-category career counseling approaches	Questionnaire	High school	Not engineering Comparative (Females/minorities)	Females and minorities	Grade-point average, parents' education, ethnicity and gender
Powers (2000)	Combination of sociological and personality approaches	Questionnaire	High school	Not engineering Comparative	Landscape architecture students	Parents Opportunity To improve the landscape A good chance for employment
Esters (2003)	Social Learning Approach to Career Decision Making	Questionnaire	High school	Agricultural study	Graduates of an urban agriculture high school	Friends, parents
Singaravelu, White, Bringaze (2005)	Career development	Questionnaire	High school	Comparative (asian-non-asian and domestic) Not engineering	asian-non-asian and domestic students	Family (non-Asian), Friends (Asian)

Evans (1997). Evans, in his dissertation, attempted to identify the factors that influence African Americans to choose vocational teaching careers and to identify the experiences related to their progress in vocational teacher-preparation programs. Factors that influence African Americans to select vocational teaching careers relate to factors identified in the O'Neil et al. model of career decision- making. Factors identified in the model pose as a guide for understanding African American career choice processes. The six major factors in the O'Neil et al. model affecting the career decision-making process are familial, societal, individual, psychosocial-emotional, situational, and socioeconomic ones. An additional factor, the Spiritual Factor, was identified based on findings in his study.

It is found that distinct influences lead to students' decisions to become vocational teachers. Students indicated that teacher role models, family support, altruism, and a love for vocational subject matter, clearly influenced their decisions to become vocational teachers. Evidence of these factors is further supported by the theoretical base of the O'Neil et al. career decision-making model.

Hoover (1998). He examined, in his dissertation, the significant factors that affected career aspirations for high school seniors in a suburban school. It also analyzed differences in females' and minorities' college plans, diploma type, and changes in career aspirations from 1986 to 1996. The factors under investigation with the high school seniors' career aspirations were: gender, ethnicity, grade-point average, and parents' education.

Personal and social factors that related to the high school seniors' career aspiration included grade-point average, parents' education, ethnicity and gender. Success or failure in academics clearly influenced the way students viewed their own potential. The families' socio-economical status was also closely related to the student's academic performance. In regard to ethnicity and gender, students were acting out roles and expectations that society had formed for them.

Powers (2000). Powers, in his dissertation, provided baseline information regarding current landscape architecture students' decision to major in landscape architecture and to describe influential factors and reasons associated with the decision to major in landscape architecture. To better understand career decision-making, a research approach combining sociological and personality-based theories and concepts has been used. Several statistical tests have been used to evaluate the data.

The factors influential in career decision-making are found out as: 1) role of family in student choice, 2) factors relating to when and why students chose landscape architecture, and 3) institution choice and future career choices. He used both personality and sociological theories. Important factors associated with the choice of landscape architecture as a major, such as college choice, parental influence, diversity, access to information, and work experience, have all been shown in this study to contribute to the decision-making process of landscape architecture. Most students chose the major because they say they want the opportunity to improve the landscape, and they see a good chance for future employment in landscape architecture.

Esters (2003). Esters, in his dissertation, investigated factors that influence the career choice of students who graduated from an urban agriculture high school. The theoretical framework for the study was based upon the Social Learning Approach to Career Decision Making (Krumboltz, Mitchell & Jones 1976; Mitchell & Krumboltz, 1990). This theory attempts to explain why individuals make decisions to enroll in an educational program or become employed in an occupation. The theory focuses on the effects of numerous learning experiences, which are affected by various environmental conditions an individual's cognitive and emotional reactions to these learning experiences and conditions.

Findings from the study revealed that the graduates' parents and guardians mostly influenced their decision to attend an agricultural high school. The graduates also indicated several events or experiences such as an interest in agriculture, personal factors, and job opportunities that influenced their decision to attend an agricultural high school. The study also revealed insight on individuals who influenced the graduates' choice of postsecondary education. It was found that friends had more influence on their decision to pursue postsecondary education than teachers, family members, agriculture teachers, and guidance counselors.

Singaravelu, White, Bringaze (2005). These authors examined the career development of Asian international, non-Asian international, and domestic students, specifically the certainty of career and major choice and environmental factors that influenced their choices. Environmental factors include family, school counselors, teacher, friends and The influences of these factors varied among the three groups. According to the results, family influence was most prominent in non-Asian international students. These students originated primarily from Africa, Latin America, and the Middle East, where economic growth is relatively slower than in the Asian countries. Asian international and domestic students scored higher on school counselors for their choice of an academic major and career, indicating the influence of a formal guidance system. For the non-Asian international students the role of school counselors might not be as important as the role of family and friends in non-Asian international students' career choices. Asian international students had the highest scores for the influence of friends.

Daire, LaMothe, Fuller (2007). These authors examined the influencing variables on Black/African and White college students' high school completion, college attendance, and career choice. Results indicate that future income and future status have a greater influence on the career choice of Black/African American college students than on the career choice of White college students. However, future income and future status were not found to be more influential for Black/African American college students' decision to complete high school or attend college.

As illustrated by this overview various theories have been used in the empirical studies on career choice. However, no single theory is sufficient to represent the complex relationship between school factors and career choice. In this study, activity theory is used because it allows the researcher to recognize the whole picture of what is happening during school attendance and might influence later career choice. Moreover, activity theory provides a

framework for understanding how each aspect and level of education in the school is connected with school activities in which they are embedded and how they mutually interact.

As a result of peer-to-peer comparison performed above, following overall similarities and differences could be deducted. Firstly, most of the studies given in Table 1.1 on career choice have used questionnaires. Only Evans (1997) used interviews for collecting data. Interviews seem to be much more appropriate than questionnaires in terms of understanding respondent's perception because in interviews questions have an open-ended format. That means the respondent is not limited. In other words, he/she is free to fully report and explain his/her experiences.

Choosing career is mostly decided during high school years as may be seen from the given overview of empirical studies. According to these studies it seems to be adequate to look closer to the experiences and influencing variables during high school socialization in order to find out how students are influenced in their career choice. Therefore, the empirical study of the present thesis aims to explore the influence of the DSI on graduates' career choice. Even though most of the above studies have chosen high school as an application area, they generally made comparison either between the schools or between genders, races i.e. in the school. The empirical study of the present thesis is not a comparative one, because it is considered that comparison between the schools or genders, races i.e. might fail to scrutinize the main focus of this study.

Also, the overview of the empirical studies shows that mostly data were collected from students when they were still in high school or had just finished school. However, in the study of the present thesis, graduates, already in a job, are preferred because it is considered that information on graduates' career choice should be more relevant for evaluating the influence of the school on their career choice than information from students who have not started their career life yet.

As mentioned formerly, there are many career development theories in the literature. In that context, many career development theories in the literature have been found and evaluated in a framework by Egan et al.'s (2006) study. However, as it can be seen from the reviewed empirical studies on career choice different research methods were employed apart from the theoretical approach used for the analysis. So, the theoretical explanation and the empirical method are often not closely linked to one another. From this perspective, for the present study activity theory is chosen as a framework for explaining the process of career choice and analyzing the most important dependent variables and for providing methodological guidelines for the most appropriate data collection (Chapter IV.2, p.55).

While career choice theories are not a focus of this study, these researches provide a background on the research that has already conducted on the research that has been already conducted on career choice, and also identify influences of the school and parents. Secondarily, this review will look at studies published in relation to the one theoretical framework that guided the study: hidden curriculum.

I.2.2 Hidden curriculum

School curriculum is generally accepted as an explicit, conscious, formally planned course with specific objectives. In addition to this didactic curriculum, students experience an 'unwritten curriculum' described by informality and lack of conscious planning. This refers to a 'hidden curriculum' that includes values, intergroup relations and celebrations that enables students' socialization process. Why parents send their children to a particular school and how this decision might already begin to shape their eventual career choice become therefore, important questions. For this study, the notion of 'hidden curriculum' serves as a means of exploring the complex and varied range of factors involved. The purpose in this section is to present the key literature and debates within the field of 'Hidden Curriculum', described by various theorists, as to better understand its context in this study. Henceforth, firstly, definitions of hidden curriculum by various theorists will be given (Table 1.2). Secondly, two empirical studies on hidden curriculum will be presented to demonstrate how the hidden curriculum concept is operationalized in this study.

The school is an organizational embodiment of a major social institution whose prime function is to bring about the developmental changes in individuals. It is an agency of socialization whose task is to effect psychological changes that enable persons to make transitions among other institutions; that is, to develop capacities necessary for appropriate conduct in social settings that make different kinds of demands on them and pose different kinds of opportunities (Dreeben, 1968, p.3). Any adequate answer to the question of what is learned in school must await a massive empirical effort based on a clear formulation of the elements of school and classroom organization, of the instructional process, of the relevant motivations and inducement, and of the outcomes of schooling (Margolis, 2001, p.5).

In that context, citing Margolis, Emile Durkheim observed that more is taught and learned in schools than specified in the established curriculum of textbooks and teacher manuals. Even though it is not directly mentioned as 'hidden curriculum', this refers to hidden curriculum. In *Moral Education* Durkheim ([1925] 1961, p. 148) wrote:

Table 1.2: Definitions of Hidden Curriculum

Author	Book	Definition
Emile Durkheim ([1925] 1961, p. 148)	Moral Education	Durkheim observed that more is taught and learned in schools than specified in the established curriculum of textbooks and teacher manuals. Even though it is not directly mentioned as 'hidden curriculum', this refers to hidden curriculum.
Philip Jackson (1968)	Life in Classrooms	Learning to wait quietly, exercising restraint, trying, completing work, keeping busy, cooperating, showing allegiance to both teachers and peers, being neat and punctual, and conducting oneself courteously.
Robert Dreeben (1968)	What is learned in classroom?	The hidden curriculum makes the pupils to form transient social relationships, submerge much of their personal identity, and accept the legitimacy of categorical treatment.
Elizabeth Vallance (1973)	"Hiding the hidden curriculum: An interpretation of the language of justification in nineteenth-century educational reform." (Article)	The "unstudied curriculum," the "covert" or "latent" curriculum, the "non-academic outcomes of schooling," the "by-products of schooling," the "residue of schooling," or simply "what schooling does to people"
Samuel Bowles and Herbert Gintis (1976)	Schooling in Capitalist America	Schools are not as an agency of social mobility but as reproducing the existing class structure, sending a silent, but powerful message to students with regard to their intellectual ability, personal traits, and the appropriate occupational choice and this takes place through the hidden curriculum
Jane Martin (1976)	"What should we do with a hidden curriculum when we find one?" (Article)	Hidden curriculum can be found in the social structure of the classroom, the teacher's exercise authority, the rules governing the relationship between teacher and student. Standard learning activities can be found also to be sources, as can the teacher's use of language, textbooks, tracking systems, and curriculum priorities.
Paul Willis (1977)	Learning to Labour	The hidden curriculum of the school structure which is most important in determining the reproduction of class relations in schools; rather, it is the hidden curriculum of pupil resistances (cultural production) which must be understood if the dynamics of social and cultural reproductionism is to be explained.
Jean Anyon (1980)	"Social Class and the Hidden Curriculum of Work" (Article)	The hidden curriculum of schoolwork is tacit preparation for relating to the process of production in a particular way. Differing curricular, pedagogical, and pupil evaluation practices emphasize different cognitive and behavioral skills in each social setting and thus contribute to the development in the children of certain potential relationships to physical and symbolic capital, to authority, and to the process of work.
Michael Apple (1982)	Education and Power	He emphasized that hidden curriculum involves various interests, cultural forms, struggles, agreements, and compromises.
Henry Giroux (1983)	Theories of Reproduction and Resistance in the New Sociology of Education: A critical analysis.	He defines hidden curriculum as those unstated norms, values, and beliefs embedded in and transmitted to students through the underlying rules that structure the routines and social relationships in school and classroom

> "In fact, there is a whole system of rules in the school that predetermine the child's conduct. He must come to class regularly, he must arrive at a specified time and with an appropriate bearing and attitude. He must not disrupt things in class. He must have learned his lessons, done his homework, and have done so reasonably well, etc. There are, therefore, a host of obligations that the child is required to shoulder. Together they constitute the discipline of the school. It is through the practice of school discipline that we can inculcate the spirit of discipline in the child".

Within the framework of that thought, Philip Jackson (1968) is generally acknowledged as the originator of the term 'hidden curriculum' in his book "Life in Classrooms". Through observations of public grade classrooms, Jackson identified features of classroom life that were inherent in the social relations of schooling. He observed that there were values, dispositions, and social and behavioral expectations that brought rewards in school for students and that learning what was expected along these lines was a feature of the hidden curriculum. He argued that hidden curriculum emphasized specific skills: learning to wait quietly, exercising restraint, trying, completing work, keeping busy, cooperating, showing allegiance to both teachers and peers, being neat and punctual, and conducting oneself courteously (Jackson 1968, 10-33).

About the same time, Robert Dreeben (1968) examined the norms of school culture and concluded that they taught students to "form transient social relationships, submerge much of their personal identity, and accept the legitimacy of categorical treatment" (Dreeben 1968, p. 147). He focused on the identifiable social structure of the classroom -for example waiting before getting time to teacher- and argues that classroom structure teaches children about the authority. Dreeben maintained that the experience of formal schooling not only taught the overt curriculum, but also indirectly conveyed to students values such as independence and achievement, useful for their later membership in adult society.

Durkheim, Jackson and Dreeben sometimes collected under the heading of consensus theory, provide the foundation for the general definition of the hidden curriculum as the elements of socialization that take place in school, but are not part of the formal curricular content. These include the norms, values and the belief systems embedded in the curriculum, the school and classroom life, imparted to students through daily routines, curricular content, and social relationships (Margolis, 2001, p.6).

This approach provides the foundation for the general properties of the hidden curriculum and confirms that schools exist to serve the interests of the larger society. However, Lynch (1989) claimed that this approach has a number of limitations. First, it falls

under consensus theory which stresses consensus and stability while rejecting changes caused by conflict. Second, viewing the norms and belief system the school is transmitting as unproblematic and unquestionable, this approach treats students as passive receipts defined in reductionist behavioral terms. Students are viewed only as the products of socialization without the ability to make meaning for themselves (Lynch, 1989).

Vallance (1973) suggested three dimensions along which these various labels may be read: (I) Hidden curriculum can refer to any of the *contexts* of schooling, including the student-teacher interaction unit, classroom structure, the whole organizational pattern of .the educational establishment as a microcosm of the social value system. (2) Hidden curriculum can bear on a number of *processes* operating in or through schools, including values acquisition, socialization, and maintenance of class structure. (3) Hidden curriculum can embrace differing *degrees of intentionality,* and of depth of "hiddenness" as perceived by the investigator, ranging from incidental and quite unintended by-products of curricular arrangements to outcomes more deeply embedded in the historical social function of education. Vallance claims that an explanation for the peculiarly systematic, though allegedly unintended outcomes of schooling. These outcomes may not be nearly as unintended as we think. They may be hidden from the rhetoric precisely because they do work (Arieh, 1991).

Influenced by Marxism, so-called neo-Marxists, some branches of subsequent educational theorizing became more critical about the way in which schools serve for capitalism and state and function to mediate and legitimate the reproduction of inequality, including social class, racial and gender relations. The socialization process was analyzed in terms of its reproduction of stratified relationships, outcomes, and ideological belief structures (Ibid, p.6).

The most influential examination of the process by which schools reproduce these dominant interests was Schooling in Capitalist America by Bowles and Gintis (1976), which is one of the most well-known pieces of research pertaining to the unwritten functions of school life. According to Margolis (2001), their “correspondence thesis” is central to most current debates on the hidden curriculum of schools. The central tenet of the correspondence principle is that ‘a structural correspondence’ exists between the social relations of school life and the social relations of production. They argued that through formal and hidden curricula, schools reproduce the social relations necessary to maintain capitalism: competition and evaluation, hierarchical divisions of labor, bureaucratic authority and compliance. They also argued that the reproduction of these skills and attitudes through the educational system corresponds to and prepares students for future stratified work roles.

Paul Willis (1976) referred to the school's role in social reproduction, Willis claims, resides not merely in some dominant and invincible institutional determinants, but also in the cultural forms produced by the 'lads' in their resistance to the authority of the school. According to Willis, the hidden curriculum of the school structure is important in determining the reproduction of class relations in schools; rather, it is the hidden curriculum of pupil resistances (cultural production) which must be understood if the dynamics of social and cultural reproductionism are to be explained.

From another perspective, theorists including Michael Apple, Jean Anyon, and Henry Giroux engaged in the project of describing how hidden curricular practices provided qualitatively differential forms of schooling to students from different social classes.

Apple (1982, 2004) emphasized that hidden curricula involve various interests, cultural forms, struggles, agreements, and compromises. Students are not simply passive receptacles but active players in the systems that attempt to socialize them. Students negotiate, accommodate, reject, and often divert socialization agendas. In that context, hidden curriculum occurs at multiple places and times during schooling. Students encounter norms, values, and beliefs through the rules and practices that form the daily routines and social relationships in the classroom and the extended school. This hidden curriculum, grounded in industry's attempt to control labor and increase productivity, must also foster faith in the putative 'neutrality' of schools and the supposed 'natural' environment of education and tolerance (Apple 1982, 12).

Jean Anyon (1980) published an article entitled "Social Class and the Hidden Curriculum of Work", in which he reports the findings of a study in five schools. He investigated how children of different economic classes receive very different types of educations. Therefore, he compared two working-class schools, one middle class school, an upper middle class school, and an elite school. Anyon found a connection between the social class of the students, the type of education they receive in school, and the type of work that they are prepared to do. He observed that children in poor schools were prepared to become obedient laborers, while children in elite schools were prepared to become original thinkers and leaders. The article attempts a theoretical contribution as well and assesses student work in the light of a theoretical approach to social-class analysis. It is suggested that there is a 'hidden curriculum' in schoolwork that has profound implications for the theory - and consequence - of everyday activity in education.

Henry Giroux (1983) examined the roles of students and teachers in resisting curricula both official and hidden. He conceptualized students and teachers as active agents

working to subvert, reject, or change curricula. He noted that 'curriculum' was not a unified structure but incoherent conflicting and contradictory messages. Henry Giroux (1983a, p. 61-63-110) linked the structure of hidden curricula to notions of liberation, grounded in values of personal dignity and social justice. Schools therefore become sites of domination and contestation. This does not mean that the terrain is evenly shared between the forces of domination and resistance, or that all forms of oppositional behavior have a radical significance. Given that acts of resistance vary, each oppositional act must be analyzed to see if it constitutes a form of resistance.

Another theorist Martin (1976), influenced by Elizabeth Vallance, argues that there are two kinds of hiddenness based on the question of intent. A hidden curriculum may be purposely hidden by someone or some group, or the hiddenness may be consciously unintended, but in either case a hidden curriculum is not openly acknowledged to the learners in a given setting (Martin, 1976). According to Martin, a hidden curriculum is not something one just finds; one must go hunting for it. Since a hidden curriculum is a set of learning states, ultimately one must find out what is learned as a result of the practices, procedures, rules, relationships, structures, and physical characteristic which constitute a given setting. Martin states that hidden curriculum can be found in the social structure of the classroom, the teacher's exercise authority, the rules governing the relationship between teacher and student. Standard learning activities can be found also be sources, as can the teacher's use of language, textbooks, tracking systems, and curriculum priorities.

In the context of definitions of hidden curriculum, the present study will use hidden curriculum as a research tool for analyzing factors which implicitly influence socialization during school attendance. It is beyond the scope of this study to comprehensively discuss hidden curriculum within the framework of all hidden curriculum approaches. Rather, the present study aims to find out what kind of items belongs to hidden curriculum concept in the school within the framework of Martin's perspective. In that context, the following two studies will be summarized as the samples that will help for the analysis of hidden curriculum in Chapter V.

Empirical studies

Since the findings of following studies helped to form this study, the design, results, and limitations of each study will be briefly reviewed below.

Wren (1999), in his article, encourages teachers and administers to gain a more complete picture of the school environment through an exploration of the symbolic nature of the hidden curriculum. This study gives advises to educators about the importance of understanding the hidden curriculum in the school. Therefore, he claims that the educators will be able to improve the quality of the education when noticing the hidden curriculum. In his study, he also gives a check list and document analysis for examining the hidden curriculum in schools.

On the other hand, Wren's study is lack of valid data for examining the influence of hidden curriculum. Because it is not an empirical study, the author defines hidden curriculum and gives suggestions to reveal the hidden curriculum in school. However, he does not state any ideas about exploring the hidden curriculum in schools. Therefore, his article may be helpful to the researchers to develop their hypotheses while exploring the hidden school in a school, but comprises no direct hint for an empirical study.

In that case, the hypotheses of the present study have also been developed taking Wren's theory into consideration. For example, document analysis such as yearbook and textbook is also employed in this study. Besides, the checklist of the author, school rules, ceremonies, rituals, and routines is used while forming the interview questions.

In another study, Marion and Coladarci (1993) claimed that the under-representation of women in science is, at least partially, a consequence of learning, and therefore, may be considered a symptom of hidden curriculum in science education. The major research question concerns how a hidden curriculum in science education may lead to an under-representation of women in science. They used Martin's conceptual framework of 'hidden curriculum' (Martin, 1976) to investigate the under-representation of women in science.

Marion and Coladarci's survey has been done through empiric data different than Wren. The researchers claim that under-representation of women in science education is because the hidden curriculum and this hidden curriculum can be named as learning states, settings, and sources that may underlie variability in science course-taking behavior of undergraduate students.

When this survey is examined within the framework of this thought, one can consider that it has many similarities throughout the present study. However, it differs in its foundation. Since the researchers started to investigate their study after deciding which elements can be accepted as a hidden curriculum in a school. And they also claim that as a contribution to hidden curriculum research and theory, their study aims to identify and understand the learning states, settings, and sources that may underlie variability in science

course-taking behavior of undergraduate students. However, the present study does not claim to know the content of hidden curriculum at the beginning of the study. It is considered that this kind of study will be more valid in order to find out objective data.

To sum up, the hidden curriculum is very much connected to and can be identified by the social interactions within an environment. Thus, it is in operation at all times, and serves to convey unspoken messages to students about values, attitudes and principles. An evaluation of the environment and the unexpected, unplanned interactions between teachers and students can serve to reveal the hidden curriculum as it operates within a given setting. In that context, this study attempts to investigate this unexamined part of the school. While there is no set procedure or measurement instrument to identify a hidden curriculum, an analysis of a learning environment can highlight previously unseen elements of a student's education. It is believed that the hidden curriculum concept constitutes a basis for understanding the effects of the DSI on graduates' career choice.

This literature review is aimed to provide a summary of the existing research on career choice and hidden curriculum and on the issues deemed pertinent to the DSI's influence on career choice of graduates. This literature review also provides background on several of the theoretical ideas used to support the study.

The theoretical part of this study (Chapter III) will be presented after giving the historical background (Chapter II) of the high school that will be examined in this study.

CHAPTER II. THE HISTORY OF THE DEUTSCHE-SCHULE-İSTANBUL (DSI)

In this chapter, the historical background of the educational institutions over the period from the Ottoman Empire to present-day Turkey is briefly sketched. It is beyond the scope of this chapter to discuss in detail the Ottoman education system. Yet since the DSI was established in 1869, as one of the foreign schools (schools established by non-Ottomans, particularly Westerners in the Ottoman Empire and today, still plays a significant role, its history is examined in this chapter. Henceforth, throughout this chapter the following questions are discussed: What were the educational institutions in the Ottoman Empire? How have foreign schools developed? Why have Turks sent their children to these schools? What role did these schools play in Turkish history? German schools are explained separately. Moreover, the history of the DSI is presented in detail to facilitate the understanding of the DSI in relation to other foreign schools.

II.1 Educational Institutions in the Ottoman Empire

Ottoman history was exposed to a great change and an intensified reform process from the beginning of the eighteenth century to the end of the Ottoman Empire. One of the most important aspects of this period was the reform process in educational life. In this part, Ottoman educational institutions will be summarized dividing into two types: educational institutions within the Ottoman Empire, as traditional that functioned until the implementation of the reforms and contemporary, that were founded after the period called Tanzimat (1839).

The educational system in the Ottoman Empire had long been based upon the system of primary schools *'Sıbyan'* and secondary schools *'Medrese'* that were religion-based schools. Arabic was the only foreign language taught at *Medrese* in addition to religious subjects. The higher educational institutions *'Enderun'* were known as *'Saray Okulu'* (Palace Schools). Prior to the *Tanzimat* period, the Ottoman government, with exception of the Palace School, took no responsibility[3] whatsoever for the general education of its subjects but education had been provided by the various *millets*[4]; education for Muslims was controlled by

[3] Through the Regulation of General Education, which was issued in 1869, along with the contributions of Saffet Paşa, the Minister of Education, some of the most important changes were made to the education system. This law *Maarif-i Umumiye Nizamnamesi* organized a new system of education and joined this to the Ministry of Education. Education was now considered to be the work of the government. See Akyüz, Eğitim Tarihi, p. 177-178.

[4] *Millet* is an Ottoman Turkish term for a confessional community in the Ottoman Empire. Until the 19th century (Reformation Era) beside the Muslim millet, the main millets were the Greek Orthodox, Jewish, Armenian and Syrian Orthodox. Armenians formed more than one (actually three) *millet*s under the Ottoman rule (http://en.wikipedia.org).

the *ulema* (Muslim scholars) and took place in *Sıbyan*, *Medrese* and *Enderun* (Palace school). These schools used to be found next to a mosque and the children of the area attended free of charge: the schools were dependent on donations of the pious (vagf) that met all the expenses of the schools[5]. Reading, writing, knowledge of religion, the Qur'an and mathematics were taught in primary schools (Ergin, 1977; Kazamias, 1966).

In a modern sense, the *medrese*[6] provided education at different levels: secondary, high, and even higher degrees of education. In these institutions, the future workforce for the highest of society's functions was produced, for example the *ulemas, muderises (thinkers)*, etc. In Ottoman society, until the beginnings of the XIX century, along with these schools were some specialized schools for the education of various profiles, for example: *Darulhuffaz*, for the education of spiritual people - haf'zes, *Darulşşifa*, for medical personnel, and schools for preparation state personnel– diplomats (*Enderun*) (Ergin, 1977).

An educational institution of highest importance was the court school called *Enderun.* The first school of that type was founded in 1363, after the conquest of Edirne by Murad I. The overall objective of *Enderun* was to train well-educated states-men for the Ottoman Empire. Arabic and Persian were taught as foreign languages.

In 1839, the period called *Tanzimat*[7] begins, which means modernization reforms of the state institutions – administration, army and education. One of the targets of these processes that began during the rule of the sultan Abdülmecid, was to establish new educational institutions[8] that would be under control of the state. Therefore, besides the existing educational institutions – the medreses and the *sıbyan*, schools called *rushdie, idadia and sultanie* were established[9].

In the history of the Turkish educational system, the educational institutions called *rüştiye*, primarily had the role of high schools. Gradually through time, their role fell down to the level of primary education. The *rüştiye* were established as a result of the necessity to fill

[5] Meydan Larousse, Büyük Lügat ve Ansiklopedi (6. cilt), Sabah gazatesi, p.115
[6] The quality of the medrese-the higher school of Islamic education- had declined sharply since the sixteenth century (Gibb and Bowen, 1957).
[7] *Tanzimat*- literally 'reorganization'; used to refer to the social and political reform of the period 1839-76. "It was a period of sustained legislation and reform that modernized Ottoman state and society, contributed to the further centralization of administration, and brought increased the state participation in Ottoman society between 1839 and 1876" (Shaw&Shaw, 1977, p.55). For modernization of Ottoman see: Mardin, (1991); Kazamias, (1969); Szyliowicz, (1968); Verschoyle, (1950); Lewis (2002); Landau (1984) Basgoz. & Wilson (1973).
[8] See Mustafa Kacar, Osmanlı Devleti'nde Bilim ve Eğitim Anlayışındaki Değişimler ve Mühendishanelerin Kuruluşu, (PhD Thesis), İstanbul, 1996, on the reform movements in the military field in the Ottoman Empire and on the situation of the schools of engineering up until 1808.
[9] See Hasan Ali Koçer, Türkiye'de Modern Egitimin Doğuşu ve Gelişimi (1773-1923), M.E.B., İstanbul, 1992, s., 63.

in the educational gap between the primary schools and the newly formed military schools after 1838 (*Mühendishane, Harbiye, Tıbbiye).* The timeframe for the educational process in these institutions varied: in the starting period, at the level of creation, education took two, later on four, and after 1859 it took six years. According to Kazamias the purpose of the *rüştiye* was:

> To provide a more advanced type of education than the *sıbyan* (primary) schools in preparation for the various military, naval, and medical schools and for government offices. Originally it was envisaged as a sort of secondary school to fil1 the gap that existed between primary schools and higher institutions. In reality, however, it was something like a senior primary school, with a leaving age of approximately twelve. (Kazamias, 1966,53).

The *idadi* had a function of preparation for higher education and they were considered to be very important educational institutions (Kodaman, 1991: 119). Those were institutions that were equal to the level of a high school. The first *idadi* (idadi = preparation) were founded as educational institutions for preparation of students for the high military schools. In addition to the preparation for higher education, the *idadi* prepared a workforce for free occupations, public servants etc. (Unat, 1964. 45). The time frame for education in these institutions was three years, but, together with the *rüştiye* schools, in the *vilayet* centers the complete education took seven, and in the *sancak* centers, five years (Koçer, 1991: 101-102; www.egitim.aku.edu.tr/tet04).

With the establishing of the female *idadi*, there was a tendency to introduce a curriculum based on European patterns. In addition to the Turkish, French, German, or English language, as well as the general cultural subjects, there were other subjects introduced, such as: Music, Handicraft, Household Chores etc. (Gelişli, 2002).

In consultation with the French minister for education Viktor Durue, the sultanias were founded in 1869. The education in these institutions (together with the *idadi*) took six years (Ebüzziya, 1973: 133).

To sum up, as indicated in the above paragraphs, Ottoman educational institutions could be categorized into two periods: traditional and contemporary. What is noticeable is that various schools in the Ottoman Empire were established as a foundation. Furthermore, they were not under the control of the Ottoman government[10]. Therefore, as many schools were

[10]*Due to the diverse opinions of the generations that were grown in these two essentially different school systems forming a definite direction for the state affairs became more and more difficult. The duality in, the system continued to exist even during the initial period of the Republican Era. Finally, unification in the*

established as could be financed. In addition to these schools, many private high schools run by foreigners, such as the French, the German, the Italian were opened in the Ottoman Empire. In the following section, the establishment and development of these foreign schools, particularly the Deutsche-Schule-İstanbul, will be summarized.

II.2 Development of Foreign Schools throughout the Turkish History

Immediately after the conquest, Fatih Sultan Mehmed, the Conqueror, granted rights to the Genoese community of Galata, across the Golden Horn (1453) (İnalcık, 1998, p. 271-376). Because the Sultan granted some privileges to Catholics and Orthodox churches, they could continue to worship in their churches. Moreover, they could establish schools to train religious men and teach reading and writing to their children (Haydaroğlu, 1990, p.10). Later Venetians were also accorded commercial privileges in the Ottoman domains. During the sixteenth century the Ottoman sultans granted France and England capitulations, with the Habsburg following at the beginning of the seventeenth century. The eighteenth century witnessed a dramatic increase in the number of foreign powers that applied for commercial privileges (Ekrem, 1934). An important capitulary privilege allowed foreigners to recruit Ottoman persons as interpreters.

Foreign religious groups[11] (missionaries) were allowed to establish schools in the Empire. The number of these schools particularly increased during Süleyman the Magnificent's era (1520-1566) (Akyüz, 1997, p. 88) since he gave *'imtiyazat-I ecnebiye' (Kapütülasyonlar,* capitulations*)*[12] to France (1535). Subsequently, a Capuchin missionary group comprised of three people came to İstanbul on July 7th, 1626 and settled in a house next to St. Georges Church in Galata, July 19th, 1626. They began to teach the requirements of Christianity, administer the sacraments to patients, prisoners and the crew of French ships in

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educational system was brought about by the acceptance of "Law of Unification of Education" in the Parliament on March 3, 1924. See Ergün, 1982.

[11] For the religious groups and their activities in the Ottoman Empire, see Mutlu, 2005; Haydaroğlu, 1990; Vahapoğlu, 1990.

[12] *İmtiyazat* means commercial rights and privileges given to foreign people, class, institution or states (İslam Ansiklopedisi: 1997. Cilt 22, p. 242).
The alliance of A.D. 1535 between Suleyman the Magnificent and Francis I against the Hapsburgs. The treaty consecrating this alliance paved the way for French predominance in commercial relations (14). Article 3 of the controversial first French capitulations of 1536 established the outlines of foreign consular jurisdiction. The French King was allowed to appoint an ambassador to the Porte and consuls in provincial Ottoman centers of trade. These officers had the authority of adjudicate all criminal and civil cases among French subjects in their place of residence according to their own customs (Boogert, 2005, p. 35).

the port. In addition to this, the number of Catholics increased and a school was established next to the church. (Polvan, 1952).

Other foreign states gradually started to benefit from these capitulations in the eighteenth and earlier twentieth centuries as well (Ayas, 1948, p.692). These were the years of the great flowering of Protestant oversea missions, of Catholic reaction in kind, and of the new imperialism which led governments and peoples of several European powers to support in the Near East schools purveying their own brand of culture (Davison, 1961, p. 291). Following, many religious groups financed by America, France, England, Italy, Prussia and Russia established their schools within the boundaries of the Ottoman Empire. Those schools were called 'foreign schools' (missionary schools)[13] and they were initially established as religious institutions that belonged to churches. However, as embassies gradually needed educational institutions for their staff's children, they also launched to establish '*Elçilik Okulları*' (Embassy schools) next to these schools. As such, these schools remained foreign state institutions in the Empire (Haydaroğlu, 1990, p.10). As Allen (1968, p. 144) states, foreign schools are primarily thought to be connected with their nationality rather than with their religious denomination, despite the fact that the large majority of them are supported by religious groups. He also adds, "*this is explainable largely because secular governments frequently interfered on behalf of the schools from their own government and because the language used for the instruction in a foreign school was always that of the country from which the teachers came*" (Allen, 1968, p.144). In this regard, these schools were established by religious groups from different countries and they gradually worked for the interest of those foreign countries.

The first schools (Catholic) were organized by Jesuits. King Henry IV sent Jesuits to İstanbul to educate Catholic pupils as demanded by the church and the French envoy. Therefore, they established *De Saint Benoit* (1607) and gave courses in Latin and Greek grammar and mathematics. The school started to give French, Turkish and Modern Greek courses at the end of 17th century (Ergin, 1977, p. 638-639).

As mentioned previously, educational institutions in the Ottoman Empire were institutionalized as Islamic institutions. Therefore, at first sight, one may think that establishing such schools is not unusual for the Empire. However, one of the most important questions that should be answered is: *Why have Turks sent their children to foreign schools?*

[13] Named also as 'mission(ary) schools' (Mutlu, 2005; Davison, 1961, p. 291).

The 19th century is an important period in the transformation of foreign schools throughout the Ottoman Empire. During the *Tanzimat* period, foreign schools mushroomed, particularly American missionary schools[14]. In 1840, there were only 6 schools with 84 students. By 1870 this number had increased to 233 schools and 5880 students (Kocabaşoğlu, 1989). Although these schools had Armenian, Bulgarian and Greek students initially, Turks began to be drawn to American schools because speaking English[15] resulted in good jobs (Allen, 1968). Another reason for the increasing popularity of these schools among the Turks was the dissatisfaction of the people with the education offered in Turkish *mektep*[16]. Başaran (1997) argues in her dissertation that although the Ottoman government wanted to improve the state education system, it could not succeed. Therefore, due to the lack of good state schools, many people preferred the foreign schools, which contributed to their success.

According to Güven (2004), as these foreign schools had become prominent, Turks preferred to send their children to these schools (Figure 2.1)[17]. These schools presented western ideology with their modern libraries, dormitories, courses and teaching styles. In addition, they became eligible educational institutions with financial aid and teacher support given by their countries (Haydaroğlu, p.110).

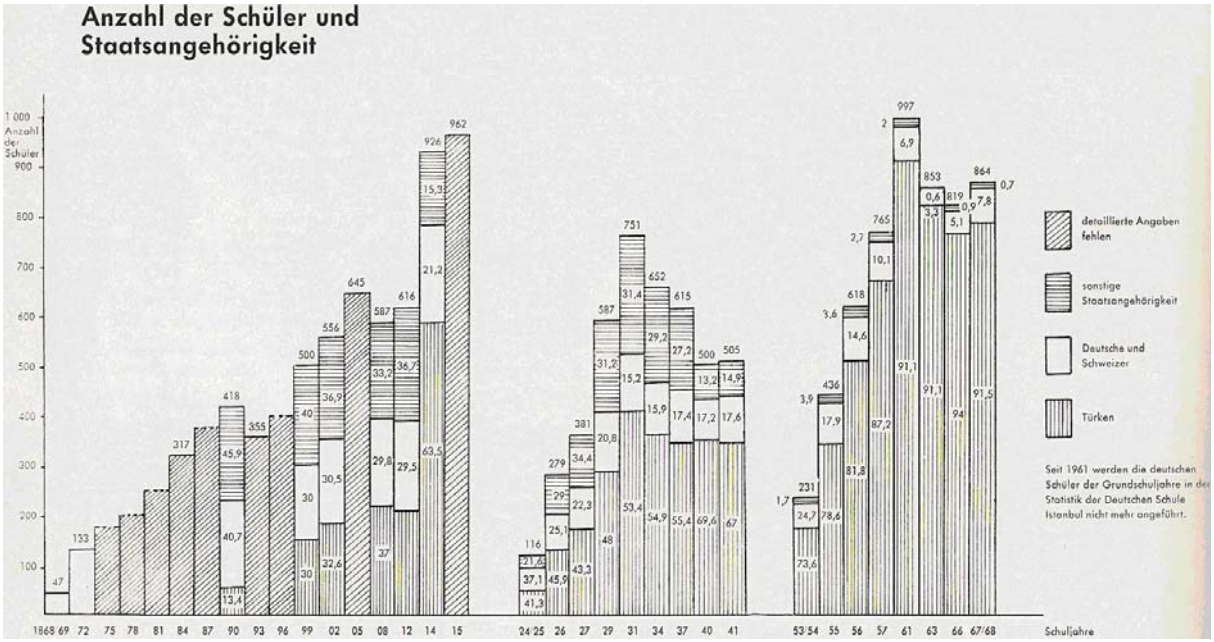

Figure 2.1: DSI's population of citizens according to years (Semerau & Thornsted, 1968, p. 190).

[14] Hamlin (1893); Washburn (1909).
[15] Although French speaking was more popular in the 19th century, English gradually became important.
[16] This term was used later to simply mean 'school'.
[17] Figure 2.2 shows the number of Turkish and other nations' pupils in the DSI.

The question of "what was the background of those Turkish parents" should also be raised as an attempt to find an answer to the question of why Turkish parents sent their children to these foreign schools. An analysis made in 1914 regarding the occupations of students in the French College St. Joseph in İstanbul shows that all came from upper-class groups. According to this analysis: Eight princes, 22 marshals and generals, 90 physicians, 20 lawyers, 20 engineers, 300 "possessors on income" (Ergin, 1977, p. 644) were among Turks who had been partly educated in foreign schools. Also, the parents had positions in the empire, either coming from heterodox religious backgrounds or elite families already considerably influenced by Western culture (Davison, 1961, p.294).

The second important question is: *What role did these schools play in Turkish history (from the late Ottoman till modern Turkish Republic)?* Although not having sufficient official statistics about the number of the schools, it is understood that foreign schools began to expand particularly by the 1700s and became widespread after 1850s in the whole Ottoman territory. By the eve of World War I, an official count put French Catholic schools in the Ottoman Empire at 500, American schools at 675, British schools at 178 (Davison, 1961, p. 291). On the other hand, today, just fifteen schools (Table 2.1) are present in the region of Turkey.

Table 2.1 Foreign schools in present Turkey

Foundation year	Name of Foreign Schools in Turkey
1583	Saint – Benoit French School
1844	Pangalaltı Notre Dame de Sion French Girls' School
1846	Lycee Français Sainte Pulchérie
1857	Beyoğlu British Girls' High School
1863	Robert College
1868	Beyoğlu German School (DSI)
1870	Beyoğlu Saint Michel French School
1870	İstanbul Saint Joseph French School
1871	Üsküdar American Girls' College
1878	American Collegiate Institute (İzmir)
1880	İzmir Saint Joseph French School
1882	Österreichisches St. Georgs-Kolleg İstanbul
1888	Liceo Statale Italiano (İstanbul)
1888	Tarsus American College
1934	German School-Ankara

According to Davison, foreign schools played a significant role in the westernization of Turkey. These schools continued their development with the help of their states. They became an example in terms of their method and system. Some prominent names that played an important role in Turkey's political, social, economical and cultural life studied in these schools (Ertuğrul, 1998).

Foreign schools were also successful in presenting the importance of education to Ottoman statesmen and citizens. The statesmen started to focus on the schools. Foreign schools set a good example with their modern, qualified and improved educational level (Haydaroğlu, 1990, p. 145). They provided foreign languages, history and technical sciences in their curriculum. Therefore, the curriculum of *Rüştiye* and other schools established during the westernization of the Ottoman Empire was influenced (Güven, p.140).

Theologian Dr. James Barton (1908, p.192-3) evaluates the effects of these schools as follows:

> These modern educational institutions in Turkey are a mighty force in reshaping the life, thought, customs and practices of the people of that country. Men and women from these schools are taking leading positions there in the learned professions as well as in commerce and trade. Large numbers of former students in the mission schools are now prosperous merchants and businessmen in Europe and America. Through these men of modern ideas Western machinery and the products of our factories are finding their way into that part of the East in increasing quantities while the products of Turkey are in exchange brought to us. It is probably true, as has been frequently stated, that the money given from America for the establishment and support of American colleges in Turkey is far more than returned, with large interest, in the form of increased trade with that country.

The foreign schools had many tasks. One of them was to educate gifted and ambitious people who were needed to develop the relations between Europe and Ottoman Empire. Secondly, they wanted to educate groups who would be negotiators for the West in the East (Tekeli, 1993, p.37). Although some foreign Catholic schools, in particular the French, had already existed for many years in the empire, the rapid growth of foreign schools came in the nineteenth and early twentieth centuries. These were the years of the great flowering of Protestant oversea missions, Catholic reaction in kind, and the new imperialism which led governments and peoples of several European powers to support Near East schools purveying their own brand of culture (Davison, 1961, p. 291).

When considering Germany's attempts to establish German schools, one should examine German expansionist policies that were not as rapidly developed as that of England, France, and the US. They gradually established schools after the middle of the nineteenth

century. Lutheran missionaries[18] organized the schools that instructed in German. Yet their activities were not as extensive as that of other nations, since at that time (pre-1870) there was no political unification (a common nationality) in Prussia (Germany). After Germany was unified in 1870, it aspired to spread its influence mostly throughout Mesopotamia and Palestinian. According to Allen (1968, p. 25) Germany's imperialistic schemes, which began toward the close of the nineteenth century, had made Turkish friendship and co-operation an important part of the "Berlin to Baghdad" (Rathmann, 1962) venture. The friendship bore fruit in a reorganization of the Turkish army along German lines and in concessions for various enterprises, chief of which was the railroad from İstanbul destined for Baghdad. Lutheran missionaries also offered to establish schools especially in Bursa, Konya, Ankara, Sivas, Samsun, Trabzon, Adana, Mersin, Antep, Diyarbakır, Mardin, Musul, Basra, Damascus, Trablusgarp and Yafa (Grothe, 1913). It has already been elucidated that those centers that were targeted by Germany were those populous areas around the Baghdad railway line 'die Bagdadbahn' (Rohrbach, 1902). The abovementioned offer to establish schools was considered necessary to contribute to the interests of Germans in the Near East and would have been beneficial for financial institutions in this area (Near East). According to Ortaylı (1982), one of the prominent historians in Turkey, Germans did not consider those schools as a tool of religious propaganda; moreover, they rigorously abstained from such usage and considered them as institutions that serve for the expansion of financial and political interests. And today, it also serves for almost the same aim as stated in the DSI's web site:

> "In einem aber blieb sie unverändert, Generationen von Schülern wurden hier ausgebildet, die mit beiden Ländern und beiden Kulturen vertraut sind. Das Entscheidende liegt in der Begegnung. Aus ihr entstehen Austausch, Verständnis und Verbundenheit - Sinninhalt und zugleich Grundlage zur Entwicklung des historisch gewachsenen Verhältnisses zwischen der Türkischen Republik und der Bundesrepublik Deutschland. Zurecht kann deshalb die Deutsche Schule İstanbul von ihren Anfängen bis in die Gegenwart hinein als wesentliches Forum deutsch-türkischer Beziehungen gelten."[19]

Active German Schools in İstanbul after 1914 were:

1- Beyoğlu German School
2- Boğaziçi Bebek German School
3- Yedikule German School
4- Haydarpaşa German School

[18] All German schools in the Ottoman Empire: Mutlu (2005). P. 96-136.
[19] See http://www.ds-İstanbul.de/main.htm for more information about the DSI.

The number of schools officially supported by the German government was two since the beginning of 1930. The number of students was 1.127 in 1931 and 1.007 in 1932-33 (Jacobsen, 1968). A second German School was also established in Ankara, May 1934 for the education of the German staff in the German Embassy.

As time passes, the demand for quality education at these schools increase. Moreover, most of them have developed a unique, distinguishing feature. That is why it has become possible to surmise what the majority of the graduates of different schools do; what kind of careers they are likely to choose. For example, most of the graduates of the DSI become engineers; whereas graduates of the Saint Benoit become economists and so on. In short, each foreign school contributes to Turkey in a different manner and field.

Since Turkey has a unified education system,[20] it is evident that the reason for this variety is the characteristic feature of each school. The characteristic aspects of schools may be effective mainly through their hidden curriculum. Henceforth, in this study, the distinguishing characteristic features of the DSI are analyzed and taken as indicators for its hidden curriculum. Below, the history of this school is given as an attempt to introduce it. In the following chapters different aspects of this school will be presented.

II. 3 History of Deutsche-Schule-İstanbul (DSI)

Figure 2.3: The DSI in the past (Semerau & Thornstedt, 1968).

[20] Mustafa Kemal Atatürk adjoined all types of schools to the Ministry of Education on 3 March 1924 by the Law of Tevhid-i Tedrisat.

Deutsche-Schule-İstanbul (Figure 2.3) was established by *"Deutsche und Schweizer Schulgemeinde"* in May 11th, 1868[22]. The establishing reason of *School of Deutsche und Schweizer* was to prevent German people from being alienated, ignorant and receiving a wrong education. Therefore, *"provisorischen Comite der deutschen Schulgemeinde"* wrote a letter[23] demanding financial aid from their state so that its citizens would not become alienated. The interesting point is that the alienation of their children was not because of the Ottoman school system but of the French influence in the Ottoman Empire. They were wary of the French missionary movements because French missionaries predominated throughout the educational system of the Ottoman Empire. Therefore, the initial purpose of *School of Deutsche und Schweizer* was to educate children of the Germans working in the Ottoman Empire. The school started with twenty-three pupils and two teachers.

Why would Germans like to establish a school in İstanbul? German people, who lived in İstanbul, were generally working in the commercial sector. Therefore, by establishing such a school, the Ottoman Empire would perceive Germany's assets in terms of science and education because, up until that time, the Germans had only focused on trade.

Although the Ottoman Empire became weaker, after *Tanzimat* reforms Ottoman administration was interested in Europe and also experts (*'Fachleuten')* from Europe. And this shows how the Ottoman Empire needed Europe. Especially, Germany and Prussia had political, economical and military influence on Ottoman Empire. The immensely increasing number of Germans in İstanbul during middle of 19th century supported the situation at that time. And this is also the reason and the necessity for the establishment of the DSI.

In 1873, the school already had 147 children, who were instructed by four teachers. However, after school director Mühlmann's[24] efforts, preparatory classes were opened and pupils who did not speak German also attended this school in 1879. The changes in the German school system in 19th century were also reflected by the DSI. Previously, schools in the German education system had *"Humboldtschen Bildungsideal"* which considered the

[21] Swiss Johann Caspar Hirzel was the head of the Deutsche and Swiss alumni because he was the prime mover who would like to establish such a school for deutsche and swiss pupils in İstanbul. Swiss citizens also financed this school when it was established. Moreover, after WWI and WWII they also aided to this school financially. However, the number of Swiss pupils became lesser and in 1917, the name of the school became Deutsche-Schule-İstanbul.

[22] History of the DSI has been summarized from the yearbook of the DSI, "Festschrift zum 125 jährigen Bestehen der DSI" (1993).

[23] In this letter, it was orinally written: "An unsere Landsleute in der Heimat! Seit Jahr und Tag hat sich das dringende Bedürfnis herausgestellt, eine gute deutsche Schule in Constantinopel zu gründen." And added "das deutsche Element in Stambul vor Entfremdung, Unbildung und Verbildung in schlimmster Form und Weise zu bewahren." Es sollte eine, "deutsche Bürgerschule alle deutschen und schweizer Kinder ohne Rücksicht auf Stand und Glaubensbekenntnis" sein (p.68).

[24] He was the director of the DSI between 1884-1879.

Greek and Latin languages to be of value. However, in the new system, called *"Realien"* based mostly on natural sciences, mainly French and then English became more important.
In 1873, an important document, explained school characteristics, was prepared by Mühlmann. In this document, he wrote the future goals of the DSI: "This school will grow up rather than staying as a primary one." Felix Theodor Mühlmann conducted research on his pupils and reached a conclusion: "Pupils were taught Greek and Latin by their governesses in their houses. Therefore, Mühlmann noticed the importance of particularly French, and then English for that time. When he asked the parents, just 2 % of them preferred the classical education so he changed the system in the DSI. Mühlmann said:

> "Die wirklich vorhandenen Bedürfnisse der Schulgemeinde hinsichtlich der Ausbildung ihrer Söhne lagen auf einem anderen Gebiet als dem der klassischen Bildung: Handel und Wandel in Konstantinopel stellen an jeden, der es zu etwas bringen will, die Anforderungen, dass er moderne Sprachen, besonders die französische, womöglich aber auch die englische sprechen und schreiben kann." *(p.73)*

School reforms in Germany were aimed at improving the *Realschule*. Mühlmann agreed with this idea. As a result of this effort, Mühlmann supported the law, passed by the Prussian Education Minister, Grosslar, in 31st March 1882. This law was about "taking out Latin from the curriculum and then replacing it with modern and required languages therefore, improving the level of "*Realschule*".

In 1884 there were 317 pupils in four elementary and three secondary classes. The demand for this school increased so much that the number of teachers and classes became insufficient. The age of for high school pupils was 15-16 years Mühlmann characterized the aims and profile of the school in his report so: "The secondary school of the German and Swiss Community School of Constantinople (İstanbul) wants their pupils to acquire that amount of higher education, practical knowledge and autonomous thinking ability, of which it needs to suitably prepare one to enter social and commercial life."

Some of the mandatory courses were: German Language and Literature, French, English, Mathematics, Geography, History. On the other hand, Latin and Evangelic religious course were elective.

On the other hand, there were two problems at that time. The first problem was the increasing number of students and insufficient numbers of teachers and classrooms. As a result of the changes in the school's characteristics or reform, attention of the German parents

living within the Ottoman Empire was drawn to the school. Therefore attendance increased greatly.

Although there were 14 teachers in the school in 1884, it was not enough. And the second one was the hostile attacks towards the school performed by unknown people. Mühlmann said, "Actually, our school is open to everyone. We have Turkish, Romanian, English, French and Russian pupils in addition to German, Swedish and Australian pupils. But, of course, 68 % of them are from German speaking parents." The school administration did not get involved in any debate on Jewish animosity therefore, it's good reputation increased.

Dr. Hans Schwotlo was the director of the school from 1893 until 1907. He did not declare the number of foreign pupils because multicultural education was not popular at that time. The Kaiser visited the school and gave a medal to Schwotlo. He was greatly impressed with the school. The importance of German schools abroad and especially the DSI was underlined. Starting with 24 children, the number reached 600 during the era of Schwotlo in 1893.

It was stated in a book titled as, *"Die deutsche Schule im Ausland"* (1905) concerning German schools abroad, "„The German school abroad wants the majority of its pupils, the German children whose physical German homeland is lacking, to be given, at least a mental German homeland, and to the non-German children it (the school) especially wants to spread the German language, not in order to subject the non-Germans to a means of competition, but for foreign countries to be instilled with the respect of the German character, which gives rise to the appreciation of our commercial products.". And, in the same general meaning, the Hamburg Chamber of Commerce declared in 1904: "The preservation and advancement of German culture abroad not only lies in the national interest, but is, at the same time, of great economic importance. The advantage that the German schools abroad bring in national and cultural relations, therefore benefit German commercial interests."

This statement from Germany is important in terms of understanding that the increasing number of those learning the German language is not only important politically but also economically. Schwotlo says, "…serve the German schools abroad generally those of the German people's assigned tasks. They (the schools) impart German culture to other nations for the purpose of its internalization and thereby help, at the same time, to secure the position in the world of the German people..." (p.83)

The first section of the school building was established with the financial aid of the architect Kapp von Gülstein and Ottoman Bank manager, Wilfing. The second part of the

school building was established as five-floors. In 1910, the school had all rights according to Prussian curriculum. Namely, the pupils graduated from the DSI achieved the right (Abitur) to attend university in Prussia[25].

After the defeat of the World War I and subsequently, the invasion of İstanbul, this school was closed temporarily. In 1924 the school was opened again. The parliament gave financial support to the DSI between 1874-1876. And the DSI was the first and only German school abroad that received the most monetary funding.

Then the school temporarily moved to a rented building in Polish Street in 1924. In 1925 the school returned to its official building (Özel Okullar Rehberi, 1964 p. 138). After WW II, nearly 1,000 pupils attended the DSI.

Figure 2.4: The picture of the DSI's students in 1907(Semerau & Thornstedt, 1968).

The school was administered by *Der Verein zum Betrieb der Deutschen Schule İstanbul (İstanbul Özel Alman Lisesi İdare Derneği)* about the areas apart from education. The German Ambassador in İstanbul and German government's representatives were among the members of *Der Verein zum Betrieb der Deutschen Schule İstanbul*. And, a German director has always directed the school. The list of the directors of the school is stated in Appendix B.

With the foundation of the Republic of Turkey in 1923, this school was incorporated into the new Turkish educational system and it has been known for its trilingual (German,

[25] These information were obtained from the directors' reports *'bericht'*

English, Turkish) education in Turkey. German, which is the language of instruction in most of the courses, is taught at a level similar to that of a high school in Germany (DSI's Document, 1998).

"How did the DSI develop under the Hitler regime?" examines an important time period of the years leading up to and including World War II. The youth played an important role in Nazi ideology and therefore, the youth of the DSI were subsequently trained for this purpose. Therefore, during the Nazi regime, the ministry of education selected the teachers who favored this ideology. Moreover, the DSI was accepted as an equal to those schools in Germany (*ober-real-schule*) by a national socialist=Nazi minister. The school organized trips to Germany and students were showed around city-by-city, national socialist ideas were discussed and it was suggested to accept them. German ministers often came to İstanbul to to observe these ideas. Moreover, the DSI was always controlled by a selected representative from the German ministry, so it could be said that the Nazi regime had a direct influence on the school. On the other hand, that influence was diminished, as there were pupils of various nationalities and religions at the school. Therefore, it was difficult to control the implementation of Nazi ideology.

How did Turkish government react to these activities? The Turkish government did not intervene until 1931. After that, the government declared a law, stated courses of history, geography and citizenship (*vatandaşlık*) which were required to be instructed in Turkish in all foreign schools in Turkey. There was a long debate on this issue and the DSI abstained from this law. But, in the end, in 1937, the DSI was also required to accept this law. A Turkish director was appointed to the DSI for Turkish pupils, as well. The Turkish ministry also rejected the idea of instructing Turkish and German pupils in separate classes. This attempt broke the national socialistic atmosphere=Nazi in the school.

The school was closed in the same year and wasn't reopened until 1953. Turkish pupils were not accepted to this school until 1968. They could only attend as visitor pupils. The demand for the DSI in 1968-69 increased. Although the DSI could only accept 90 pupils, 1343 applied. This number increased to 3415 pupils in 1977-78. And in 1979, the regulation in Turkey changed with the formation of a national entrance examination.

Only those students are admitted to the DSI who pass a highly competitive national entrance examination that is administered for 20,000 fifth grade students in accordance with the regulations established by the Turkish Ministry of Education[26]. The ministry of Education

[26] This national entrance examination has been performed since 1979. Before this year, the pupils attended the DSI after passing a special exam performed by the DSI itself. The exam was a written exam comprising of

issues a ranking for these 20,000 students and generally, 90 from about the top 200 students in the ranking enroll to the school each year in this way. According to the obtained data from the DSI, today, the population of German students is 80 and Turkish is 655.

Today, the school employs over sixty highly qualified full-time teachers. Thirty-nine are German teachers (some of whom hold a "doctor title") and are financed by the German government (Appendix B). The rest of the staff consists of Turkish teachers who are assigned by the Turkish Ministry of Education.

Abitur is the German university entrance exam offered to all students of the DSI. Of all students, eighty percent take *Abitur*, even though it is not obligatory and about 30 percent of them continue their studies at German universities.

The DSI offered an eight-year program starting from the elementary level, which includes one preparatory class. After one year of extensive study of the German language (24 hours a week), the qualified students can continue their education in the sixth grade. (Since 1997[27], the educational system in Turkey has changed. And according to this system, the course and class structure are in Figure 2.5.)

To prepare the students for the '*Abitur*', all the courses of this highly demanding program are above advanced placement level. Therefore, there are no additional advanced placement courses.

The courses taught are the same as the ones offered at other schools in Turkey; however, there are differences in course contents because of the preparation for the *Abitur* exam, and also the fact that the schoolbooks come from Germany. Although this makes the courses and education at this school much more difficult than other schools, it also paves the way for a good education. For example; despite the fact that physics and mathematics are courses taught at all schools they are much more intense, comprehensive, and difficult at the DSI. In this regard, some examples from the physics and mathematics courses offered at the DSI are provided in the appendix A. One might notice that these examples given from the content of courses taught at the DSI are similar to a first year university level. This is a

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mathematics and Turkish. The Turkish pupils were required to write a composition in Turkish and solve problems in Mathematics. On the other side, German pupils were accepted to the school without an exam.

[27] Beginning in the 1997-98 school years, 8-year compulsory basic education was implemented throughout the country with a view to ensuring organic unity and continuity in the educational program. The implementation of 8-year compulsory basic education is part of the Program for educational Modernization for the 21st Century. With the passing of the 8-year mandatory education law, the DSI, like all foreign schools, gradually phased out the middle school, added a prep section for the lycee and now maintains only a high school program. To fill in the void left by the closing of the secondary (*Orta)* schools, ALKEV (Alman Liseliler Eğitim Vakfı) has opened an elementary school that goes through the eighth grade, offering quality German instruction to supplement the Turkish curriculum.

remarkably significant feature of the DSI. In the same sense, the school has a reputation that gives cause for parents to pre-select this school. And this will be scrutinized under the title of 'hidden curriculum' in the following sections.

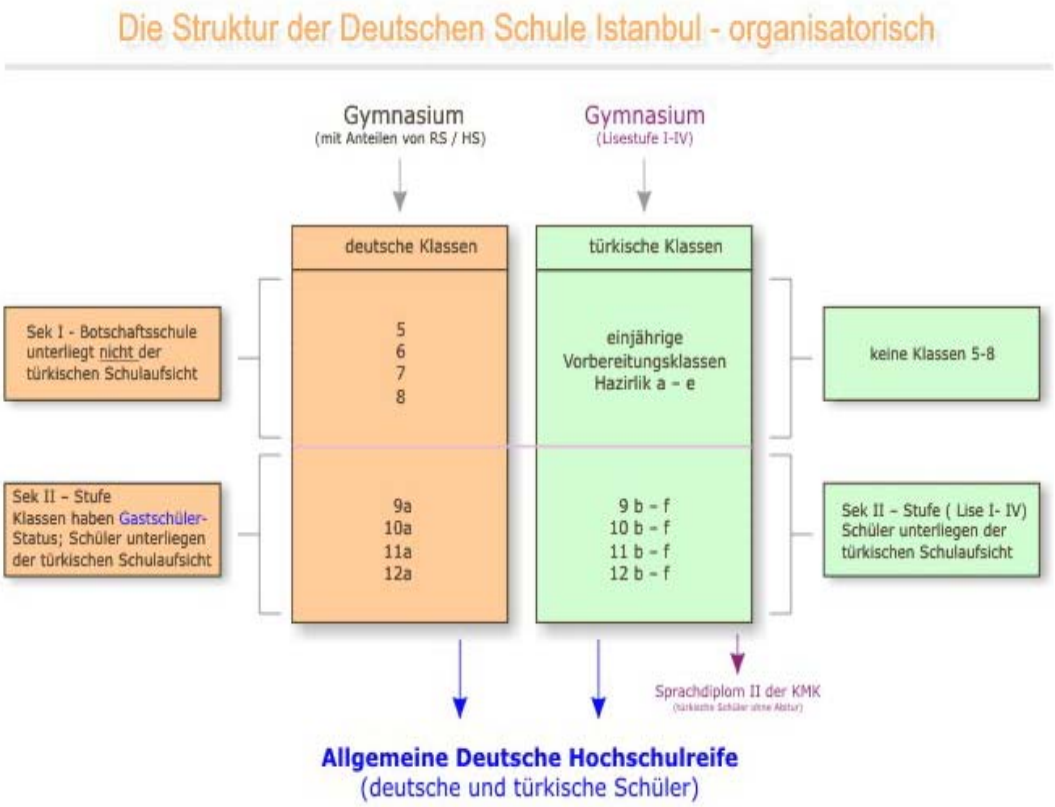


Figure 2.5: DSI's present school structure (www.ds-İstanbul.de/ - 8k).

German is the language of instruction in sciences, mathematics, German language and literature, computer science, arts, music and physical education; and Turkish is the language of the instruction in geography, history, religious studies, psychology, philosophy and logic.

According to the document received from the DSI (1996), Turkish High School graduates have to take a competitive entrance examination by the Turkish Ministry of Education in order to qualify for and to be allocated to Turkish universities. The previous year, 1995, 1,500,000 individuals competed for 400,000 places (including distance learning) at Turkish universities. Of the DSI's 1996 graduates, 96 percent qualified for the top six universities of their first choice. Pre-1996 graduates' career choice is given in a table (Table 2.2). This table represents DSI's graduates' career choice between 1950s-89s. The data **is** obtained from '*who is who?*' published by the DSI graduates' Alumni (1998). The graduates whose data are given in this book are mostly between 1950s-1989s, with few exceptions.

II.4 Looking at the career choice of formal graduates of the DSI

When looking at the career choice of formal graduates of the DSI, it is seen that there is a trend over time for Engineering to be the preferred career choice[28]. In that context, Table 2.2 below gives the percentages of graduates' career choices for a five-year time interval. According to this data, engineering, economy, medicine, social, art, literature, social others, science others and not university (*not uni*) are selected as the main career choice topics. Similar occupations are united under one topic. Accordingly, 'engineering' topic represents engineering, architecture and informatics. 'Economist' topic represents marketing and management. 'Medicine' topic represents medicine doctors, pharmacy and dentist. 'Social' topic represents law, international relations, and political science. 'Art' topic represents art. 'Literature' topic represents German language and literature, English language and literature. When similar occupations are not found, they are written under the topics of social others and science others. 'Social others' (*socot*) topic represents the careers like tourism, translation, education. 'Science others' (*sciot*) topic represents the careers like physics, chemistry. If one does not attend or complete university, they are written under 'not uni' topic. 'Not uni' topic represents the graduates who did not attend university.

As given in Table 2.2, engineering is the most selected career at each five-year interval. Also in these intervals, natural science oriented occupations (engineering, economist and medicine) cover the main part of career choice. When considering all graduates, the same characteristics are seen. Engineering, 47 percent, ranks first among the characteristics and 81 percent of the graduates chose natural science oriented occupations (engineering, economist and medicine).

Also in these intervals, natural science oriented occupations (engineering, economist and medicine) cover the main part of career choice. On the other hand, as given in Table 2.2, there is a difference between male and female graduates in choosing their career. While 'engineering' is the most selected career at each five-year interval among male graduates, it is difficult to say the same for female graduates because they prefer 'business' as much as 'engineering' and sometimes, even more than 'engineering'. In other words, 65,7 percent of the male graduates prefer engineering; whereas 19,8 percent prefer business.

[28] The time periods of interviewees in the DSI: Four 1954-62, one 1955-69, one 1956-64, three 1959-66, one 1960-72, two 1965-74, one 1969-77, two 1973-82, one 1977-86, one 1982-90. Four of them are women because there is no difference with the others.

However, the percentage of business selection of female graduates (28,7 percentage) is more than males and engineering comes next with 26,2 percentage among female graduates' choices. However, among female graduates' choice, business is preferred (28,7%) over engineering (26,2%). In sum, it could be said that twice as many male graduates choose 'engineering' as a career than females. On the other hand, more female graduates choose 'business' than males. These findings also raise further questions, for example, as to the gender breakdown, that will be shown by the statistics explored in greater detail in further studies.

Table 2.2: Percentages of DSI's graduates' careers between 1950-89. (These data were obtained from the book "Who is who?" published by the DSI's graduates alumni (*İstanbul Alman Liseliler Derneği*). Title of 'Total' gives the number of both female and male graduates and title of 'Total %' gives the percentages of their career choice.

	Engineer		**Business**		**Medicine**		**Social**		**Art**		**Literature**		**Socot**		**Sciot**		**Not uni**
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	F
1950-54	8	3	4		2		1			3	1	3	2	1			1
1955-60	129	6	5	8	5	4			1					4	1	1	
1960-64	32	5	15	5	5	4		1	1	2	1	6		2	1	1	2
1965-69	51	8	11	11	8	6	1	4		2		6		2			
1970-74	32	7	15	7	12	7	1	1				1	2	2			1
1975-79	22	10	20	14	6	4		2		1		1	2				2
1980-84	29	7	16	9	1	4	1		1	1		1	4		1		
1985-89	19	6	11	3	2	1	4	1				1	2	3	2		
TOTAL	322	52	97	57	41	30	8	9	3	9	2	19	12	14	5	2	6
TOTAL %	65,7	26,2	19,8	28,7	8,3	15,1	1,1	4,5	0,6	9,5	0,4	7,0	2,4	2,0	1,0	1,0	3,0

NOTE: 490 male and 198 female graduates of the DSI

The significance of this observation is further emphasized by comparison with career choice patterns of French school graduates. As one takes account of other foreign schools, the data given above becomes more important since the DSI's graduates choose 'engineering' as a career choice more often than the graduates of other foreign schools. De Saint Benoit's graduates' career choice is given as an example for comparison with that of the DSI's in Table 2.3. Unlike the Table 2.2, Table 2.3 gives the percentages of all graduates' careers from 1950s until 1990s. When comparing male DSI's graduates with de Saint Benoit's, it is noticed that more than half of the DSI's graduates (68,3) have chosen 'engineering' as a career, as compared with 25,1 percent of the French school's graduates' choice of engineering as a career. (while 25,1 percent of the French school's graduates have chosen 'engineering' as a career.) It means, twice as many of DSI's graduates have chosen 'engineering' as a career

than the French school's graduates. As a matter of fact, the French school's male graduates have mostly chosen 'business' as a career (48,6 percent). Also, when female DSI's graduates are compared with Saint Benoit's, there is a great difference between both graduates. While DSI's female graduates mostly prefer 'business' (34,9 %) and 'engineering' (31,9 %) as careers with almost the same percentage, De Saint Benoit's female graduates mostly prefer 'housewife' (43,9 %), then comes 'business' with 26,2 %. This result leads to examine the influence of school characteristics on graduates' career choice.

Table 2.3: Percentages of the DSI's and a French school graduates' career choice between 1950s-1990s. (These data were obtained from the book 'Who is who?" published by the DSI's graduates alumni (*İstanbul Alman Liseliler Derneği)* 1950s-1990s and Association De Saint Benoit (French school) (Saint-Benoit'lılar Derneği) 1950s-1990s. The questions were asked immediately after their graduation from their high school. Title of 'Total' gives the number of both female and male graduates and title of 'Percentage' gives the percentages of their career choice.

	Engineer		**Business**		**Medicine**		**Social**		**Teacher**		**Housewife**	**TOTAL**
	M	F	M	F	M	F	M	F	M	F	F	
DSI	322	52	97	57	41	30	8	9	3	9	6	634
De Saint Benoit	104	22	201	82	39	10	47	18	22	43	137	725
												Percentage
DSI	68,3	31,9	20,5	34,9	8,7	18,4	1,7	5,5	0,6	5,5	3,6	100
De Saint Benoit	25,1	7,0	48,6	26,2	9.4	3,2	11,3	5,7	5,3	13,7	43,9	100

Note: 413 male and 312 female pupils from the De Saint Benoit

In that context, when the reasons for establishing the DSI, indicated above by Ortayli as "Germans did not consider those schools as a tool of religious propaganda; moreover, they did severely abstained from it and considered them as institutions that serve for the expansion of financial and political population", it is seen that there is a consistency between the aims and results of the DSI. Even so, particularly female graduates choose 'business' and 'engineering' more than De Saint Benoit's female graduates. That means, graduates choose mostly labor-oriented professions and more attend the universities. Even the former –labor-oriented professions- are related to the Protestant (particularly Calvinist) ethic, the latter -attending university- can be also considered as one of the requirements for performing good works. This tendency relates to Weber (1958) who wrote that capitalism evolved when the Protestant (particularly Calvinist) ethic influenced large numbers of people to engage in work in the secular world, developing their own enterprises and engaging in trade and the accumulation of wealth for investment. In other words, the Protestant work was a force behind an unplanned and uncoordinated mass that led to the development of capitalism. This idea is also known as "the Weber thesis".

On the other hand, male graduates' of De Saint Benoit choose 'engineering' as a third choice, and the percentage of female graduates who choose 'engineering' is slightly lower than becoming a 'housewife'. Within the context of this result, it can be concluded that studying 'engineering' is not as popular when comparing with DSI male graduates. And also, it can be said that, many female graduates of De Saint Benoit do not prefer to attend university, and would rather become housewife even if some of them choose 'business' as a career. However, 'engineering' is not as popular as other careers.

As mentioned above, the DSI has a reputation to enable its graduates to be an engineer later. Therefore, there is a pre-selection for this school by their parents. In that context, parents do seem aware of the advantages of sending their children to this school. However, the important question that should be asked by the school is: what kind of social influence(s) might the DSI have on pupils. In other words, the unwritten, implicit activities and special treatments that may support graduates' expectation, named in this study as 'hidden curriculum' will be scrutinized in the following sections. In this regard, as a serious endeavor to comprehend the background of the foreign schools, the history of foreign schools and particularly that of the DSI were given and touched upon in this section. In the following chapter, the theoretical framework of this study, activity theory, will be examined.

CHAPTER III. THEORETICAL FRAMEWORK: ACTIVITY THEORY

Activity theory is a conceptual framework that emphasizes the importance of social and cultural factors in human development processes. This theory is becoming well known in a wide range of fields of inquiry, especially education, psychology and human-computer-interaction. The fundamental question of this theory is "What is the individual or group doing in a particular setting?" In this chapter, the history, meaning and principles of activity theory will be defined respectively. Then, how the model of activity theory is applied and what are the advantages and limitations of the model for this study will be explained. Also 'hidden curriculum', as one of the significant mediating artifacts within the activity theoretical framework, will be explained. The results and interpretation of the study within in light of activity theory will be described in the following chapters.

Activity theory has evolved through three generations of research. The first generation was initiated by a group of Russian psychologists in the 1920s and 1930s, with Vygotsky as the founder of the school, with the purpose of reformulating existing psychological theory to understand the relationship between human and environment (Cole, 1985). Vygotsky argued that the relationship between human individuals and their environment is a complex, mediated action. Human activity can be explained as a mediation process triggered by artifacts ("technical tools" and "signs") available in social environment (Wertsch, Tulviste, & Hangstrom 1993 as cited in Yamagata-Lynch, 2003) that contribute to the individual's meaning making of the world.

In the second generation, Vygotsky's idea was further developed by Alexie Leont'ev, who introduced the concepts of "collective activity" and "division of labor" based on Marx's theory. According to the Leont'ev's theory, an activity is a unit of analysis for understanding a larger flow of human life. In the analysis of a milieu of human life, separate, specific activities can be isolated according to the criteria of objects and the motives that elicit them. The most prominent assumption of earlier models of activity theory is that activities are analyzed in various levels. Leont'ev (1978) identified three distinct but interrelated levels, called activity, actions, and operations. The activity's orientation toward the object provides a motive to its objects that have a set of assumptions about appropriate outcomes. Individual and cooperative actions such as a specific set of behaviors are oriented toward those goals and directed toward more explicit and immediate goals. Actions, in turn, consist of a sequence of automatic operations that are well-defined, habitual routines employed to realize actions and determined by an activity's prevailing conditions of the situation (Kaptelinin, 1996). Alexei

Leont'ev formulated the concept of activity as a systemic formation and unit of analysis for human sciences (Figure 3.1). Activity is a collective system driven by an object and motive. It is realized through individual actions driven by goals. Actions in turn are realized by means of routinized operations, dependent on the conditions of the action. To understand and facilitate development, we need to study and change entire collective activity systems, their objects and motives, not just isolated actions and skills.

Activity - Leont'ev defines 'activity' as those processes that realize a person's actual life in the objective world by which he is surrounded, his social being in all the richness and variety of its forms. Activity is always characterized by its object-orientation and it fulfills a specific purpose. The driving force for the activity is its motive: the motive is what drives the activity. As Leont'ev put it: "there can be no activity without a motive".

Action - Action is the basic component of activity. Action is a means of realizing the activity and consequently satisfying the motive. The distinctive feature of an action is the fact that it is always goal oriented; it aims at satisfying a particular goal. Activities can be realized by multiple actions, which serve as the means or instrument for accomplishing activities. The same action can also be used in different activities, driven by a conscious goal (e.g., moving from place to place can be an action within the activity of migration or activity system of finding a new job).

Operation - Actions are performed through operations which are dependent on the specific conditions of situation. The distinction between actions and operations emerges clearly in the case of actions involving tools: while actions are connected to conscious goals, operations are related to routinized behaviors performed automatically, without including the same level of consciousness (Leont'ev 1981).

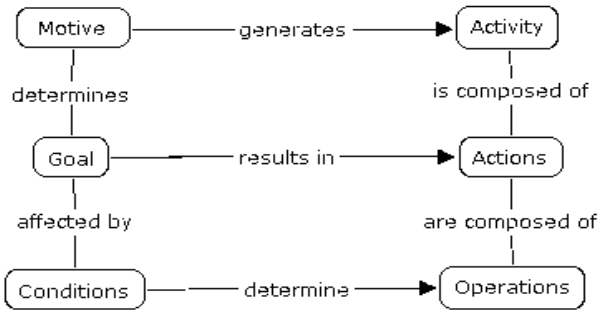


Figure 3.1: The hierarchical structure of activity

Leont'ev with Vygotsky and Alexander Luria developed a model of mediated action known today as activity theory that can be characterized by the following figure (Figure 3.2). Leont'ev sets out three levels of activity, which are distinct but interrelated units of analysis:

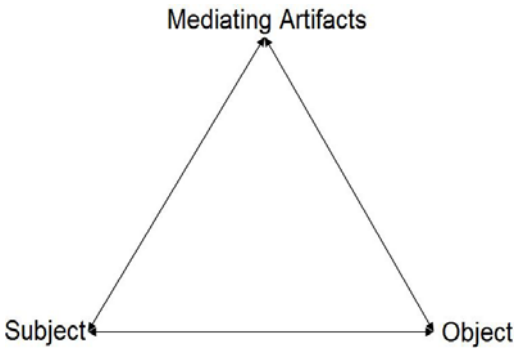


Figure 3.2: Model of Mediated Activity

As the above figure suggests, humans interact with their environment through cultural artifacts, the most common is language. For Vygotsky and his colleagues, one significant limitation of both the psychoanalytic and behaviorist orientations in psychology was their inability to specifically explain how humans interact with their surroundings; their model of mediated action, they believed, explained these relationships.

Vygotsky writes, "social relations or relations of people genetically underlie all higher functions and their relations" (Vygotsyky, 1981). In other words, who we are and how we think develop through our ways of being and communicating and relating with and to the others.

In the last generation, Engeström (1987; 1990) built upon Leont'ev's work in developing the concept of activity as a unit of analysis. This model describes a human activity system as a collective activity system with a focus on complex interrelations between the individual subject and his or her community. The central notion of activity theory is "the activity system." Based on Vygotsky's requirements, Engeström elucidated a definition of activity as a unit of analysis that fulfills the following demands: it is representative of the complexity of the whole, it is analyzable in its contextuality, it is specific to human beings by being culturally mediated, and it is dynamic rather than static. Engeström criticized Leont'ev on the basis that the instrumental and communicative aspects of activity were not brought into a unified complex model; that is, Leont'ev did not extend Vygotsky's basic triangular model

(subject-object-mediator) to account for social relations. Engeström expanded the unit of activity to include three additional components that explicate the social structure of activity: 1) rules that regulate the subject's actions toward an object, and relations with other participants in the activity; 2) the community of people who share an interest in and involvement with the same object; and 3) the division of labor-what is being done by whom towards the object, including both the relatively horizontal division of tasks and the vertical division of power, positions, access to resources, and rewards. This expanded unit is referred to as an activity system by Engeström and his colleagues (Figure 3.3).

The rules, community, and division of labor components add the socio-historical aspects of mediation omitted by Vygotsky (Engeström, 1999). Rules refer to any formal and informal regulations that in varying degree can constrain or liberate the activity and provide guidance to the subject of what are correct procedures and acceptable interactions to take with other community members. The community is the social group with which the subject identifies while exercising the activity. The division of labor refers to how the tasks are shared among the community. All of the above components of activity systems, including the top triangle and the bottom socio-historical components, can mediate change not only for the object but also for each other. In the attainment of the object, activity systems are molded or transformed into outcomes.

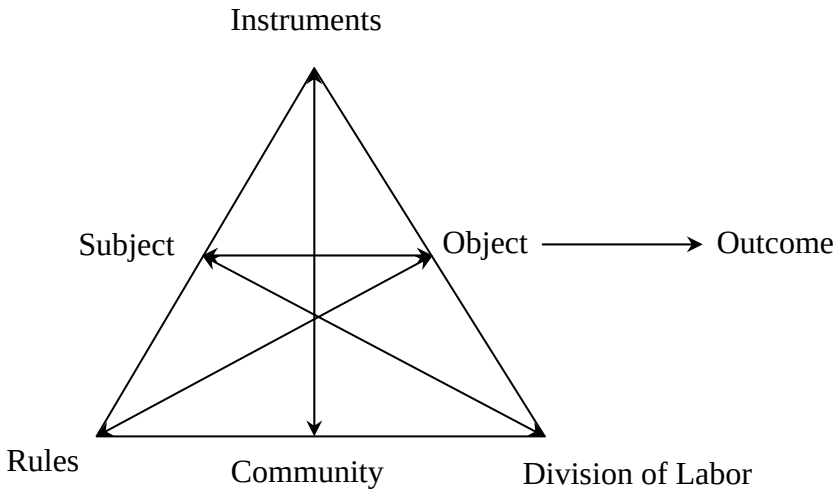


Figure 3.3: Conceptual model of an activity system (Engeström, 1987).

The points of the triangle are defined as the components of activity. Activity theory claims that all human activity has these seven components, and knowing these seven components is necessary in order to have a deep understanding of the activity. This triangle can be examined in two parts comprising of inner and outer. The former is comprised of

subject, instrument and object which will be examined on a psychological level. The latter is comprised of rules, community and division of labor that will be examined on a sociological level.

The *subject* of the activity refers to individuals or groups of participants engaged in an activity's goal oriented actions. It is the primary determinant of the nature of an activity whose point of view is used in the analysis of the activity system. More specifically, a subject is the person or group engaged in the activity, the activity is motivated by objects, action goal directed processes needed to fulfill the object, and operations are actions that become automated to the point where they are no longer conscious action.

The *object* is the mental or physical product, to which the subject's activity is directed. The object represents the purpose of human activity.

The *mediating artifacts* refer to any tools or instruments (in this study, it is preferred to use 'mediating artifacts' used by Vygotsky to 'instrument' used by Engeström) that shape the activity used by the subject to reach the object. Tools can also mean 'psychological' tools or 'artifacts' as procedures, methods, laws, or forms of work that mediate human activity (Kuutti, 1996; Yamagata-Lynch, 2003).

The *rules* refer to norms, regulations, and conventions that constrain the activity and provide the guidance to the subjects of what are acceptable behaviors and procedures to interact with community members. The community is the social group that the subject identifies with while exercising the activity.

The *division of labor* refers to the allocations of responsibilities and variations in job roles of the subject as they carry out the activity. It refers to how the tasks are shared among the community.

The *community* refers to the social group that the subject identifies with while exercising the activity.

The *outcome* is the objective, or ideal transformation of the subject. That means the subject has as a motive in engaging in an activity, such as improving a skill and the situation offers an opportunity to get the improvement (Engeström, 1990).

III.1 Basic principles of Activity System

An activity system is an *object-oriented* system. The study of socio-cultural activity systems is largely based on the notion that human activity is directly related to a sometimes elusive, but always identifiable, object (Engeström, 2000). Activity theory posits that an

activity without an object is devoid of purpose, and systematic inquiry of human activity requires that its object eventually be discovered if the activity is to have any meaning (Leont'ev, 1978). Every activity is directed toward something that objectively exists in the world, which is an object.

An activity system is an *artifact-mediated* system. Activity system is the unit of analysis. Understanding an activity should examine the role of mediating artifacts and the way they are integrated into social practice in everyday existence (Nardi, 1996). This means basically that humans use tools and material artifacts in order to mediate efforts to accomplish tasks. Humans do not act directly on their surroundings; tools and artifacts are necessary.

An activity system is a *multi-voicedness* system. All activity systems are embedded in the context of community with multiple points of view, tradition, and interests. The participants of the activity system carry their own diversified historical identities, and the activity system itself carries different levels and strands of history embedded in its artifacts, rules and division of labor. When people are engaged in multiple communities, the multi-voicedness is multiplied and the conflicts of value and roles within each community or in the different communities often appear and drive people to balance those contradictions through transformation processes (Engeström, 2001).

The fourth principle is *historicity*. Activity evolves and transforms over time. To understand the problems and potentials of the activity, the history of the systems should be studied. There is also continuous movement between the nodes of the activity. What initially appears as object may soon be transformed into an outcome, and then turned into a rule, and possibly later into mediating artifacts (Engeström, 1996).

The fifth principle is *Internalization/Externalization.* This principle points out that any activity has an internal and external side and they are related without any gap to each other. The division of activity in Internalization/Externalization is really artificial. Any external activity is supported by processes that are originated inside the subject and the internal process appears in one way or another in the external world. The most important aspect for activity theory should be not making this artificial division and to find out how they are related to each other. While studying the 'external side' of the activity, it should be possible to discover the 'internal side'. According to Vygotsky internalization is social by its very nature. The range of actions of a person in cooperation with others comprises the so-called 'zone of proximal development.' Mental processes manifest themselves in external actions performed by a person, so they can be verified and corrected, if necessary. Activity theory emphasizes

that it is not just mental representation that gets placed in someone's head; activity is holistic by including motor activity and the use of artifact.

Activity systems feature contradictions as sources of *change* and *development*. Contradictions are structural tensions among the components of the activity system or tensions between different activity systems. When a new element is introduced into the activity system, it may conflict with the old ones and cause disturbances and disruptions. Those disruptions or contradictions could then become the driving forces for innovative attempts to transform the activity (Engeström, 2001).

An Expansive Cycle

An expansive cycle is a developmental process that contains both internalization and externalization. An activity system is by definition a multivoiced formation. An expansive cycle is a re-orchestration of those voices, of the different viewpoints and approaches of the various participants. Historicity in this perspective means identifying the past cycles of the activity system. The re-orchestration of the multiple voices is dramatically facilitated when the different voices are seen against their historical background as layers in a pool of complementary competencies within the activity system (Engeström, 1999).

Activity Theory differentiates between internal and external activities. It emphasizes that internal activities cannot be understood if they are analyzed separately from external activities, because they transform into each other. Internalization is the transformation of external activities into internal ones. Internalization provides a means for people to try potential interactions with reality without performing actual manipulation with real objects (mental simulations, imaginings, considering alternative plans, etc.). Externalization transforms internal activities into external ones.

According to Vygotsky, human activity presupposes not only the process of internalization but also the process of externalization. Humans not only internalize ready-made standards and rules of activity but externalize themselves as well, creating new standards and rules (Lektorsky, 1999). Historical perspective is essential in the analysis of an activity system's expansive cycle.

Figure 3.4 shows that a transformation process comprised of internalization and externalization parts. The outer part shows the internalization that means transforming external activities into internal ones. And the inner part shows the externalization that means transforming internal activities into external part.

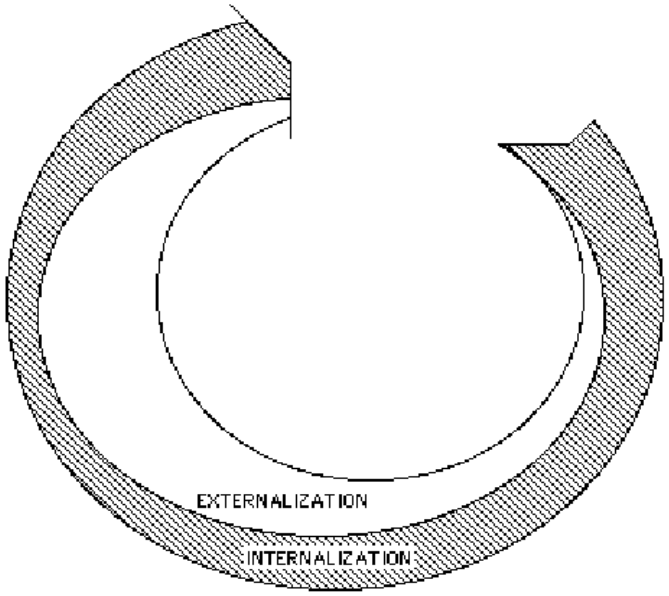


Figure 3.4: The Expansive Cycle

III.2 Activity System model in this research

In recent years the application of activity theory has attracted attention from several other disciplines out of psychology, including cognitive science (Cole & Engeström, 1993), computer science (Nardi, 1996), and education (Moll, 1990). This study is a new attempt to utilize it as a framework in educational studies. The results that are found by using the above model will be presented in Chapter V.7 and an interpretation within the framework of activity theory will be given in VI.6.

Social analysis in terms of activity theory focus on what people (subjects) actually do, the objects that motivate their activity, the tools they use, the community of which they are part, the rules that pattern their actions, and the division of labor they take in activity. Tools, community, rules, and division of labor are the social and material resources (structures) that both enable and constrain human agency (Sewell, 1992). From this perspective, in employing this model to understand the graduates' career choice, in this study becoming engineer, is viewed as mediated by artifacts such as hidden curriculum, (teachers' styles, social activities and pedagogical authority). The activity is one that takes place within a school. The rules include principles of 'school rules'. The division of labor includes power relations between students and teachers that constrain their interaction. This system is shown in Figure 3.5.

In this study, the graduates' career choice process is seen as an activity system. Those graduates are from the DSI. In the following subsection, the components of this activity system will be presented.

III.2.1 Components of the activity system

Components of the activity system (Figure 3.5) in this study are described in the following paragraphs:

-Graduates are the subjects of this activity system. They are the primary determinant of the nature of an activity whose point of view is used in the analysis of this activity system.
-Decision-making is viewed as an object of this activity system. Career choice during school socialization is a mental product. This represents the purpose and intention of graduates' targets at the end of the school.
-Hidden curriculum is a tool that in some way or another has an impact on the subjects' career choice. That can be referred to mediating artifacts that shape the activity.
-School rules comprise part of the rules involved in the activity system. School rules refer to norms and regulations that constrain the activity of graduates and provide guidance for the graduates.
-Power relations exist within the system, which affect the division of labor. The power distribution between students and teachers determine the responsibilities of the graduates.
-School is the community; it is the social and cultural environment of students and influences the career choice of students.
-Engineering is the outcome. As a result of the transformation of activity system, graduates make specific choices choosing engineering as a discipline for their studies at university.

Human activity is mediated by a number of tools, both external and internal. In this study, 'teaching style', 'social activities' and 'pedagogical authority' as mediating artifacts are crucial factors in graduates' career choice. The graduates were sent to the DSI by their parents to receive an eligible education. After their education in the DSI, they mostly tend to choose studying engineering[29]. Education in the DSI includes many components in the school. For

[29] When do engineering students choose studying engineering? Various researchers claim that engineering students, more than students in other fields of study at university, are likely to have selected engineering as a career early in high school (Eide, Jenison, Mashaw, and Northup 1986; Perrucci and Gerstl 1969; Reyes-Guerra and Fischer 1981). As a matter of fact that fewer students move into engineering majors than into other fields of study during university education because the pre-requisites for engineering coursework increase the "cost" to

example, some of these are teaching style, social activities, rules as well as power relations between students and teachers. In this study, some of the key factors were selected among components, which are considered the most significant ones regarding the results in Chapter V.7, and examined in detail, Chapter VI.6.

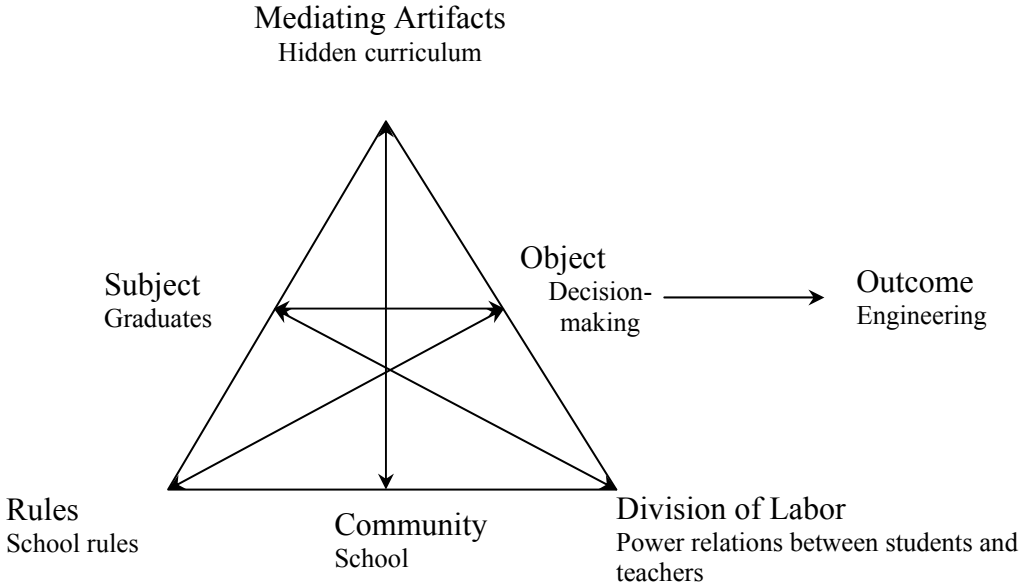


Figure 3.5: Structure of career choice activity system

Activity theory is concerned with the whole system of activity, which includes the mediating artifacts, the goals and objectives of the individuals engaged in that activity, how their objectives transform over time, and how labor is divided and rules are followed (Engeström 1987, 2001; Nardi, 1996). The goal in any activity system is to transform the object into an outcome, and working toward an object to achieve an outcome is derived from the motivation and activity generated during that effort. In the context of this framework, in this study, all key components (teaching style, rules, power relations) in the activity system of career choice are the determining factors for the students' career choice.

Even though it might have been better that interviews be conducted each year during high school to get more accurate data, it was not possible to apply such a procedure in the study since the study should be done in intervals. The study's validity is based on multiple time intervals. In that context, the Activity Theory is utilized as a lens to look at the graduates' process of decision making within the time frame of starting and completing their education at the DSI. During this time, a development took place and as there was no

switch into engineering for students who lack these courses (Bugliarello 1991: Perrucci and Gerstl 1969). Frehill (1997) stated that the variables that measured high school preparation relevant to engineering were significant determinants of major choice.

opportunity to interview the students in those time periods, the study of the development was retrospective. Therefore, interview questions and data among answers were selected considering this time period to observe the transformation process. The transformation occurs after receiving and combining those factors (teaching style, rules, power relations). In other words, after having internalized those factors, graduates' characteristics were formed following the transformation process that guided most of the graduates to choose to engineering at university. The relation between characteristics of the DSI and graduates will be examined in Chapter V.6 in detail.

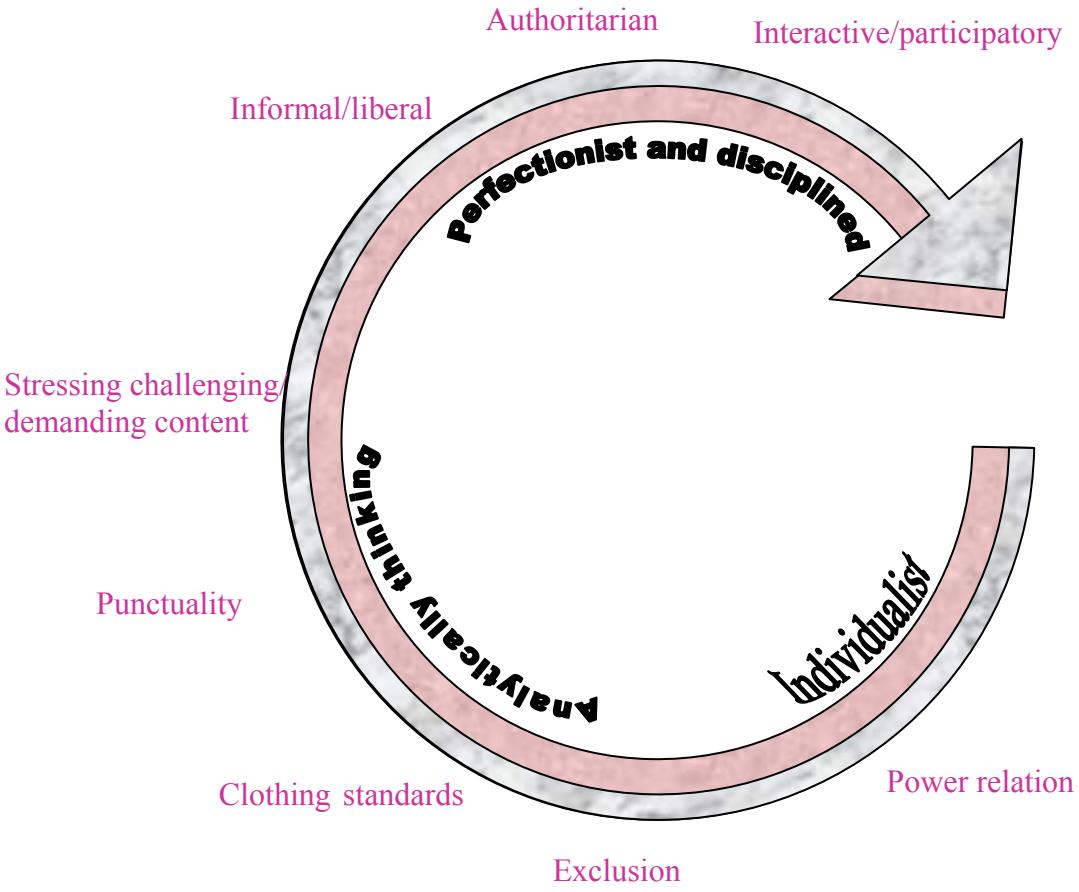


Figure 3.6: The expansive cycle of activity of decision-making.

The transformation is shown as a cycle of internalization/externalization elements and is named "expansive cycle". "Expansive cycle" of this specific activity system is shown in Figure 3.6. According to this figure, elements of internalization are comprised of characteristics of the DSI and elements of externalization are comprised of characteristics of DSI's graduates. Transformation occurs between object (decision-making) and outcome (engineering). More specifically, the DSI has some characteristics that orient its graduates to a

specific career choice, engineering. These characteristics play a significant role in shaping the DSI's graduates' characteristics and also decision-making. Moreover, 'engineering' as a career has some specific qualifications which are similar with the DSI's (Table 6.1). After having gained (internalization) DSI's characteristics, graduates show (externalization) their characteristics that also influence their decision-making choosing 'engineering' as a career where the transformation has occurred. The interconnectivity of engineering education and the DSI will be examined in Chapter VI.6.

III.3 Advantages and limitations of seeing the process of career choice as an activity system

The components of the career choice activity system, influencing factors in decision-making process, are presented in Figure 3.5. The aim of this diagram is to show the relationship between these components and the object (decision-making). This study suggests that activity theory is a viable theoretical lens to study reasons for career choice. One of the advantages of employing the activity theory here is that it allows recognizing the multiplicity of what is happening during school attendance in terms of career choice. It provides an alternative perspective to evaluate the pre-dominant factors in a whole picture. Another advantage of using this theory is that it supports the analysis of the dialectic interactions between students and educational factors. The focus on interactions through internalization and externalization can be regarded as the hallmark of this framework. Lastly, the theory provides a framework for understanding how each aspect and level of education in the school are connected with the social activities in which they are embedded and how they mutually interact. A productive utilization of the theory as a tool in this study will add to its validity and guide future researchers in its effective use in their studies of learning activities in school.

As for limitations, using activity theory to conceptualize the human activity system has been criticized as imposing a structure on human actions and as not being a natural representation of human practice (Yamagata-Lynch, 2003). However, this limitation exists with all the sociocultural theories that researchers use to make meaning of the phenomena they are studying. The researcher made it clear that the findings of this study do not intend to reveal all the complex factors underlying the studied systems but rather to provide insights into certain dimensions of sociocultural factors of career choice.

Another limitation arises from the time period. Even though it is expected that interviews should be conducted each year to get accurate data as indicated in the theory, it is

not possible to apply in this system. Because the graduates were selected from different time periods to put out a general perspective and also the activity system started when the students attended the school and it ended when they graduated. That means there is no opportunity to speak to students in those time periods, but only once they had graduated.

CHAPTER IV: RESEARCH DESIGN AND METHOD

This chapter will describe how this study is accomplished and which methods are used. In the following pages, qualifications of people with who interviews were conducted, development and design of research instrument, data collection and data analysis will be explained, respectively. In this chapter, only the explanation of data analysis will be offered; results received from data analysis will be emphasized in the next chapter.

IV.1 Sample

The sample consists of 35 DSI's graduates and staff. Eighteen of the interviews are considered more important for the study, since the interviewees are mostly engineers and have highly-qualified positions in Turkish business life even though the rest of graduates have answered in the same way. Although I interviewed both German and Turkish directors of the school, those interviews are used for only general information about schools and pupils. The time periods of interviewees at the DSI: Four 1954-62, one 1955-69, one 1956-64, three 1959-66, one 1960-72, two 1965-74, one 1969-77, two 1973-82, one 1977-86, one 1982-90.

During all of the interviews a tape recorder was used. Interviews took about an hour to complete. Also, copies of notes were taken in order to have back-up data and more importantly to record information about the media of interviews and attitudes of interviewees because cassette tapes only record the words. Then, the interviews were transcribed and translated from Turkish to English.

Four of the interviewees are women and the rest of them were men. Names and addresses of the graduates were provided by the book on DSI's graduates, '*Kim Kimdir?*' (Who is who?) Assistance for acquiring names and verifying addresses was also given by a graduate, one of the most prominent industrialists in Turkey. He invited me to the traditional day of the graduates 'Sausages Day' in the garden of German Consulate in Tarabya where they meet annually. Plus he was so polite and kind to introduce me to the graduates on that special day when the most of the appointments are taken.

IV.2 Development of the Instrument

The method of obtaining information used in this study is interview. Firstly, main and sub-questions of interviews are designed and then their aspects are defined. Interview questions are provided in Appendix D.

All question types are derived from Qualitative Evaluation Methods (Patton, 1980). The interview questions consist of four parts. Part I contains daily experiences of the graduates. Part II comprises general background data including, their parents' educational and socio-economic level. Part III contains graduates' experiences and behaviors and Part IV contains the demographic questions about the graduates.

The categorization of question is the best way to scrutinize the special characteristics of a research. Therefore, the interview guideline was formed by five categories and twenty-three aspects in relation to the main questions of the study. In the interviews, the graduates are asked about their experiences, recollections about the school according to the following categories: experience/behavior in the Deutsche-Schule-İstanbul (DSI); opinion/value in DSI; knowledge; experience at university; as well as demographic information.

Different questions relating to different aspects are asked. The aspects are on

- The cultural and economical background of the graduates such as, socioeconomic and socio-cultural status of the graduate and his/her parents,
- Cultural background of the school such as socio-cultural aspect of the school life,
- The characteristic of the school such as teaching style, performing curriculum, social relations and activities in the school, and rules in the school, the impact on graduates' career choice.

As indicated in the literature review part (Chapter I, p. 20), the above aspects will be searched as a methodological guideline for finding the mediating artifacts throughout the career choice in the activity system.

The guideline includes mostly open questions and sub-questions in case that the interviewee is not willing to answer some main questions. Information about the interview was also given before starting the interview (Appendix C).

IV. 3 Data Collection

Data include narrative data from interview texts and field notes. Initially, these data are recorded by audiotape during interviews, and then the researcher listens to the audiotape of each interview immediately following the interviews. Then the interviews ware transcribed and translated. Field notes and initial impressions of the interviews are recorded in a notebook during interviews.

Conducting interviews started on May 15, 2006 and ended July 28, 2006. A few interviews had been conducted until the 'Sausage Day' and most of the appointments were taken in that special day and interviews were conducted in interviewees' offices or houses. Most of the interviews were conducted on the scheduled date. Just five of them cancelled their appointment due to workload.

IV.4 Data Analysis

"Analysis involves working with data, organizing them, breaking them into manageable units, synthesizing them, searching for patterns, discovering what is important and what is to be learned" (Bogdan&Biklen, 1998, p. 157). This study uses qualitative content analysis to categorize interview data (Flick, 2002). Also some quantitative data are given to support qualitative analysis. Qualitative content analysis is performed by using the software (MAXqda) and MS EXCEL software is used for quantitative analysis to support the qualitative analysis.

The principles of qualitative content analysis were used for firstly, conceptual refinement and data coding, by reading notes and data repeatedly and thoroughly, secondly, writing a brief summary of data for each category, and lastly combining the summaries with an example of typical cases (Berelson, 1971; Altheide, 1996).

Data for this analysis includes narrative data from interview texts and field notes. Also, one interview is used to confirm the findings of MAXqda. Those findings are examined in one interview in detail. Initially, transcriptions are reviewed and common points that each interviewee has mentioned are determined and then all transcriptions are categorized according to these common points. And these common points are defined to make the reader understand many things easily. These categories are given below as examples.

IV.4.1 Coding Categories

1. Attitudes of both German and Turkish teachers towards students: This subcategory refers to the hierarchy between both groups of teachers, and attempts to ascertain the relation between the teachers and students' favored courses. In other words, how both groups of teacher behaved towards the students and how the students were influenced by these behaviors.
   Turkish teachers are generally too serious and do not have any relations with students in Turkish educational system while the German teachers smile and make jokes.
2. Curriculum: This category refers to the "hidden (implicit) curriculum" that may be viewed as covert, unintended, implicit, or simply unacknowledged specifically what the teachers performed apart from the textbooks during the course. In other words, it attempts to find out the supplementary things (to) for the official textbook and curriculum.
   (...) we had a textbook in Math course; however, the teacher brought different problems from different books. We didn't follow the textbooks so much.

3. Teaching style of both groups of teachers: This category refers to the difference(s) in the teaching style of both groups of teachers, namely how they performed the curriculum.
   There was not a great difference (.) I mean (...) each did not perform the course for making a requirement but for contributing to you something and they certainly demanded from you to comment on it (...) they taught us how to think not memorize.
4. Social activities in the school: This category refers to the social activities during the school life which might be one of the components of `hidden curriculum` in the school.
   There were many trips both in the country and on abroad. Our Turkish teachers organized trips in the country. We went to Alanya (...), Kapadokya as an activity of trip organization (.)
5. Power relations between students and teachers ("Division of labor"): This category refers to the hierarchy between students and teachers, and examines what the concepts of hierarchy are.
   There was not any beating in the DSI. Never.
6. Rules: This category refers to the rules in the school such as attendance, being punctual, not cheating etc. A school regulation that must be obeyed is meant.
   There was an "Ermahnung" and three "Ermahnungen" meant one Fehrmahnung and a letter was sent to the parents. At that point, one, who behaved irregularly, was immediately punished and it was written into the 'Klassenbuch'.
7. Socioeconomic and socio-cultural status of his/her parents: This category refers to the financial and cultural situation of graduates' parents.
   My father was the last Rector of Kocaeli University. My mother was a lawyer...There was not any Robert College at that time…. My parents looked for the best college and unanimously preferred the German School.
8. *Reason of Deutsche-Schule-İstanbul (DSI) Choice: This category looks for the reason(s) behind their enrollment at the DSI.*

Well, firstly, the DSI was one of the most prominent schools of Turkey at those times as it is today. And also, the DSI is unique in that both English and German are taught very well.

9. *Contacts with Germans or Germany: This category refers to the contact(s) of their parents with Germans or Germany before attending to the DSI.*
   They did not have any contacts.
10. Motivation of students: This category attempts to find out in which way the school contributed to the motivation of students which comes from reward system.

    F: Suppose you got 10 from all your courses, would the school reward you?
    S: They gave a book-prize.

11. Career Choice: This category attempts to find out how and when they decided to be an engineer and what (and/or who) played a significant role in his/her career choice.
    If you were so successful at those times, you became either an engineer or a medical doctor, since it was so popular.

12. The perceived distinctiveness of DSI in relation to others: This category refers to the special characteristics of the DSI in comparison to the other schools in Turkey.
    Of course, there were so many differences. Those who finished an American School become more superficial and pretentious (...) there was superficiality there. Those who finished a French School (...) become (...) how can I say, such as pressed.

13. Stereotype of the engineering: This category refers to perceptions of graduates of 'engineering'. What they understood from "engineering" and its relation with studying in DSI.
    As I said I did not think to become an engineer. I would like to do something on food then I found myself in engineering where I could do it. It is a good thing since everybody understands what you mean when you say, "I'm an engineer'.

The codes are used and fixed for both coders in the same way. Thus the categories are described by prototyped procedure and their inter-rater consistency/reliability is tested with the help of a second coder.

These definitions of each category provide to test the reliability of the content analysis of the interviews. Two of the interviews are selected considering both the length and content that have enough data for research questions. Then, the second reader coded the text according to the categories mentioned above.

The goal of content analysis research is to present a systematic and objective description of the attributes of interviews. Then, if research is to satisfy the requirement of objectivity, measures and procedures must be reliable; i.e., repeated measures with the same

instrument on a given sample of data should yield similar results (Holsti, 1969). Accordingly, a research procedure is reliable when it responds to the same phenomena in the same way regardless of the circumstances of its implementation (Krippendorff, 2004).

IV.4.2 Reliability

Inter-rater-consistency/reliability is measured by the amount of agreement between raters. The inter-rater consistency of the categories were assessed by coding of a second person. The following formula was used:

$$R = \frac{\text{Common codes} + \text{codes C1/C2}}{(C1+C2)/2}$$ (Bos&Tarnai, 1989).

After the first reading of the interviews, the first and the second coder discussed the different categories to clarify the study concepts, over-all purpose, and specific aims. The first and second coder met to discuss discrepancies and make additions and deletions to definitions. Also some categories were omitted.

The researcher re-reads the interviews and after each interview is thoroughly summarized; all data under each category of interviews are listed. And then the second coder reads the original texts and lists summaries and compares them until inter-rater consistency has enough value. The results reveal poor agreement at first, but in the second test the rate increases. Test results are given in Table 4.1.

Responses are coded on data sheets and the categories' reliability is tested. These data were analyzed by MAXqda. MAXqda is a qualitative analysis method that provides the researcher a convenient media while looking for a data in the interviews. Firstly interviews in word document are converted into Rich Text Format (RTF) then these interviews are transferred into MAXqda and these interviews are shown under "text groups" title (Figure 4.1). Interview1, Interview2… is used instead of interviewee's names because the sample is more significant than the personalities. Then each category (named as code in MAXqda) is written in the "code system". Each relevant expression in the interviews is sent to suitable categories (codes) in the "code system". This helps to find out each code in each interview when needed.

Table 4.1: Inter-rater consistency table

	Coder1	Coder2	Common	Percentage
Cat1	28	31	25	.87
Cat2	37	40	33	.88
Cat3	29	30	26	.91
Cat4	36	35	34	.98
Cat5	21	18	15	.82
Cat6	24	22	19	.87
Cat7	22	20	17	.86
Cat8	10	7	7	.99
Cat9	9	12	8	.83
Cat10	5	7	4	.78
Cat11	18	14	13	.89
Cat12	37	50	34	.79
Cat13	11	13	11	.98
Cat14	20	15	15	.93
Cat15	7	7	7	1.00
Cat16	7	7	7	1.00
Cat17	9	9	9	1.00

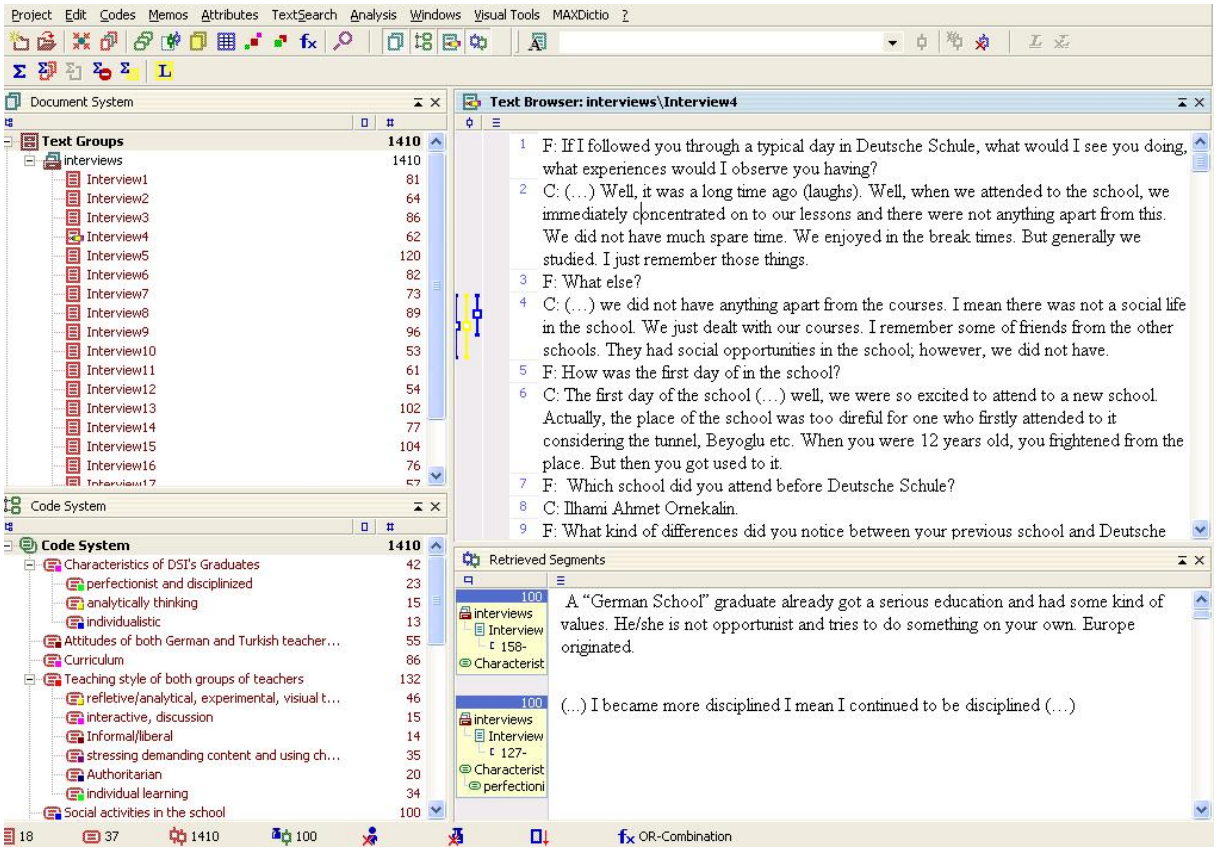


Figure 4.1: Picture of MAXqda window

MAXqda with its properties stated above helps the researcher to categorize all interviews especially when considering the length and number of interviews. When the researcher wants to perform the same research manually, it is necessary to have all interviews in hard form (printed) and then try to categorize all interviews. This method is very difficult, time-consuming and it tends to make more mistakes.

Moreover, MAXqda has special tools for evaluating the data: Code-Relation-Browser, MAX map. In this study, Code-Relation-Browser is used. This browser helps to find out the intersections in the "Code System". Therefore, the researcher easily finds out common point(s) of all interviews or selected (activated) interviews (the researcher can find out intersections by activating any interview(s)).

In the MAX Map section, the researcher draws maps to show relations between codes. This provides a visual presentation to see the whole picture of codes. The picture of these tools used in this study will be given in Chapter V.

In this study, 18 interviews are converted into RTF documents and the Coding categories given above are formed in MAXqda. The expressions are placed into related categories. Then, these expressions under each code are printed out and for each category, all expressions are reviewed. It continues to divide main categories into sub-categories. So, all expressions are re-placed into related categories (sub-codes). Intersected codes are determined by using Code-Relation-Browser and the relation between the codes (main and sub) are shown by MAX map tool. Also, MAXqda directly calculates the frequency of sub-codes which help to perform analysis and obtain its results easily.

As a further step, quantitative data is used to support obtained results. MS EXCEL software is used to make calculations and show the results. For each code, means of frequencies are calculated based on both sub-codes and interviewees. This calculation provides to compare and evaluate the data. Then, these data are shown in graphics by using MS EXCEL's graphic tool to visualize this comparison and evaluation.

In conclusion, the aim of this method is to establish the perceptions of 'hidden curriculum' by means of analyzing interviews and it will be possible to see relation between the 'hidden curriculum' and career choice. The following chapter will give the data, obtained by interviews, and evaluation of these data.

CHAPTER V. RESULTS

This chapter presents how results were received and analyzed in this study. Also obtained results are shown in tables and figures. MAXqda is used to extract and analyze the data from interviews. These data are analyzed as well as activity theory and hidden curriculum perspectives. Lastly, 'how career choice is affected' is concerned.

The chapter consists of eight parts. In the first part, coding system in MAXqda is defined. In the second part, components of characteristics of the DSI are explained in detail. In the following two parts, reason for the DSI choice and characteristics of graduates are studied. In the fifth and sixth part, relationships between characteristics of the DSI, graduates and their career choice are analyzed. In the next sections, an interpretation within the framework of activity theory and hidden curriculum is given, as well as how career choice is affected respectively.

V.1 Refinement of Coding System in MAXqda

A coding system in MAXqda means the accumulation of whole codes performed in interviews. The coding system comprising of 18 interviews and 15 main codes were developed in the program. There are three steps of refinement of the coding system. In the first step, 15 main codes (Figure 5.1) were formed according to the research question.

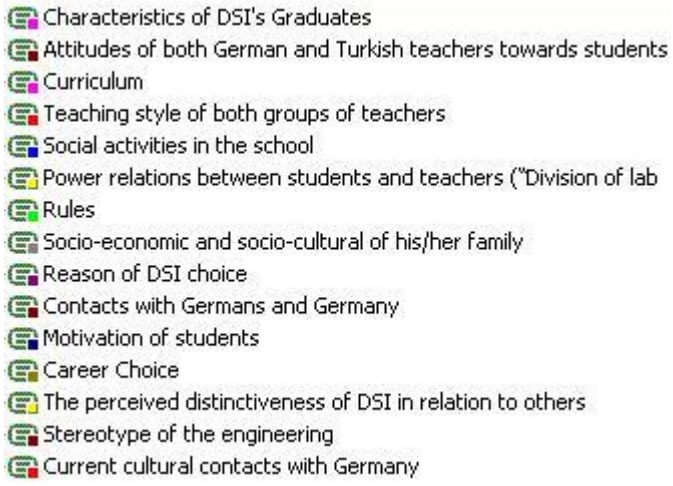


Figure 5.1: Main Codes

In the second step, different aspects emerged in some main codes. Therefore, sub-codes were formed to make them more informative (Figure 5.2). After forming them, it was observed that some sub-codes had low frequencies. Therefore, they were put together to get higher frequencies.

The category of "*characteristics of DSI's graduates"* has three sub-codes: 'perfectionist and disciplined', 'analytically thinking', 'individualistic'. These three qualifications identify the characteristics of graduates.

The category of "*teaching style of teachers"* has six sub-codes: 'informal/liberal', 'analytical, experimental, and visual teaching'; 'non-directive/interactive/participatory', 'stressing demanding/challenging content and using challenging material', 'directive/authoritarian'. These sub-codes indicate the qualifications of teachers.

The category of "*rules"* has five sub-codes: 'punctuality', 'exclusion', 'clothing standards', 'cheating norms', and 'rigid rules for breaks'. These sub-codes define the types of rules in the school.

The category of *"reason of DSI choice"* has two sub-codes: personal and parental. The category of parents has also two sub-codes: 'bilingual' and 'prominent'. These sub-codes identify the reasons for graduates' attendance to DSI.

The category of *"career choice"* has four sub-codes: 'parents', 'stereotype of engineering', 'friends', and 'school'. These sub-codes are the causal factors in the perception of interviewees mentioned for their reason of career choice.

As a result of the second step, the following main codes were defined by these sub-codes to understand main characteristics of the school and graduates:

- Characteristics of the DSI's graduates
- Teaching style
- Rules
- Reason of DSI choice
- Career choice

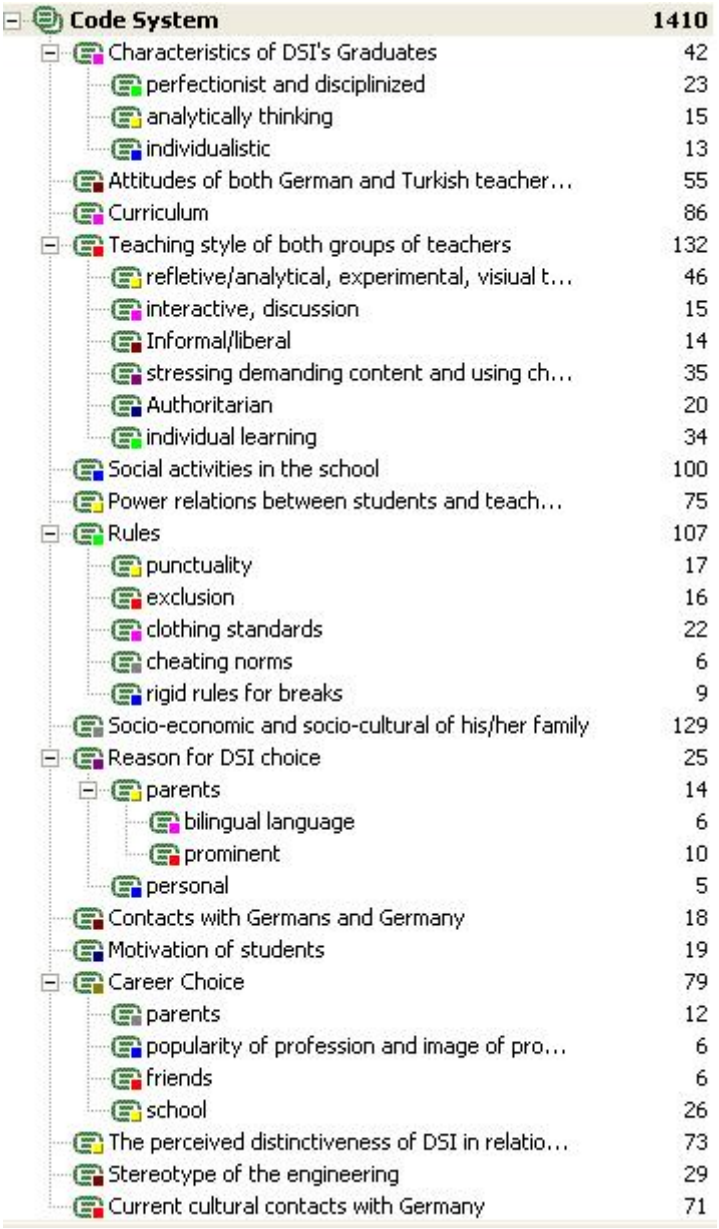
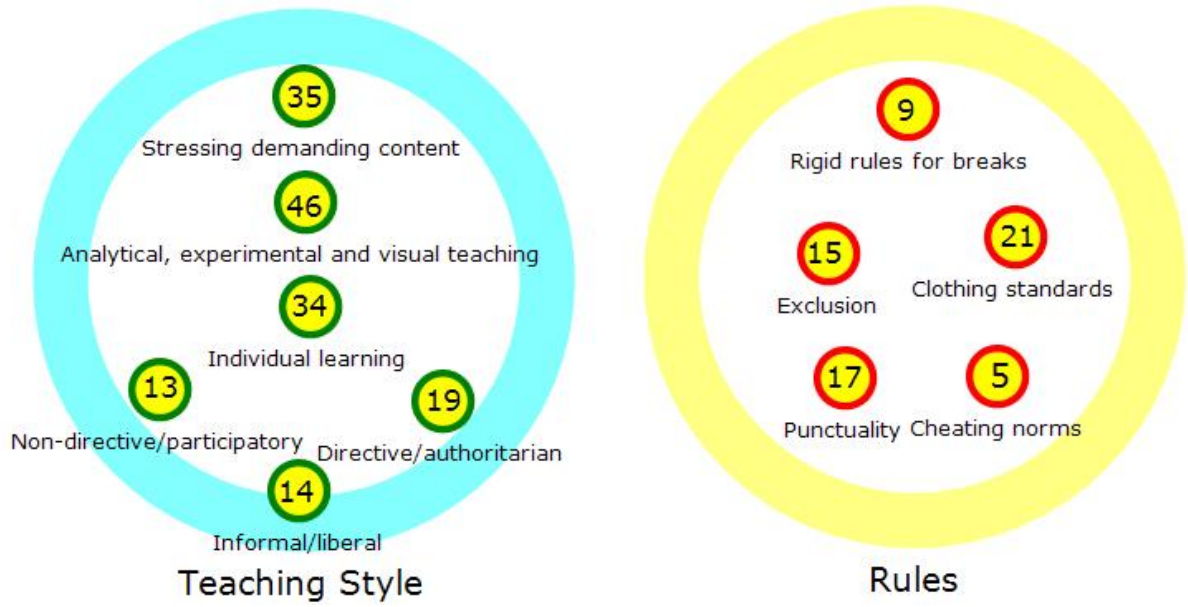


Figure 5.2: Main and sub-codes

V.2 Characteristics of the DSI

The code system is performed in order to analyze the characteristics of the DSI. As a result of this analysis, *"teaching style of teachers"* and *"rules"* are mentioned as characteristics of the DSI. With regard to these main codes, the characteristics of the DSI are shown in Figure 5.3 with sufficient specific sentences that refer to the main and sub-codes in all of the interviews. Table 5.1 and 5.3 show respectively the frequency of sub-codes *"teaching style"* and *"rules"* and the number of interviews in which the sub-codes were formed.



Note: The numbers represent the frequency of the sub-codes in all 18 interviews.

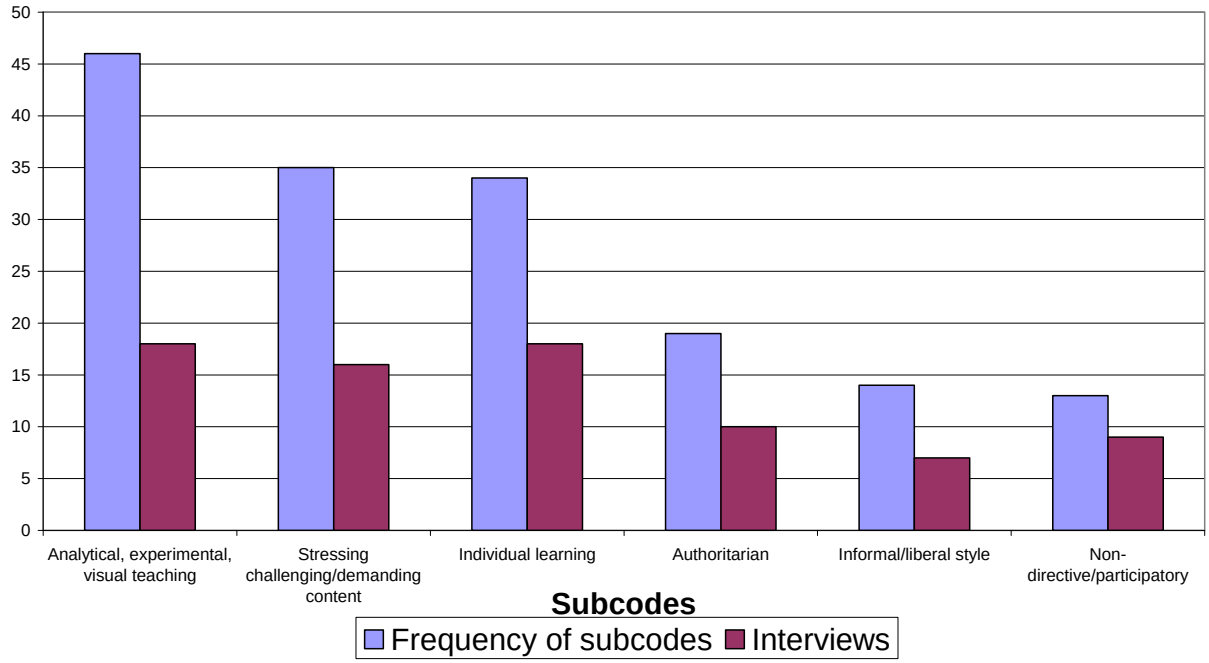
Figure 5.3: Characteristics of the DSI

V.2.1 *Teaching Style*

"Teaching style" consists of six sub-codes 'informal/liberal', 'analytical, experimental, and visual teaching'; 'non-directive/interactive/participatory', 'stressing demanding/ challenging content and using challenging material', 'directive/authoritarian' as mentioned Chapter V.1. The following tables and figures show the data related with these sub codes taken from interviews and these data are demonstrated for each sub-code. Beside that, mean proportion of all interviews is calculated and some quotations from interviews are given to support the numerical data.

Table 5.1: Frequency of the sub-codes of *"teaching style"* and the number of interviews in which the sub-codes were attributed.

CODES	Frequency of sub-codes	Interviews
TEACHING STYLE	161	18
Analytical, experimental, visual teaching	46	18
Stressing challenging/demanding content	35	16
Individual learning	34	18
Directive/Authoritarian	19	10
Informal/liberal style	14	7
Non-directive/Interactive/Participatory	13	8



Note: Total 161 sub-codes 11 interviews

Figure 5.4: Frequency of sub-codes and number of interviews in which the sub-codes were derived from the main code *"teaching style"*

The sub-codes of *"teaching style"* were mentioned in all 18 interviews. Table 5.1 provides a summary of the data outlining different kinds of *"teaching style"*. When these data are analyzed, significant differences are found on the value of frequency of first three sub codes. This indicates that interviewees mostly emphasized on 'analytical, experimental and visual teaching', 'stressing challenging/demanding content' and 'individual learning'. Conversely, the following sub-codes were stated less (approximately 1/3 of total interviewees mentioned and less than half of previous sub-codes were stated): 'non-directive/authoritarian', 'informal/teaching style' and 'non-directive/interactive/ participatory'.

Table 5.2 shows the means of "teaching style" for each interview. The sub-codes are ordered according to their mean proportion respectively. Comparing to data of Table 5.1, it can be seen that there is no significant difference between the orders of sub-codes. As described previously, 'analytical, experimental and visual teaching', 'stressing challenging/demanding content' and 'individual learning' have formed the main part of the "teaching style"(Total 75% of "teaching style"). However, 'individual learning' mean score increased slightly and therefore the orders of 'individual learning' and 'stressing demanding content' have switched. In the same way, the order of less-mentioned sub-codes ('non-directive/authoritarian', 'informal/teaching style' and 'non-directive/interactive/participatory') has changed. Although the order of sub-code 'authoritarian' is still prior to 'informal/liberal'

as shown in Table 5.1, the sub-code 'interactive' mean score has increased and exceeded the 'authoritarian' and 'informal/liberal' sub-code.

Table 5.2: Relative frequencies of *"teaching style"* for each interview and mean proportion over all interviews.

	In1	In2	In3	In4	In5	In6	In7	In8	In9	In10	In11	In12	In13	In14	In15	In16	In17	In18	mean
Analytical, Experimental, Visual Teaching	0,20	0,17	0,33	0,25	0,20	0,15	0,50	0,45	0,25	0,60	0,40	0,20	0,33	0,14	0,25	0,25	0,40	0,14	0,29
Individual Learning	0,30	0,17	0,11	0,50	0,10	0,15	0,17	0,27	0,50	0,10	0,40	0,40	0,11	0,14	0,10	0,17	0,40	0,29	0,24
Stressing Demanding Content	0,30	0,17	0,33	0,00	0,20	0,15	0,33	0,09	0,25	0,10	0,20	0,20	0,22	0,43	0,35	0,25	0,00	0,43	0,22
Interactive	0,00	0,33	0,00	0,25	0,20	0,15	0,00	0,00	0,00	0,10	0,00	0,00	0,11	0,14	0,00	0,25	0,20	0,00	0,10
Authoritarian	0,10	0,17	0,22	0,00	0,20	0,15	0,00	0,09	0,00	0,00	0,00	0,00	0,22	0,00	0,30	0,08	0,00	0,14	0,09
Informal/ Liberal	0,10	0,00	0,00	0,00	0,10	0,23	0,00	0,09	0,00	0,10	0,00	0,20	0,00	0,14	0,00	0,00	0,00	0,00	0,05

Note: All mean proportion values are written in two-digit numbers.

The sample quotations that were taken from interviews were as follows: Firstly, there were many statements in the interviews in which 'informal/liberal' was emphasized. That is because of the era of the interviewees' school life was mostly 1945-1970, when a 'strict official curriculum' was practiced in Turkey. However, most interviewees indicated that they were able to debate on various issues. In other words, nobody prevented them discussing any topics even it was forbidden in the other state schools.

> *Interviewee3: I think there was a very open-minded education atmosphere considering the circumstances of that era (…) I mean you could debate on many issues…*

Secondly, 'analytical, experimental and visual' teaching style is performed in the DSI (Figure 5.5). It is emphasized that German teachers generally taught the logic of the formulas rather than have them memorized. Moreover, German teachers gave examples and proofs of how the formula was formed. In contrast, Turkish teachers mostly let students memorize each formula without explaining its foundation.

> *Interviewee5: Normally, most pupils memorized the formulas; however, we learned the logic. For instance, a Turkish teacher writes the formula of action and reaction. I mean F=… then explains how a reaction against a force means reaction. I will never forget the experiments carried out by our German teachers…(.) because anyone who saw experiments did not need to understand whether it is F or not.'*

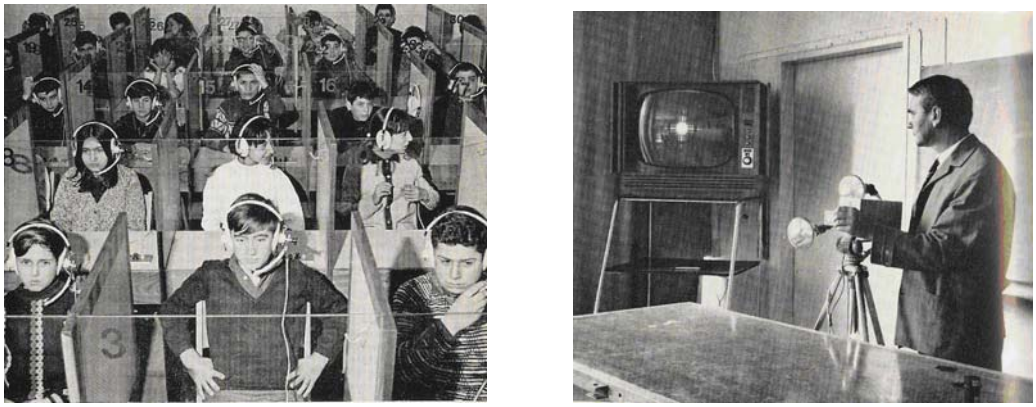


Figure 5.5: Elektronisches klassenzimmer and messungen am fernsehschrim (Semerau & Thornstedt, 1968, p. 108-118).

Thirdly, all science courses were performed in the laboratories which helped students to learn the material with experiments (Figure 5.6). Therefore, they could remember the material even though many years had past. According to the interviewees, 'visual teaching style' makes knowledge 'permanent'.

> *Interviewee11: …Our Biology, Chemistry, and Physics courses were performed in the laboratories…*
> *Interviwee8: For instance, our teacher taught us how air is conductive with an experiment. He put a jar on an alarm clock and then the air in the jar was absorbed by a motor which caused a vacuum in the alarm clock. One could see and hear how the noise of the alarm clock started to decrease. Can there be a better style of teaching as this? You understand the conductivity of air by an experiment and never forget it.*

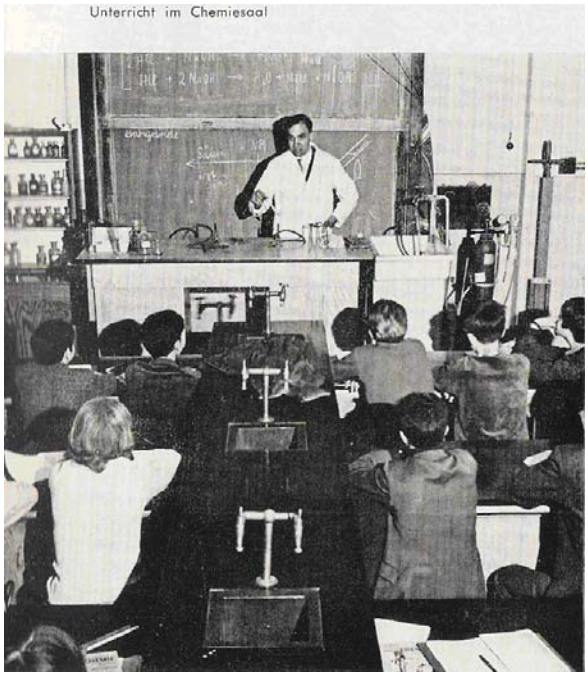


Figure 5.6: Chemistry laboratory (Semerau & Thornstedt, 1968).

Fourthly, the courses in the DSI were performed interactively. Moreover, the pupils were always prepared for the exams. 'Interactive and participatory' courses helped them to be prepared for the subject before coming to class and to be ready for each course. Furthermore, the teachers allowed the students to discuss a given topic. That gave them the opportunity to learn how to criticize something and to develop their criticizing ability. Moreover, even now, they indicate that they have the clue of this education. That is, they normally criticize any kind of issue before accepting it.

> *Interviewee5: ...our courses were always performed interactively. Therefore, we were never anxious when the exam-time came…"*
> *Interviewee13: ...for instance, we read Berthold Brecht and discussed it. If you ask me what you really learned in the DSI was the ability to criticize something initially before accepting it…*

Fifthly, 'stressing challenging/demanding content', one of the distinctive characteristics of the DSI, enabled students to learn demanding material in many subjects. Therefore, they stated that they were well prepared for their courses at university, since the topics there had already been introduced at the DSI.

> *Interviewee 1:…as soon as lectures started in the university, I understood why the DSI was a good school. Since we had already learned the material in Math and Physics when we were in the DSI, it was not hard for me during the first two years of university…*

Sixthly, the teachers used 'challenging material' that made the course more active and interesting for the students. Furthermore, this challenging material encouraged them to make more efforts for their courses.

> *Interviewee6: They sometimes brought a slide projector. We had also some additional stories and we discussed the characters in them. In addition, they gave us books to read in summer…and we discussed them in detail after returning back.*

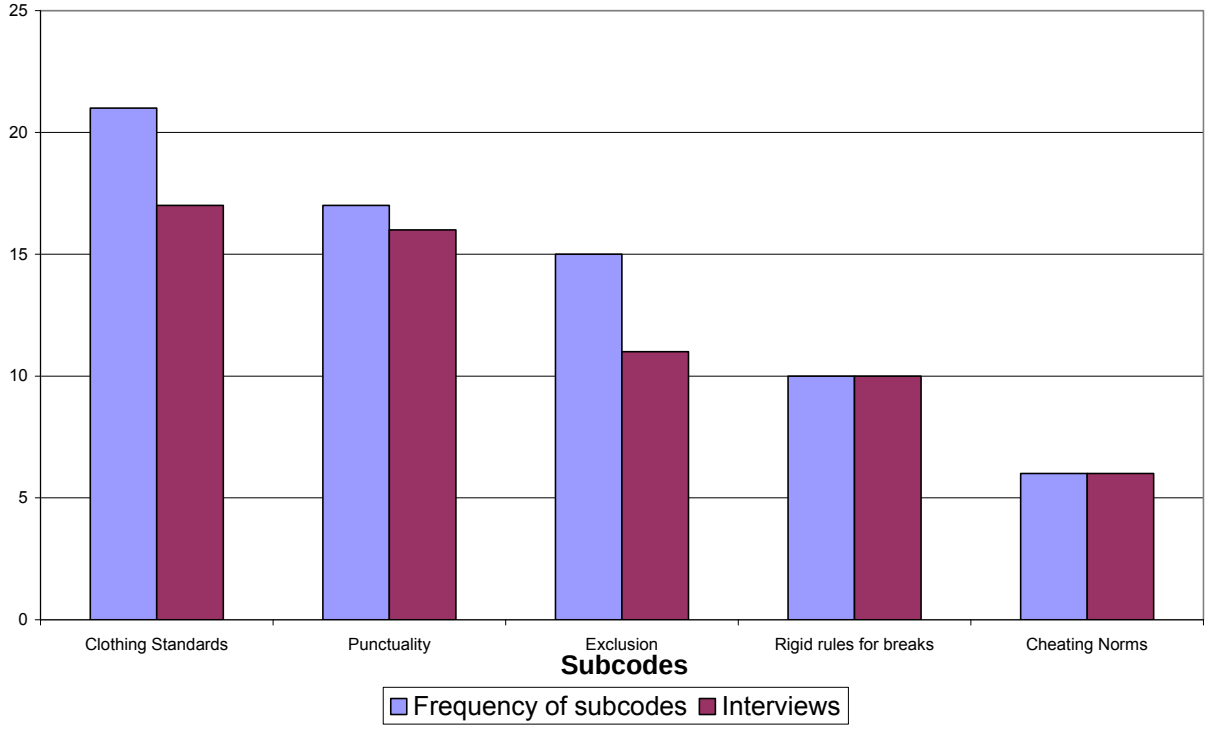
V.2.2 Rules

"Rules", second characteristics of DSI, consists of five sub-codes 'clothing standards', 'punctuality', 'exclusion', 'cheating norms', and 'rigid rules for breaks'. In the following pages, the data related with these sub-codes taken from interviews are shown in figures and

tables for each sub-code. Also, mean proportion of all over interviews is calculated and some quotes from interviews are given to support the numerical data.

Table 5.3: Frequency of the sub-codes of *"rules"* and the number of interviews in which the sub-codes were attributed.

CODES	Frequency of sub-codes	Interviews
RULES	69	18
Clothing Standards	21	17
Punctuality	17	16
Exclusion	15	11
Rigid rules for breaks	10	10
Cheating Norms	6	6



Note: Total 69 sub-codes, 18 interviews

Figure 5.7: Frequency of sub-codes and number of interviews in which the sub-codes were derived from the main code "rules"

Table 5.3 and figure 5.7 provides a summary of the data frequency of five different kinds of *"rules"* and the numbers of interviews. According to this table, interviewees emphasized mostly on 'clothing standards' and 'punctuality', followed by 'exclusion' comes next. It can be seen that the frequency of sub-codes decreased from 21, 17 and 15. On the other hand, 'rigid rules for breaks' and 'cheating norms' were less mentioned. Approximately half of the total interviewees mentioned 'rigid rules for breaks' and the frequency of sub-

codes is about half of maximum frequency. In 1/3 of the total interviews, ‘cheating norms’ were mentioned and the frequency of the sub-code is ¼.

Table 5.4: Relative frequencies of *“rules”* for each interview and mean proportion over all interviews.

	In1	In2	In3	In4	In5	In6	In7	In8	In9	In10	In11	In12	In13	In14	In15	In16	In17	In18	mean
Clothing Standards	0,25	0,67	0,20	1,00	0,33	0,40	0,25	0,33	0,50	0,17	0,50	0,33	0,17	0,00	0,20	0,50	0,33	0,33	0,36
Punctuality	0,25	0,33	0,20	0,00	0,17	0,40	0,25	0,33	0,50	0,17	0,25	0,33	0,33	0,25	0,20	0,00	0,33	0,33	0,26
Exclusion, Passing Class Directly	0,00	0,00	0,20	0,00	0,17	0,20	0,25	0,33	0,00	0,33	0,00	0,00	0,17	0,50	0,60	0,50	0,00	0,33	0,20
Rigid rules for breaks	0,25	0,00	0,20	0,00	0,17	0,00	0,00	0,00	0,00	0,17	0,25	0,33	0,33	0,00	0,00	0,00	0,33	0,00	0,11
Cheating Norms	0,25	0,00	0,20	0,00	0,17	0,00	0,25	0,00	0,00	0,17	0,00	0,00	0,00	0,25	0,00	0,00	0,00	0,00	0,07

Those rules were mentioned in all 18 interviews and their mean proportion is calculated and shown in Table 5.4. Mean proportion represents average opinions of graduates. Therefore, a more general result is revealed by this calculation. In the context of this, mean proportion values of *“rules”* indicate that the most-frequent sub-code is ‘clothing standards’ and as in *“teaching style”,* the first three *“rules”* comprises most part of all the rules (82%). A lesser sub-code is ‘cheating norms’.

The sample quotes on the sub-codes that are taken from interviews are as follows:

> *Interviwee 6: We were free to wear anything at school and the discipline was related to whether or not we did our homework and studied more.*
> *Interviewee 13: If you came after 08:20, you had to go to the secretariat to take a ’late’ paper. You should pay attention to the timetable of the school.*
> *Interviewee 14: There were not any other punishments (...) just if one cheated, his/her paper was taken, a warning was given and his/her name was also written into the “Klassenbuch”.*
> *Interviewee 17: When we were in the elementary school, the school ground was divided into two separate sections. We were required to stay on our side. Otherwise, our names were written into the “Klassenbuch”.*

According to the interviewees, the school director was very harsh and rigid. Therefore, pupils were expelld for not achieving the school’s standards, even if their

intelligence had made the successful in other schools. Consequently, the number of classes could sometimes decrease because of pupils' exclusion.

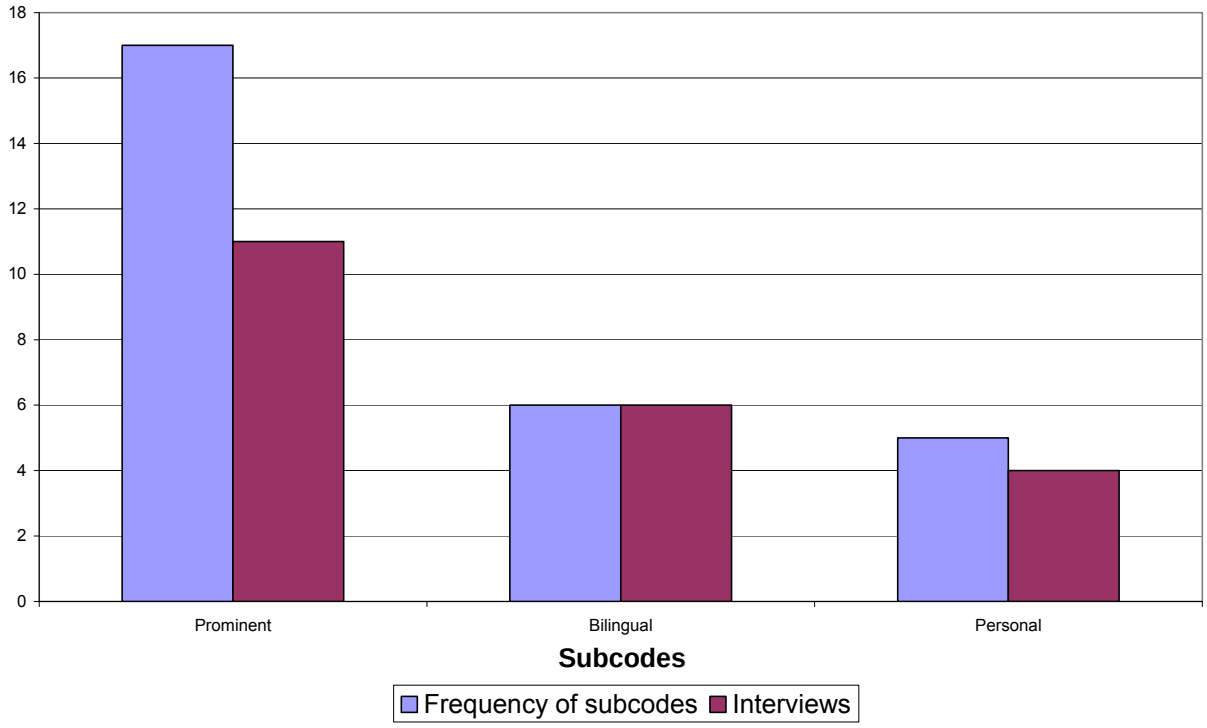
> *Interviewee 5: The school director did not even hesitate to eliminate pupils. Many of our friends were forced to change their school because of not achieving German School. However, they were very successful in other schools. Moreover, there was even a more serious elimination before our term started (.) I mean, there were years when the number of classes decreased from four to two.*

V.3 Reason for DSI Choice

"Reason for DSI choice" consists of three sub-codes 'prominent', 'bilingual' and 'personal'. Data of these sub-codes are given in table 5.5, 5.6 and figure 5.6. Table 5.5 shows the frequency of these sub-codes and in how many interviews they were made. Figure 5.8 demonstrates this as a graph to show their significance order. Table 5.6 shows mean proportion for each sub-code and over all interviews (just two interviewees did not mention anything significant, so they are not taken into consideration). Besides, some quotes from the interviews are given to support the numerical data.

Table 5.5: Frequency of the sub-codes of *"reason forDSI choice"* and the number of interviews in which the sub-codes were attributed.

CODES	Frequency of sub-codes	Interviews
REASON FOR DSI CHOICE	18	18
Prominent	17	11
Bilingual	6	6
Personal	5	4



Note: Total 21 sub-codes, 18 interviews

Figure 5.8: Frequency of sub-codes and number of interviews in which the sub-codes were derived from the main code "reason for DSI choice"

Table 5.5 provides a summary of the data outlining different kinds of *"reason for DSI choice"*. Contrary to the previous main codes, this main code is not mentioned in all interviews. The most often mentioned sub-code is expressed in 11 interviews. However, at least one of these sub-codes was mentioned in each interview. In the interviews, interviewees mostly emphasized 'prominent', then 'bilingual' and 'personal' respectively. A less mentioned sub-code is 'personal' (half of 'prominent').

Table 5.6: Relative frequencies of "*reason for DSI choice*" for each interview and mean proportion over all interviews.

	In1	In2	In3	In4	In5	In6	In7	In8	In9	In10	In11	In12	In13	In14	In15	In16	In17	In18	mean
Prominent	0,00	1,00	0,88	1,00	1,00	0,00	0,50	0,50	0,00	1,00	0,00	0,00	1,00	0,50	1,00	0,00	0,00	0,50	0,55
Bilingual	0,00	0,00	0,13	0,00	0,00	0,00	0,00	0,50	0,00	0,00	1,00	0,00	0,00	0,50	0,00	0,00	1,00	0,50	0,23
Personal	1,00	0,00	0,00	0,00	0,00	1,00	0,50	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,22

Table 5.6 displays the means of "*reason for DSI choice*" for each interview. The sub-codes are ordered according to their mean proportion respectively. Comparing to data of Table 5.5, it is seen that there are no significant differences between the orders of sub-codes. As described formerly, the sub-code 'prominent' has made up (has constituted) the main part

of the "reason for DSI choice" (Total %55 of "*reason for DSI choice*"). In addition, there is no significant difference between the mean proportion of 'bilingual' and 'personal'.

The school was bilingual, whereby both German and English were taught at the same time. These characteristics of the school attracted the attention of the graduates' parents. The sample quotes of the sub-codes taken from interviews are as follows:

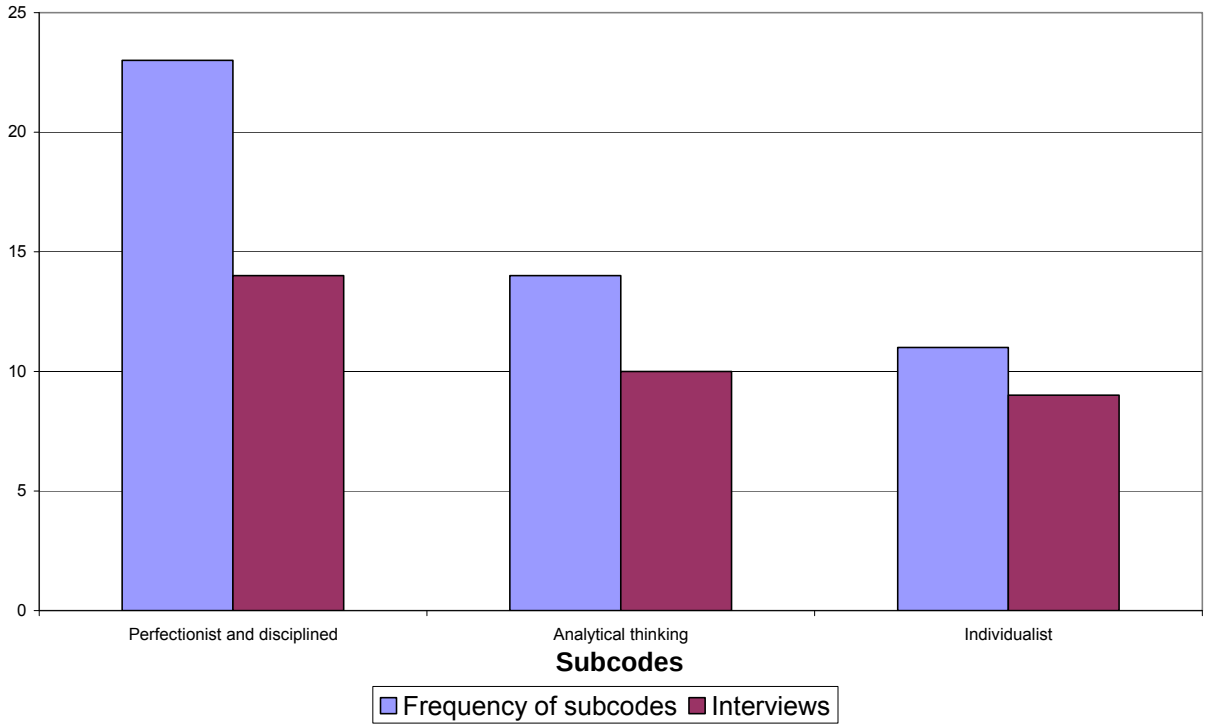
> *Interviewee 14: ...the DSI was unique in that both English and German were taught at the same time. I mean, you could speak both foreign languages. ...the DSI was one of the most prominent schools of Turkey at those times as it is presently.*

V.4 Characteristics of the Graduates

The coding is carried out in order to analyze characteristics of the graduates. As a result of this analysis, it is found that the characteristics of the graduates are described as 'perfectionist and disciplined', 'analytically thinking' and 'individualistic'. Table 5.7 shows the *"characteristics of the graduates"* with the code frequency and the number of interviews. Figure 5.7 shows how many interviewees indicated the sentences that relate to those sub-codes. Table 5.8 displays the mean proportion values calculated in order to get a more general evaluation.

Table 5.7: Frequency of the sub-codes of *"characteristics of graduates"* and the number of interviews in which sub-codes were attributed.

CODES	Frequency of sub-codes	Interviewees
CHARACTERISTIC OF GRADUATES	45	18
Perfectionist and disciplined	23	14
Analytically thinking	14	10
Individualistic	11	9



Note: Total 47 sub-codes, 18 interviews

Figure 5.9: Frequency of sub-codes and number of interviews in which the sub-codes were derived from the main code *"characteristics of graduates"*.

Table 5.7 provides a summary of the data outlining different *"characteristics of graduates"*. According to this table the interviewees mostly emphasized 'perfectionist and disciplined' (about half of the total frequency of sub-codes). Then, 'analytically thinking' and 'individualistic' follow and both have approximately the same values.

Of all of the interviews, just one interviewee did not mention anything on *"characteristics of graduates"*. The other 17 interviewees mentioned some views on at least one sub-code even though each sub-code was not mentioned in all interviews.

Table 5.8: Relative frequencies of *"characteristics of graduates"* for each interview and the mean proportion over all interviews.

	In1	In2	In3	In4	In5	In6	In7	In8	In9	In10	In11	In12	In13	In14	In15	In16	In17	In18	mean
Perfectionist and disciplined	0,50	0,50	0,33	1,00	0,00	0,50	0,00	0,38	1,00	0,67	1,00	0,00	0,60	0,50	0,60	0,50	0,00	1,00	0,53
Analytical thinking	0,50	0,00	0,33	0,00	0,50	0,50	0,00	0,50	0,00	0,33	0,00	0,00	0,20	0,50	0,20	0,00	0,50	0,00	0,24
Individualistic	0,00	0,50	0,33	0,00	0,50	0,00	1,00	0,13	0,00	0,00	0,00	0,00	0,20	0,00	0,20	0,50	0,50	0,00	0,23

Table 5.8 presents the data outlining the proportion mean. Mean proportion values are calculated in order to get a more general evaluation. In the context of this, mean proportion values of *"characteristics of graduates"* indicate that the most frequent sub-code is *'perfectionist and disciplined'* (53%). Then, *'analytically thinking'* and *'individualistic'* follow respectively and both have approximately the same mean proportion values.

A sample of quotes with these sub-codes taken from the above-mentioned interviews are as follows:

The graduates are generally disciplined and perfectionist.

> *Interviewee 9: ...I finished university with the working discipline taught by the DSI. On the other side, many people from other high schools could not graduate* from university *because they had spent their time at night clubs."*
> *Interviewee 13 :...a DSI graduate is a perfectionist, follows the rules* and reaches his/her potential by not taking any risks

The graduates have learned analytical thinking.

> *Interviewee 14...the DSI especially emphasized reading and analyzing a topic, which provided me with a great opportunity because analytical thinking is very indispensable in business life (.)*

The graduates are individualist.

> *Interviewee 17: ...The DSI educates individualism, so that one can deal with life by oneself... Such people are those who do not prefer to work in a group but alone...*

V.5 Relationship between *"teaching style"* and *"characteristics of graduates"*

In the third step, it has been attempted to find out the relationship between the sub-codes of the two main codes. Therefore, *"characteristics of graduates"* and *"teaching style"* were taken as an example to show the intersections between the main codes with the help of MAXqda. It is also possible to presume how the interviewees perceived the linkages between the related main codes by using these intersections. The dots in Figure 5.10 represent the frequency of relationship(s) between the attributes of graduates and "*teaching style*". The size of the dots differs in the code relation browser. The bigger dot size means that there is more frequency of relationship and vise versa.

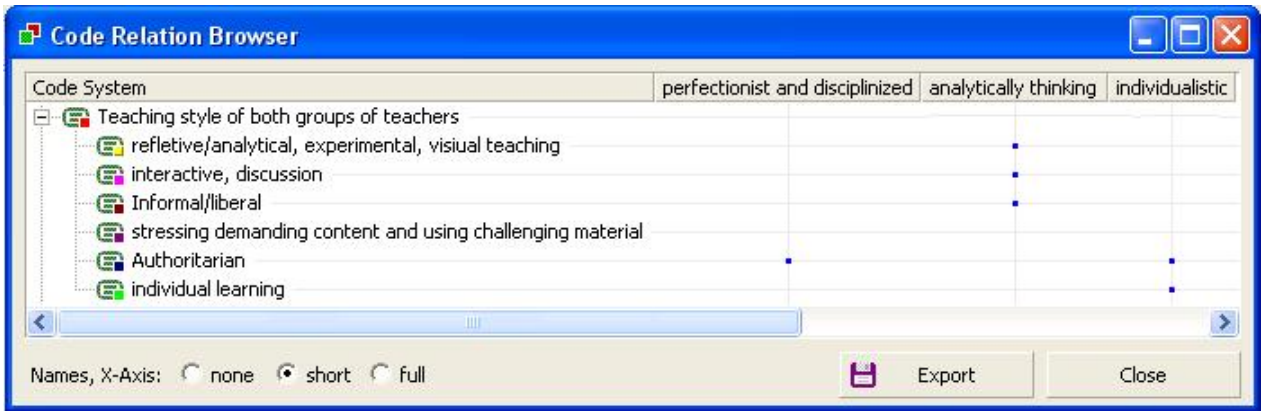


Figure 5.10: Relationship between *"teaching style"* and *"characteristics of graduates"*.

According to this figure, there are six intersections:

1. *'Informal/liberal'* intersects with *'analytically thinking'*. According to this intersection, the teachers who are seen as liberal were perceived as teachers who foster students to think analytically.
2. *'Analytical, experimental and visual teaching' intersects with* '*analytically thinking*.' According to this intersection, the teachers who use visual tools and conduct experiments were considered as teachers who encouraged students to think analytically.
3. *'Non-directive/interactive/participatory'* intersects with *'analytically thinking.'* According to this intersection, *'non-directive/interactive/participatory',* one of the "teaching styles" of DSI, teaches students not to accept an idea immediately without discussing it first, because they were used to discussing various topics at that school. Therefore, they examine everything in detail, because the ability to think analytically has been taught to them.
4. *'Directive/authoritarian'* intersects with *'perfectionist and disciplined'*. According to this intersection, the teachers, who are seen as 'authoritarian' were perceived as teachers who fostered students to be more ' *perfectionist and disciplined'*.
5. *"Directive/authoritarian"* intersects with *'individualistic'*. According to this intersection, the teachers who are seen as 'authoritarian' were perceived as teachers who let students be more *"individualistic"*.
6. *'Individual learning'* intersects with *'individualistic'*. According to this intersection, *'individual learning'*, one of the "teaching styles" of the DSI, taught students how to deal with their courses individually rather than in groups. In the eyes of interviewees, this attribution enabled them to be *'individualistic'* in their current life.

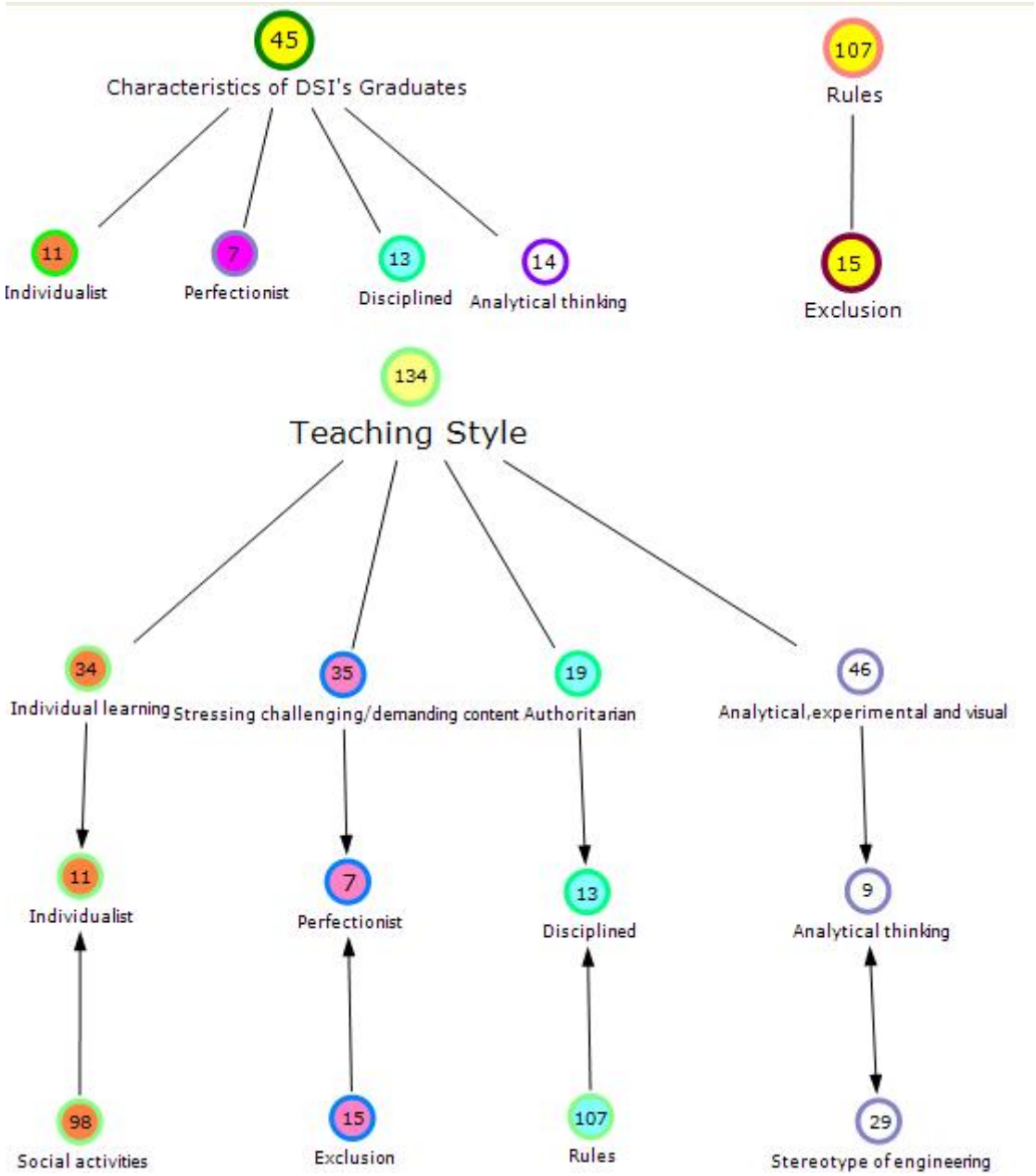
In conclusion, Figure 5.10 gives a whole relationship between the attributes of graduates and "*teaching style*". Accordingly, "*teaching style*" has affected graduates' characteristics. It is obvious that 'informal/liberal', 'analytical, experimental and visual teaching', 'non-directive/interactive/participatory', 'directive/authoritarian' and 'individual learning' have affected graduates' characteristics. However, no intersection has been obtained on *'stressing demanding content'*.

V.6 General Sub-code Relationship

In this part, sub-code relations is detailed. Firstly, all codes that have relations with another code are analyzed in Figure 5.11. This figure also helps to understand "how the school characteristics are related to the characteristics of the graduates". Then, some quotes from interviews are given to support the results.

Previously, *"characteristics of graduates"* are investigated in Table 5.7. 'Disciplined' and 'perfectionist' have common characteristics when compared with 'individualistic' and 'analytically thinking'. Therefore, the sub-codes 'disciplined' and 'perfectionist' were put together in Table 5.7 in order to make sub-codes more informative as stated in the 'Refinement of Coding System in MAXqda' section. However, in this part these sub-codes are reformulated in order to demonstrate the relationship between *"teaching style"* and *"characteristics of the graduates"* more clearly.

The sub-codes of *"teaching style"* related with the other sub-codes are 'individual learning', 'stressing challenging/demanding content', 'authoritarian' and 'analytical/experimental'. The main code *"rules"* and its sub-code 'exclusion' are related with the other sub-codes. Moreover, main codes *"social activities"* and "stereotype engineering" have also relations with the other sub-codes.



Note: The numbers represent the frequency of the sub-codes in all 18 interviews.

Figure 5.11: Relationship between the sub-codes of "teaching style", "characteristics of graduates", "rules", "social activities" and "stereotype of engineering"

The sample quotes on the sub-codes taken from interviews expressed above are as follows:

The courses were strictly taught and there was no alternative for the students other than studying. So they did not have much time for social activities. In addition, the school, as an institution, did not offer them any social activity. Instead the students were encouraged to learn by doing. Moreover, individual learning, one of the teaching styles, did not encourage group-learning conditions. Henceforth, the combination of the lack of social activities offered by the school and individual learning caused students to be individualist in their work habits.

There was not any study groups in the school and that was mostly expressed as the lack of group working, i.e. the students were used to working by themselves. And they claim that this habit enabled them to do things and think for themselves without considering other people's help, advice or support in their current life. Sternberg (1997) calls them, as 'internal individuals' who are concerned with internal affairs- that is to say- these individuals turn inward. They tend to be introverted, task-oriented, aloof, and sometimes socially less aware. They like to work alone. Essentially, their preference is to apply their intelligence to things or ideas in isolation from other people (Sternberg, 1997, p.25).

> *Interviewee1: We did not have many activities apart from the courses. I mean, there was not a social life in the school. We were just concerned with our courses.*
> *Interviewee3: …actually, there were not many activities. The DSI is not a social place (…) As I said before, it was individualist (…) I started to become closer to my friends from the DSI after attending Bosphrous University.*
> *Interviewee17: The DSI educates individuals who always question and examine life and it educates individualists, those who can deal with life alone… They are the ones who prefer not to work in a group, but alone…*

The DSI always instructed the same demanding courses that would be taught at the universities. Therefore, students had to work very hard to pass their courses. They were required to pass without failing any courses; otherwise they would be suspended from school. All these requirements caused them be extremely careful in the courses, the outcome was 'perfectionist' as defined as following rules and taking careful evaluation in their current life.

> *Interviewee5:…I never attended some of the courses such as Math, Physics at the university since I had already studied them in the DSI.I never attended the introductory courses of engineering because I knew almost everything.*
> *Interviewee5: Many of our friends were forced to change to another school because of not achieving at the DSI; however, they were very successful in these other schools."*
> *Interviewee13:…a DSI graduate is a perfectionist in that he/she follows rules, is meticulous and does not take any risk."*

Authoritative, one of the teaching styles, and the 'rigid' rules of the school enabled students be disciplined in their current life. Particularly, most of the students were afraid of having to leave the school. Therefore, they had to study more. In other words, this requirement of the school caused them to always be prepared for the course, which could only be achieved by being disciplined all the time, according to the interviewees'

statements.

> *Interviewee 5: You could see that some of your friends had to leave the school every year. You were young and loved your friends and you should have been very careful of getting good grades since the school administration did not have any tolerance. You just had one chance."*

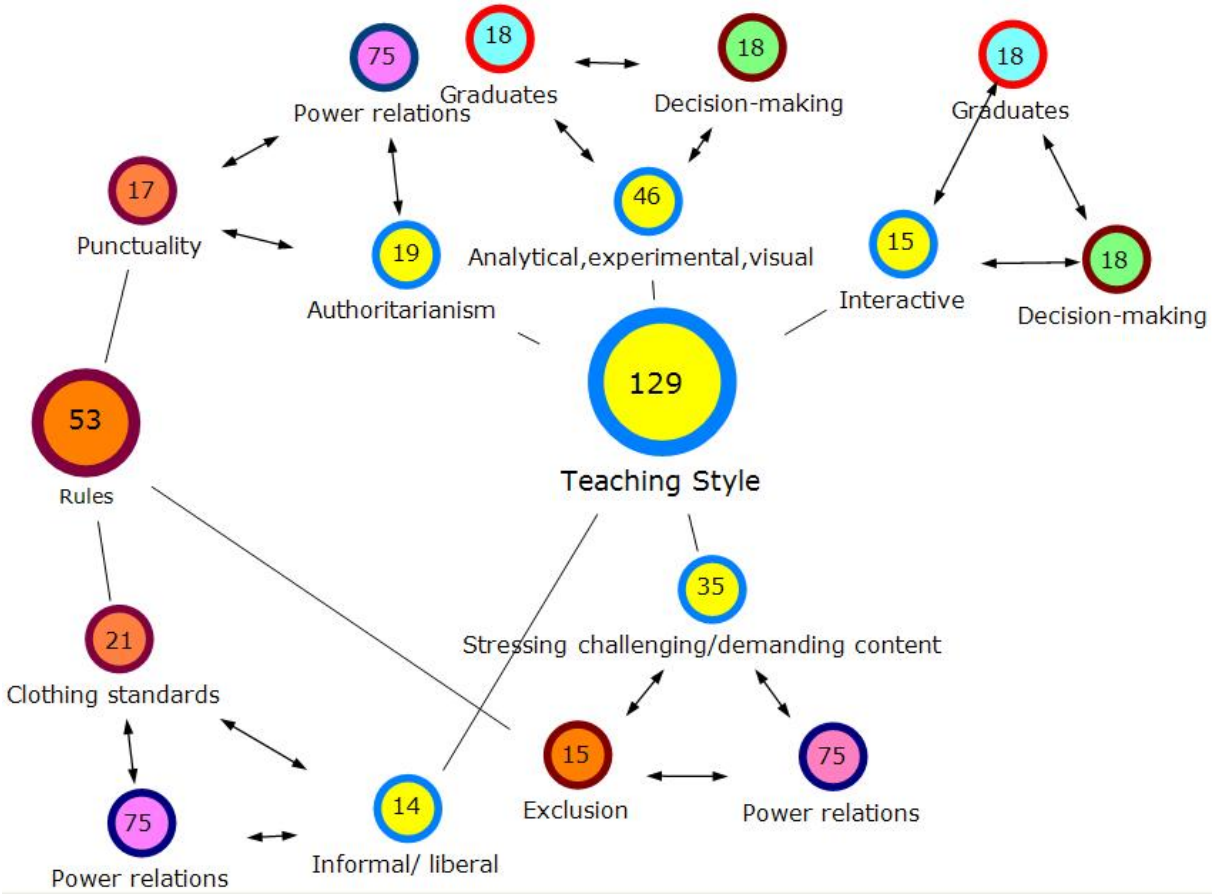
For interviewees, analytical, experimental and visual teaching, one of the teaching styles, prevents pupils from having to memorize material. Rather, it helped them to understand the logic behind the issue and to analyze the causes behind it. This gave the students the ability to think analytically in their current life. Moreover, according to the interviewees, the stereotype of engineering also requires analytical thinking. Having that kind of ability let students become engineers automatically. Within the framework of this thought, both of these have a mutual relation.

> *Interviewee8:…our analyzing ability developed in the DSI…*
> *Interviewee5: …an engineer is one who firstly analyzes the issue very carefully and then can make the true synthesis…" …when you study engineering, you think analytically…you could consider many things mathematically…*
> *Interviewee14: especially reading something and analyzing it has provided me a huge opportunity, since analytical thinking is very important in business life and we've probably got the ability not to accept something immediately, but also reading and examining the hidden part of it…*

V.7 Results within the Framework of Activity Theory

In this part, results will be given considering theory of Activity in chapter III. "*Teaching style*", one of the components of curriculum, has four sub-codes: 'liberal', 'authoritarianism', 'stressing challenging/demanding content', and 'interactive'. *"Rules"*, one of the main codes of the code system, have two sub-codes: 'clothing standards' and,' punctuality'.

After MAXqda analysis, it is found that there is a relation between 'authoritarianism', 'punctuality' and "power relations"; 'liberal', 'clothing standards', and "power relations" as shown in Figure 5.12.



Note: The numbers represent the frequency of the sub-codes in all 18 interviews.

Figure 5.12: Relationship between sub-codes of *"teaching style"*, *"rules"* and main code *"power relations"* within the framework of activity theory. How do all these connect to engineering? This question will be discussed in the following chapter (VI.6).

In the following pages, firstly, the number of interviewees in which the frequency of sub-codes was stated, given in circles above, was shown in Table 5.9 and 5.10. Then, the main code *"power relations"* is defined and its data is given. Lastly, the relation shown in Figure 5.12 is explained in detail.

Table 5.9: Frequency of sub-codes of *"teaching style"* and the number of interviews in which the sub-codes were attributed.

CODES	Frequency of sub-codes	Interviews
TEACHING STYLE	68	18
Stressing challenging/demanding content	35	14
Authoritarianism	19	8
Informal/liberal	14	8
Analytical, experimental, visual	46	18

Table 5.10: Frequency of sub-codes of *"teaching style"* and the number of interviews in which the sub-codes were attributed.

CODES	Frequency of sub-codes	Interviews
RULES	53	18
Punctuality	17	16
Clothing standards	21	17
Exclusion	15	11

"Power Relations": This main code refers to the hierarchy between students and teachers. Seventy-five frequency of sub-code attributed and found in 18 interviews.

Three different relations were shown in Figure 5.10. The following paragraphs clarify these relations and give some quotes from interviews to support the relation.

Authoritarianism, punctuality and power relations: It is examined through the interviews that authoritarianism, as a teaching style, punctuality, as a rule of the school and power relations have relations among each other. A pupil could only enter the classroom if he/she arrived on time. Otherwise, the teacher did not let him/her enter the class. In other words, being punctual is one of the primary rules of the school that was initially taught by both the school regulation and teachers.

> *Interviewee15: ...when you were late even for five minutes, for instance -I was sometimes late, when I missed the bus- you went to the administration to take a late-paper and it was immediately recorded in your school records.. You could not enter the class without it. The teachers only accepted you with a late-paper…*

According to the statement of the pupil above, he could not enter into the class without a late paper, when he was late. Here, tardiness within the context of authority and power relations was emphasized. Neither the school administration nor the teachers showed any tolerance to latecomers.

Liberality, clothing standards, and power relations: Through the examination of the interviews, is has been found that liberality, as a teaching style, clothing standards, as a rule of the school and power relations have relations among each other.

> *Interviewee2: ...clothes, but even German teachers knew how a foolish thing to wear a forma…*

Clothing standard is one of the requirements[30] of the schools in Turkey and each school has its own clothing style. According to the statement above, 'even German teachers knew' infers that German teachers did not approve of the clothing standard requirement. Stressing on 'German teachers' also shows that the pupils have a preconceived perception of German teachers, based on the teaching style given in their courses, namely, being liberal.

V.8 "Hidden Curriculum" as an Analytical Concept

The "hidden curriculum" relates to the definition "…those practices and outcomes of schooling, which, while not explicit in curriculum guides or school policy, nevertheless seem to be a regular and effective part of the school experience…" (Lewy, 1991). However, this study takes the following patterns, like *"teaching style"*, '*pedagogical authority'* and *"social activities"*, which are claimed, are more representative as a "hidden curriculum" in the school, because these patterns shape the characteristics which differentiates one school from another. They are not in the official curriculum but in "hidden curriculum" of the school. In other words, in this study, "hidden curriculum" is accepted as a concept that defines the distinctiveness of one school as compared to another school. Since, as it was stated in Chapter 1, the Turkish Educational system offers the same 'official' curriculum for all schools. Therefore, the 'distinctiveness' might come from something that is behind the official curriculum. Accordingly, the following three patterns shape the "hidden curriculum" of the school.

1. **Teaching Style:** Of the teaching style of both Turkish and German teachers, particularly the German teachers affected graduates' memories very much. They generally compared the teaching style of both groups of teachers and stated "*teaching style*" was more effective and allowed a difference in comparison with other schools' graduates. Figure 5.13 also shows the intersections between teaching style of teachers and the perceived distinctiveness of the school. According to this figure, 'informal/liberal', 'interactive/analytical', 'stressing challenging content' and 'authoritarian' "teaching styles" make the DSI different as compared with the other schools. Therefore, this study accepts "*teaching style*" as one of the hidden curriculums of the school.

[30] Regulation about the 'clothing standards' in the Schools of National Education Ministry is stated in Article 9- The students who are in the schools of Ministry are required to wear clean and harmony in their suits. No clothing is permitted that are not compatible with being student.
(**http://www.hukuki.net/kanun/83349.35.text.asp**)

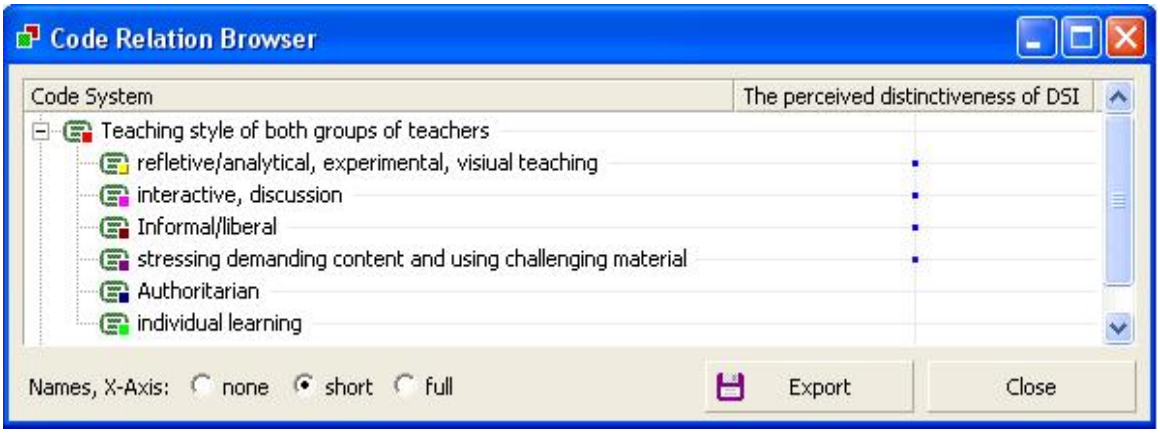


Figure 5.13: Overlaps between *"teaching style"* and *"perceived distinctiveness of the DSI"*.

> *Interview 5: "…those students from the other schools just read text books. And they didn't speak any foreign language and continued their educational life by only looking from a narrow perspective in a small world…I mean, the social activities of youth during that period in Turkey were playing misket (a kind of Turkish game) or fighting on the school's grounds etc. In contrast, our priorities were at a different level. we were in a different place. As I said, we discussed almost everything in the foreign language courses. For instance, we discussed male-female relationships in a German language course, as well as sexuality…. We also discussed sexuality…"*
> *Interview 3: "…I think there was a very open-minded education atmosphere under the circumstances of that era (…) I mean, you could debate on many issues, since many teachers were leftist. I mean, you could even debate on revolution…"*
> *Interview 5: "…I never attended some of the lectures such as Math, Physics at the university since I had already studied them in the DSI…"*
> *Interview 5: "…even when we were small, very serious and authoritative teachers taught our courses…"*

2. **Pedagogical Authority:** "Pedagogical authority" is the other hidden curriculum of the school that teachers exercise over students. It can be found in teachers' use of authoritative languages which may imply the teacher's attitude towards the students. Where does this 'pedagogical authority' come from? According to Figure 5.14 that shows the intersections among *'authoritarian'* the sub-codes of *"teaching style",* 'punctuality' sub-codes of "rules" and "power relations between teachers and students."

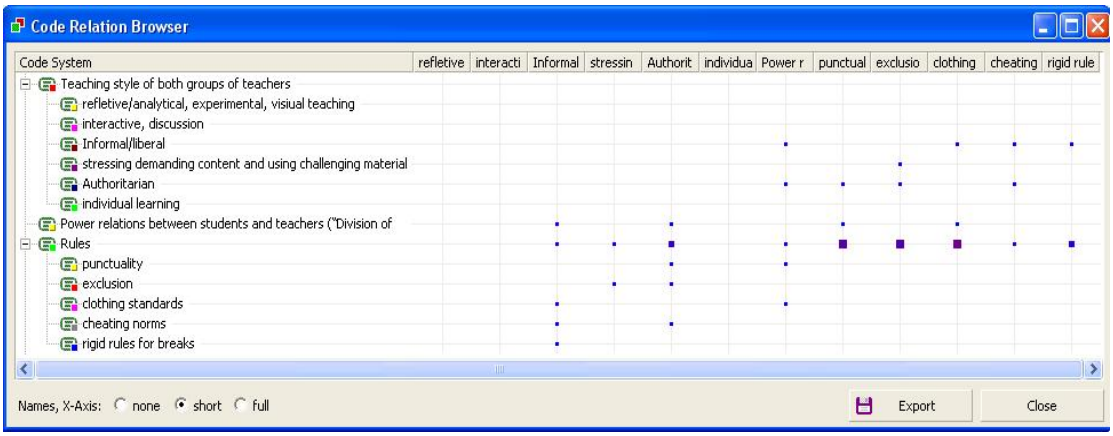


Figure 5.14: Overlaps in *"teaching style"*, *"rules"* and *"power relations"*.

> *Interview 1:* "…we were respectful…everybody had to get to their classroom on time and wait until the bell rang. The teacher came to class at the second bell. And everybody followed the rules."

3. Social Activities: "Social activities" is another aspect of hidden curriculum which is evident by this observation. The school did not encourage social activities for students. According to the statements of the graduates, there were not many social events in the DSI; therefore, most of them claimed that they just concentrated on their courses. Hence, when there were social activities, they were arranged by the pupils themselves and not by the school. The school did not offer them social activities, but instead enabled students to practice activities of their choice. Accordingly, Figure 5.15 shows the intersections among *"social activities"*, "the perceived distinctiveness of the DSI" and 'individualist'. According to the statement of interview2 and interview4, the absence of social activities in the DSI was one of the characteristics of the school that differentiate it from other schools. On the other hand, the school allowed them to make social activities individually, which caused them to be individualist in their jobs, careers.

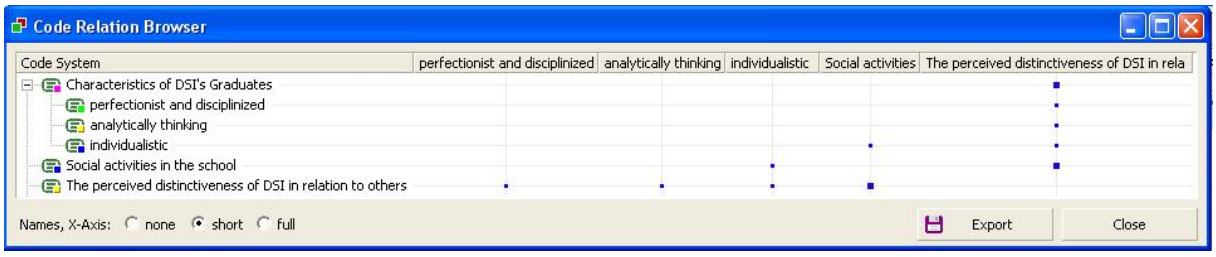


Figure 5.15: Overlaps in "*characteristics of graduates*", "*social activities*" and "*the perceived distinctiveness of the DSI*".

Interview 4: "We did not do anything apart from the courses. I mean, there was not a social life at school. We just dealt with our courses. I remember some of my friends from the other schools. They had social opportunities at their school; however, we did not have any"
Interview 2: "…We are individualists. We were not educated to work in a group or team. Be able to know how to be with the others. And the most important reason for mostly becoming engineers is this: Since engineers have to work autonomously in business life, in fact, there were few people who chose social sciences from our school, probably because we lacked in communication skills."

V.9 Career Choice

The category of "*career choice*" has four sub-codes: 'parents', 'stereotype of engineering', 'friends' and 'school'. As a result of the analysis, it is found that 'school' plays a significant role in graduates' career choice. Two groups, as 'school-dependent' and 'not school-dependent' were formed according to their causal attribution for career decision to school. Twelve of the interviewees stated the reason of their career choice as 'school' and six of them stated as 'not school' (as parents, friends and stereotype of engineering). Among these factors 'parents' is the most dominant one. Since four of six answered as 'parents' for their career choice reason. Moreover, the socio-economic background of graduates' 'parents' also supports this finding. Therefore, firstly the socio-economic background of parents will be given in this part (Table 5.11). Then, the results about both groups' perception about the school will be presented.

In Table 5.11, the parents' socioeconomic background is given. According to this table, 16 of the interviewee's parent speak at least one foreign language. Almost half of fathers can speak two languages, and German is one of them. This finding also supports the reason for DSI choice. Since in this part, it has been found that because the DSI is a 'bilingual' school, parents prefer this school for their children. While almost half of their fathers chose to study on engineering, half of their mothers finished high school. And it can therefore be said that the father is a major factor in their career choice as a role model.

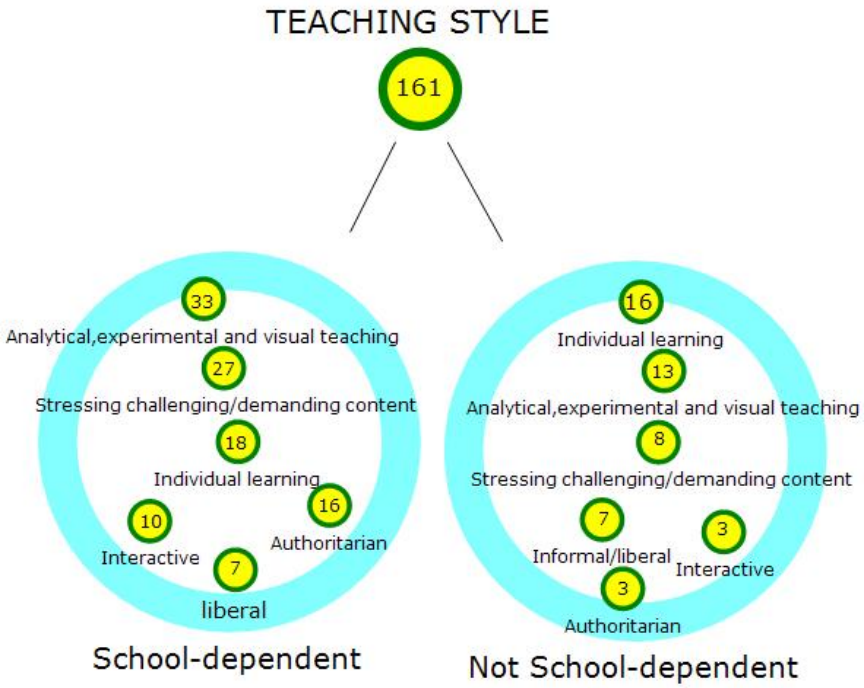
Although the main influencing factor of graduates' career choice has been found to be 'school', some interviewees (four of eighteen) stated that particularly parents influenced them. Therefore, it was needed to explore the influence of parents. These collected data is given in Table 5.11 as it is seen throughout this table that most parents can speak at least one foreign language. Moreover some of them can speak two foreign languages. Also, the German language is spoken the most, which demonstrates that parents prefer to send their children to a

German speaking school. Besides, when examining educational background of their parents, most parents have a bachelor degree and half of them studied engineering at the university. This finding also shows that parents played a significant role in their children's career choice.

Table 5.11 The socioeconomic background of graduates' parents

	FATHER		**MOTHER**	
	Foreign Language	**Education**	**Foreign Language**	**Education**
Interview1	French	Management in Belgium	French	High school
Interview2	English and German	Engineering in Germany	English and German	Engineering in Germany
Interview3	English	Engineering in Turkey	-	High school
Interview4	French	Engineering in Turkey	-	High school
Interview5	English	Journalistic	-	High school
Interview6	English	Management	French	French language and literature
Interview7	English	-	-	-
Interview8	-	Teacher	-	Primary school
Interview9	French and German	Management	French	Teacher's school
Interview10	English, German and French	Engineering in Germany	English	High school
Interview11	German and English	Engineering in Germany	English	High school
Interview12	English, French and German	Engineering in Turkey	English, French, German and Italian	Chemistry in Turkey
Interview13	German and English	Engineering in Germany	English and German	British High School
Interview14	English	Law	German	High school
Interview15	English and German	Literature	German	Law
Interview16	-	Management in Turkey	-	High school
Interview17	English, French, German	Engineering in Turkey	German	High school
Interview18	English	Political science	English	High school

As described previously in Chapter V.3, *"teaching style"* and *"rules"* are the main characteristics of DSI. So, in the following pages, these two main codes are re-examined in relation to these two groups (*'school-dependent'* and *'not school-dependent'*).



Note: The numbers represent the frequency of the sub-codes in all 18 interviews.

Figure 5.16: The influence of school in graduates' career choice and their description of "*teaching style*".

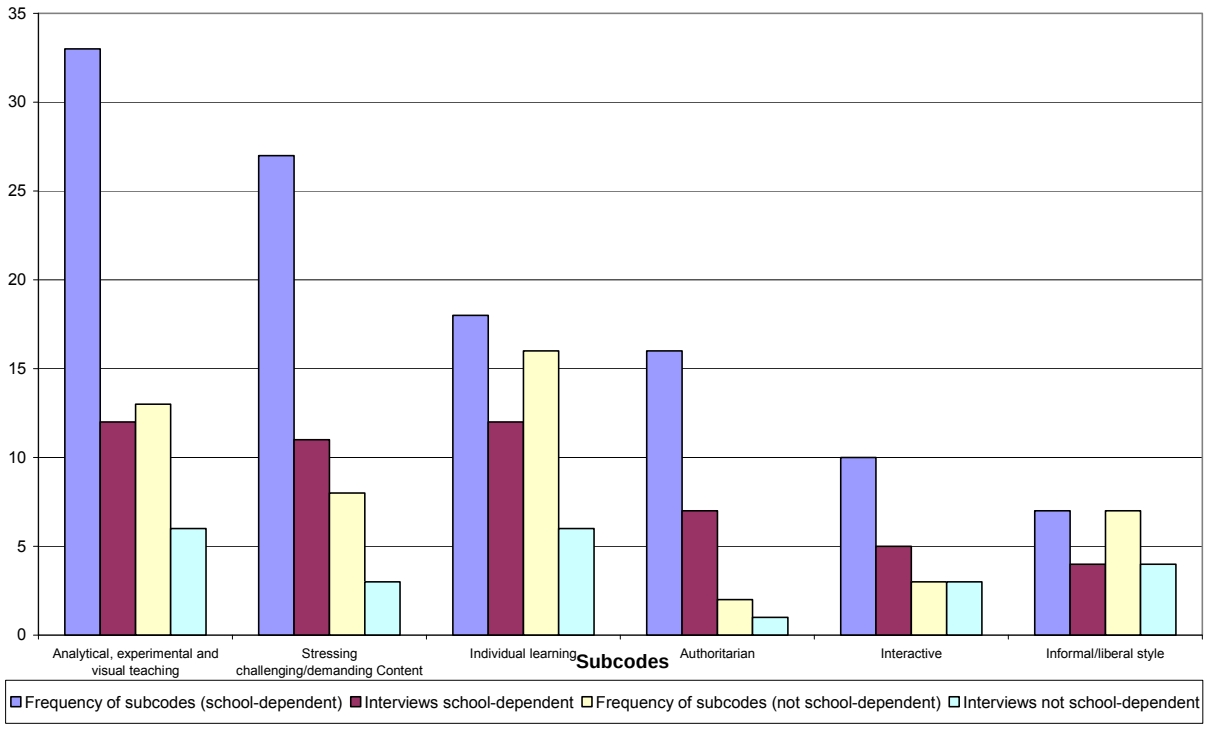
Figure 5.16 provides a summary of *"teaching style"* described by *'school-dependent'* and *'non school-dependent'* groups. Number of frequencies is written into circles of sub-codes in figure 5.14 and the sub-codes are shown in descending order of their frequency.

'Analytical, experimental and visual teaching', 'individual learning', 'stressing demanding content', 'authoritarian', 'interactive' and 'informal/liberal' are the *"teaching styles"* of teachers for the graduates whose career choice is *school-dependent.*

'Individual learning', 'analytical, experimental and visual teaching', 'stressing demanding content', 'informal/liberal', 'interactive' and 'authoritarian' are the *"teaching styles"* of teachers for the graduates whose career choice is *not school-dependent.*

Table 5.12: Frequency of the sub-codes of "*teaching style*" and number of interviews in which the sub-codes were attributed.

CODES	Frequency of sub-codes (school-dependent)	Interviews school-dependent	Frequency of sub-codes (not school-dependent)	Interviews not school-dependent
TEACHING STYLE	111	12	50	6
Analytical, experimental and visual teaching	33	12	13	6
Stressing challenging/demanding content	27	11	8	3
Individual learning	18	12	16	6
Authoritarian	16	7	3	1
Interactive	10	5	3	3
Informal/liberal style	7	4	7	4



Note: Total 111 sub-codes and 12 interviews (school-dependent); 50 sub-codes and 6 interviews (not-school dependent).

Figure 5.17: Frequency of sub-codes and number of interviews in which the sub-codes were attributed to *"teaching style"*.

Table 5.12 and Figure 5.17 show data of "*teaching style*" for "school-dependent" and "not school-dependent" groups. When these data are analyzed, it is seen that the most frequent sub-code is 'analytical, experimental and visual teaching' for "school-dependent"

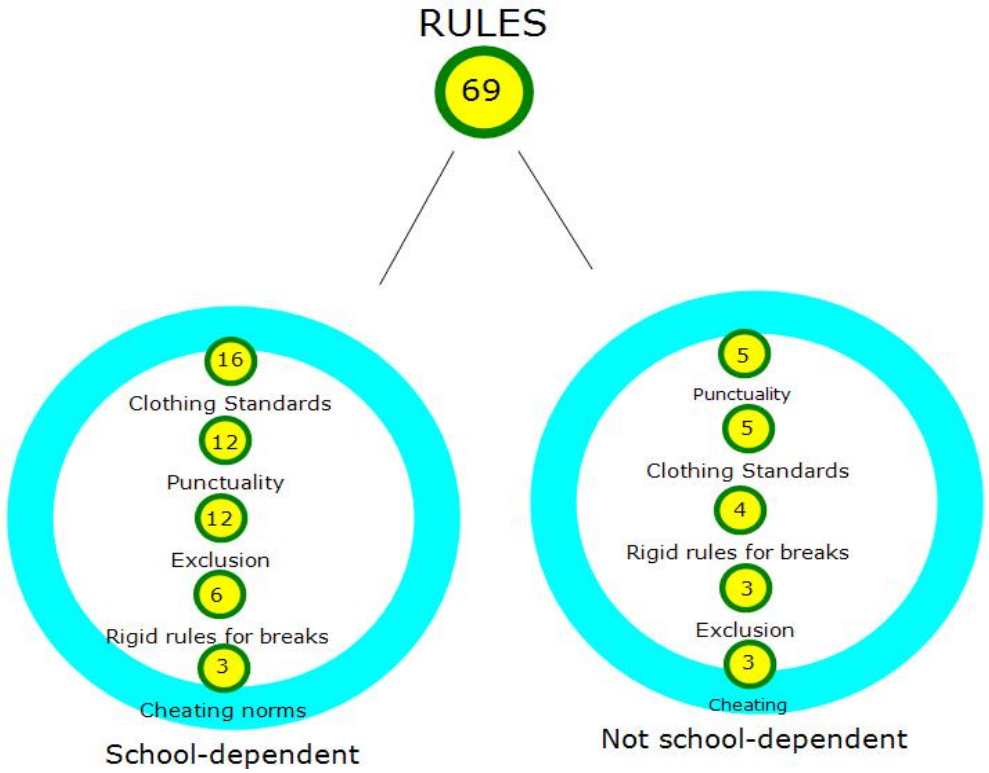
group. On the other hand, the most frequent one is 'individual learning' for "not school-dependent" group. In the same way, the less frequent ones are different. While the less one is 'informal/liberal' for "school-dependent", the less one is 'authoritarian' for "not school-dependent". Even though the less ones are not the same sub-codes for both groups, it should be noticed that second-less sub-code 'interactive' for both groups is the same.

Table 5.13: Relative frequencies of "*teaching style*" for each interview and mean proportion over all interviews.

	In1	In2	In3	In4	In5	In6	In7	In8	In9	In10	In11	In12	In13	In14	In15	In16	In17	In18	dpn	not
Individual Learning	0,83	0,17	0,20	0,50	0,11	0,15	0,17	0,27	0,50	0,10	0,40	0,40	0,11	0,14	0,10	0,20	0,40	0,29	0,27	0,30
Analytical, Experimental,Visual Teaching	0,00	0,25	0,30	0,25	0,21	0,15	0,50	0,45	0,25	0,60	0,40	0,20	0,33	0,14	0,25	0,30	0,40	0,14	0,30	0,26
Stressing Demanding Content	0,00	0,33	0,00	0,00	0,21	0,15	0,33	0,09	0,25	0,10	0,20	0,20	0,22	0,43	0,35	0,30	0,00	0,43	0,22	0,16
Informal/ Liberal	0,00	0,17	0,30	0,00	0,11	0,23	0,00	0,09	0,00	0,10	0,00	0,20	0,00	0,14	0,00	0,00	0,00	0,00	0,04	0,13
Interactive	0,00	0,00	0,00	0,25	0,16	0,15	0,00	0,00	0,00	0,10	0,00	0,00	0,11	0,14	0,00	0,10	0,20	0,00	0,05	0,10
Authoritarian	0,17	0,08	0,20	0,00	0,21	0,15	0,00	0,09	0,00	0,00	0,00	0,00	0,22	0,00	0,30	0,10	0,00	0,14	0,12	0,05

Note: Interview 2,3,4,12,14,17 are not school-dependent for "*teaching style*"

According to these results, both of the "*school-dependent* and *not school-dependent"* groups have almost the same frequencies when naming the first three sub-codes: 'analytical, experimental and visual teaching', 'individual learning', and 'stressing demanding content'. But, 'individual learning' has the highest mean proportion in the "not school-dependent" group while 'analytical, experimental and visual teaching' has the highest mean proportion in the "school-dependent" group.



Note: The numbers represent the frequency of the sub-codes in all 18 interviews.

Figure 5.18: The influence of school in graduates' career choice and their description of "*rules*"

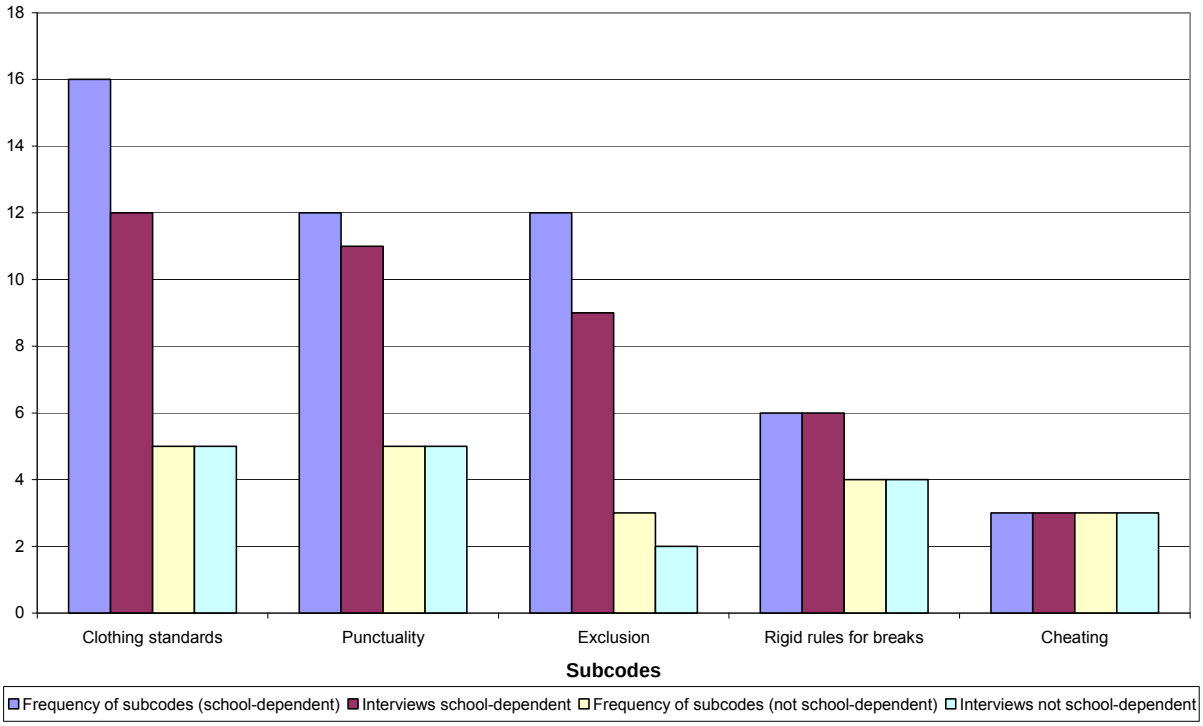
Figure 5.18 provides a summary of *"rules"* described by the "school-dependent" and "not school-dependent" group. The number of frequencies is written into circles of sub-codes in figure and the sub-codes are in descending order of frequency.

'Clothing standards', 'exclusion', 'punctuality', 'rigid rules for breaks' and 'cheating norms' are the *"rules"* of school for the graduates whose career choice is *school-dependent.*

'Clothing standards', 'punctuality', 'exclusion', 'rigid rules for breaks' and 'cheating norms' are the "rules" of school for the graduates whose career choice is *not school-dependent.*

Table 5.14: Frequency of the sub-codes of *"rules"* and the number of interviews in which the sub-codes were attributed.

CODES	Frequency of sub-codes (school-dependent)	Interviews school-dependent	Frequency of sub-codes (not school-dependent)	Interviews not school-dependent
RULES	49	12	20	6
Clothing standards	16	12	5	5
Punctuality	12	11	5	5
Exclusion	12	9	3	2
Rigid rules for breaks	6	6	4	4
Cheating	3	3	3	3



Note: Total of 49 sub-codes and 12 interviews (school-dependent); 20 sub-codes and 6 interviews (not school-dependent).

Figure 5.19: Frequency of sub-codes and the number of interviews in which the sub-codes were attributed to *"rules"*.

Table 5.14 and Figure 5.19 show data of "*rules*" for the "school-dependent" and "not school-dependent" group. When these data are analyzed, it is seen that the most frequent sub-code for both groups is the same ('clothing standards'), as is the less frequent one (cheating). When the over all order is considered, just 'exclusion' and 'rigid rules for breaks' are switched.

Table 5.15: Relative frequencies of *"rules"* for each interview and mean proportion over all interviews.

	In1	In2	In3	In4	In5	In6	In7	In8	In9	In10	In11	In12	In13	In14	In15	In16	In17	In18	dpn	not
Punctuality	0,25	0,33	0,20	0,00	0,17	0,20	0,25	0,33	0,50	0,17	0,25	0,33	0,33	0,25	0,20	0,00	0,33	0,33	0,25	0,24
Exclusion	0,00	0,00	0,20	0,00	0,17	0,40	0,25	0,33	0,00	0,33	0,00	0,00	0,17	0,50	0,60	0,50	0,00	0,33	0,26	0,12
Clothing Standards	0,25	0,67	0,20	1,00	0,33	0,40	0,25	0,33	0,50	0,17	0,50	0,33	0,17	0,00	0,20	0,50	0,33	0,33	0,33	0,42
Cheating Norms	0,25	0,00	0,20	0,00	0,17	0,00	0,25	0,00	0,00	0,17	0,00	0,00	0,00	0,25	0,00	0,00	0,00	0,00	0,07	0,08
Rigid rules for breaks	0,25	0,00	0,20	0,00	0,17	0,00	0,00	0,00	0,00	0,17	0,25	0,33	0,33	0,00	0,00	0,00	0,33	0,00	0,10	0,14

Note: Interview 2,3,4,12,14,17 are "not school-dependent" for *"rules"*.

According to these results, the first and last sub-codes for both *school-dependent* and *not school-dependent* groups are the same: 'clothing standards', 'cheating norms'. It should be noted that Table 5.15 has also shown the same characteristics, but just *'exclusion'* and 'rigid rules for breaks' have been switched.

The obtained data by interviews and their evaluations have been given in this chapter. These are classified under different topics. In each topic, comparisons are made to evaluate these data. As a result of this attempt, important points have been noted and these will be analyzed in detail at next the next chapter.

CHAPTER VI. INTERPRETATION

Career choice is a complex phenomenon involving a variety of psychological and sociological factors, such as parents' background, individual characteristics as well as environmental conditions. While many theories have been proposed to explain these factors, there is no single set of factors, which fully explains the process. Much of career decision-making evolves from different factors (e.g., school, personality, parents' background). Although it is mostly situational and an outcome of the specific circumstances, the influence of the school is an undeniably significant and inevitable one.

The purpose of this study is to find out how socialization at the DSI influences its graduates' career choice (specifically: why this school may have a special influence on the choice of engineering as a career). Key factors influencing career choice have been selected and evaluated by analyzing the data taken from the interviews.

This study is especially useful for those engaged in efforts to define the educational factors on career choice and those who would like to provide an exclusive high school education. The following section interprets the data on these factors, which were presented in the previous chapter.

This chapter is divided into two sections. In the first section, firstly, 'teaching styles' and 'rules', which form the characteristics of the school, will be interpreted. This will be followed by an interpretation of the characteristics of the graduates and thirdly, the relationship between them and lastly, the relationship within the framework of the activity theory. The second section of this chapter offers a narrative description of an interview, which is typical of the general trend of the results.

VI.1 The role of *"teaching styles"*

"Teaching style" of teachers and *"rules"* are mentioned as characteristics of DSI in Chapter V. 'Teaching style' is comprised of 'informal/liberal', 'analytical, experimental, and visual teaching', 'non-directive/interactive/participatory', 'stressing demanding/ challenging content and using challenging material' as well as 'directive/authoritarian'.

a) *'Analytical, experimental and visual teaching'* is the most often mentioned characteristic of the DSI according to the results in Chapter V (Figure 4). All interviewees indicated somehow that there is 'analytical, experimental and visual teaching' style in the DSI (Table 1).

Accordingly, the interviewer asks how science courses affected analyzing ability. And one of the interviewee answers with an example. He says his teacher taught them how air is conductive by means of an experiment of putting a jar on an alarming clock when the air in the jar is absorbed by a motor, a vacuum results which causes the *noise of the* alarm clock to decrease. He asks if there could be a better teaching style. He understood the conduction of air by an experiment and he claimed that he would never forget it.

> *Interviewee8: ...our teacher taught us how air is conductive with an experiment. He put a jar on an alarm clock, and then it absorbs the air in the jar by a motor. And you see and hear that the alarm clock's voice starts to decrease. Can there be a better teaching style than this one? You understood the conductive of air by an experiment and you would never forget it.*

This statement describes an experiment in the course that enables students to understand a subject and remember it even 30 years later. The interviewee says 'our teacher' instead of 'my teacher' and 'you', which implies that the claim is not only for him but also all students. In other words, he claims that the related case was relevant for all students. He is also proud of such a teaching style by asking if there could be a better teaching style than this one. He claims that experimental, visual teaching style allows them to elaborate the subject.

b) *'Stressing on challenging/demanding content'* is the second ranking among the mentioned characteristic of the DSI, according to the findings in Chapter V (Figure 4). It means that the students had to study very much, since the school was difficult. The interviewer asks what kind of differences he noticed between his university courses and those of the DSI**.** Interviewee 1 said that he was well prepared for university as compared to the other students because the natural science courses had been taught in the DSI and he already understood them when entering university.

> *Interviewee1: ...Darmstadt is in Germany. But as soon as the lectures started in the university, I understood how DSI was a good school. Because we had already learned the material in Math and Physics when we were in DSI, it was not difficult at the beginning for me.*

In accordance with the statement above, there is the perception that DSI was a difficult school that instructed on a high level. Subsequently, the graduate indicated that even when he attended Darmstadt University in Germany; he did not have difficulty with the lectures,

especially in the first years of university, as compared to the other students. This is because he had already studied the subjects at the DSI. Moreover, he was pleased to notice that the DSI was a good school in terms of its instructive and demanding content that enabled them to have an easy university life even when they were in Germany. Namely, although he studied with German students, he had fewer problems with the learning material than the Germans in a German university and he was well ahead of the others since he had already studied the subjects. As understood from this statement, the DSI instructed at such a high level that its graduates did not have so many difficulties with the lectures even when they were abroad to study at universities.

c) *'Individual learning'* is the third in the ranking, of the most mentioned characteristic of the school, as indicated in the previous chapter (Figure 5.4). In the in light of the 18 interviews, one notices the reference to 'individual studying' rather than collective studying. The interviewer asks if there is any group work at the DSI. The interviewee says that he does not remember. He adds that his friends might also say that the DSI lacks group work, which is one of its distinctive characteristics of other schools. Because they were used to individualistic work habits, they would not be able to set up alumni meetings.

> *Interview8: Not too much. I don't remember. Maybe our other friends also told that the DSI lacked such group work. And this is also the difference of the DSI and its graduates to the other schools and their graduates. We were more individualistic so we could not come together that often as alumni.*

As understood from the statement above, there was no group work at the DSI. Eighteen interviewees claimed that 'individual learning' is common at the DSI. One of the 18 interviewees, interviewee8, also says that not only he, but also his friends say that one of the biggest deficiencies of the DSI is not having group work. They are not pleased about this characteristic of the school and this even influenced their social relationships after having left the school. For instance, they have alumni and although they have some annual parties for coming together, they do meet as much as other schools' alumni. And currently, they claim that the reason of such deficits comes from the individual learning aspect of the DSI.

d) *'Directive/authoritarian'* style is the fourth in the ranking mentioned as characteristic of the school, indicated in the previous chapter (Figure 5.4). According to the interviews, teachers are generally authoritative during the courses. The interviewer asks what kind of differences he

notices between Turkish and German teachers in their teaching styles. The interviewee says that Germans were disciplined and the teachers also disciplined their students. In contrast to Turkish teachers they gave extra work for making mistakes.

> *Interviewee15: : The German teachers were much disciplined. Some of them gave punishments that Turkish teachers did not give. For example, if one made a mistake, the teacher told him/her to write a German word for 100 or even 1,000 times. And we also wrote them for pages because we did not have any alternative.*

As indicated above, some of the German teachers were authoritative in the classroom. In other words, they were strict and alert in case any mistake was made. For instance, German teachers in the German course strive to teach the German language thoroughly; therefore they did not tolerate any kind of mistake. Furthermore, when the students start to attend DSI, they are firstly required to learn German, so they have to attend a preparatory class. Therefore, German teachers are the first teachers the students meet, which means that they encounter the 'authoritarian' *'teaching style'* at first. In contrast, the Turkish teachers only start to instruct after the preparatory class for social courses are completed. Furthermore, their hours per week are not as much as the science courses which are instructed by German teachers. Therefore, their influence on the students did not leave such am impact as the German teachers.

e) *'Informal/liberal'* is the fifth in the ranking mentioned as characteristic of the school, indicated in the previous chapter (Figure 5.4). For the interviewees, particularly German teachers are liberal as compared to Turkish teachers. German teachers taught them to think freely and how to present their ideas in a systematic manner. That is, they helped them to formulate their ideas, present them and reach a result. In contrast, such attempts were not made in the Turkish courses.

> *Interviewee6: ... In fact, firstly German teachers taught us to think liberally. I think this is very important. Secondly, they taught how to present our opinions in a systematic way (...) I mean they helped us to formulate our ideas, present ourselves and reach to a conclusion. On the other side, unfortunately, there were not such things in the Turkish courses and please do not tell it to anybody (laughs).*

According to the Interviewee6's statement, the students were free to express their ideas during German courses because German teachers taught them to think liberally. On the other hand, she was not afraid to mention that such a 'teaching style' was lacking in the

Turkish courses, even though she hesitated to do so. Her reluctance to mention such a difference between the Turkish and German teachers was caused by her wish to experience such a 'teaching style' in the Turkish courses as well.

f) *'Non-directive/interactive/participatory'* is the sixth most frequently mentioned characteristic of the school, which means that students had the opportunity to discuss topics during the course. Namely, the courses were not instructed just by the teachers but also with the active participation of the students. In accordance with this description, the interviewer asked what kind of differences there were between Turkish and German teachers in terms of their 'teaching style'. By encouraging the active participation of the students, the German teachers' authoritative role diminished, whereby the Turkish teachers' 'teaching style' and behavior retained this characteristic.

> *Interviewee16: ... German teachers taught the course more interactively. Students participated in the course. German teachers were not like the teachers in the sense of being authoritative but charged just for that job. I mean, the Turkish teachers made us feel the hierarchy between teachers and students that they were teachers. Their teaching style and behavior were like dictating something. Germans were not softer by the way, I don't want to explain it by saying "softer" (laughs) what I mean by softer is that they demanded us to participate in the course.*

As understood from the statement above, German teachers challenged the students to participate in courses. Namely, they preferred to perform the courses student-oriented rather than teacher-oriented. On the other side, Turkish courses were teacher-oriented and teachers would prefer to dictate their material without taking students' ideas or letting them participate in the courses interactively.

VI.2 The role of '*school rules*'

'Rules' are comprised of *'clothing standards'*, *'punctuality'*, *'exclusion'*, *'cheating norms'*, and *'rigid rules for breaks'*. All of the characteristics of the school will be analyzed respectively. And the following questions will be answered: "what do each of these characteristics mean for the graduates?" "How do they define them?"

a) *'Clothing standards'* is the most often mentioned rule of the school according to the results in chapter V (Figure 5.7). Almost all interviewees deliberately mentioned, "they could wear

whatever they wanted" (Interviewee11; page, 3) or "the clothing standards were not as strict as compared to the other schools." (Interviewee 1; page, 4) Even though the interviewer did not ask such a question directly, they would like to express it since this qualification contributes to the distinctive characteristics of the DSI. The other schools do not have such flexibility on 'clothing standards'. They had a specified clothing standard and all students had to wear it. However, the DSI was different, 'clothing standards' were no importance to the school administration. The most significant thing for the school was to have successful students, so they were happy to disregard something like 'clothing standards' The interviewee11's father had attended a French school and the interviewer asked her to compare it to DSI. Moreover, her father's school impressed her, since physical appearance is one of the most significant aspects of his school. On the contrary, she thinks her school was not and she says that they even did not wear standardized clothes in DSI. They attended the school wearing short skirts, blue jeans.

> *Interviewee11: ... we did not even have to wear any uniform. We attended school wearing short skirts and blue jeans. We lived in a separate world.*

As understood from the statement above, students perceive 'clothing standards' as a distinctive characteristic of DSI. Also, they could wear what they wanted and it is interpreted as showing the school's liberal attitude. Therefore, they claimed that they lived in a world without pressure as far as physical appearance was concerned. 'A separate world' means here that students studied in such a place that had its own rules as compared to the other schools which makes the DSI unique in this regard. This characteristic of the school is important because it indicates that physical appearance is not as important as in the other schools. However, rules concerning courses are significant and that will be examined in the following paragraphs.

b) *'Punctuality'* is the second most frequently mentioned school rule. It refers to the rule that all students had to be present in the classroom before the course started. Otherwise, there were some obligations such as taking a permission paper from the administration which they had to do before entering the classroom. The interviewer asked what happened when somebody came to the class late. The interviewee3 answered that the school administration wrote his/her name on the latecomers' list and they also informed his/her parents.

Interviewee 3: Firstly, school administration wrote your name on the latecomers' list at the entrance and they also informed your parents.

As Interviewee3 indicated above, 'punctuality' is one of the disciplinary requirements of the DSI. In other words, being late is not acceptable at the school. The school administration was very vigilant in that it not only wrote a person's name into latecomers' list but also informed the parents. Therefore, the students could not go anywhere apart from the school during school time since they knew that their parents would be informed. Moreover, they were also careful to arrive at school on time in order not to be on the latecomers' list because they knew that they would be punished if they were not punctual. This quality of the school let them organize their timetable and be in class on time. In other words, 'punctuality' is important because it establishes the authority of teacher's right from the beginning of the course.

c) *'Exclusion'* is the third school rule that characterizes the school. In light of the interviews, it means that there are some conditions under which students could be expelled from the school; the most important one is not achieving the grade level to continue lessons. In that case, they are expelled. The interview6 says that some of her friends had to leave the school because of not fulfilling the requirements of the school. She also added that they had to be careful with regard to their marks since the school administration just gave one chance.

Interviewee6: ...You observed that some of your friends were required to leave the school every year. You were young and you loved your friends, but you had to be careful as far as your grades were concerned since the school administration had no tolerance. You had just one chance.

As understood from the statement of Interviewee6, the school administration was quite strict on achievement. If the students had not fulfilled the requirements of good grades, they would promptly have to leave the school. And the students who remained took note of this kind of consequence and that made them more diligent to get good grades. Therefore, they had to show more effort not to be expelled in the future.

'Exclusion' is one of the distinctive characteristics of the school because other school administrations give at least one chance to pass the class. In other words, they do not immediately expell their students when the students cannot achieve a passing grade for the course(s). However, the DSI's administration prefers to accept those students who can achieve

the courses without failing. This results in a 'top quality' class comprised of those who are able to achieve the requirements and finish the school.

d) *'Rigid rules for breaks'* is the fourth school rule. There are some rigid rules in the breaks such as not running in the school corridors, girls and boys were in separate grounds until the age of 14. When the interviewer asked how a typical day was in the DSI, the interviewee also started to tell about break times. And he said that girls and boys were in separate grounds until the age of 14. On the other side, Interviewee13 enumerated some rules and he mentioned that it was forbidden to run in the corridors and shout while entering the class. At first, she was warned, but if she continued, she would be sanctioned.

> *Interviewee9: Girls and boys had separate school grounds until the age of 14. Then we were in the same school ground.*
> *Interviewee13: And it was also prohibited to run in the corridors and shout while entering the class. He/she was warned and if he/she continued then he/she would be sanctioned.*

As understood from the statement above, there was a school regulation that girls and boys could not be in the same school ground until high school. The girls and boys played in different places and it was prohibited to enter the opposite side when they were in secondary school. On the other hand, other interviewee claimed that they could not do what they wanted. Students would be warned by the teachers. If they did not follow the rules, they would be sanctioned. These situations show that there were strict physical limitations at the school that reminded students that there were rules. These rules and regulations were automatically remembered and obeyed because of everyday exposure to them.

e) *'Cheating norms'* is the fifth and last school rule. If anyone cheats in an exam, he/she is sanctioned. The interviewer asked what the other punishments were and Interviewee 14 replied that there had not been any other punishments, but after a silence went on to say that if one cheated, his or her name was noted and written in the "Klassenbuch".

> *Interviewee14: There were not any other punishments (...) if one cheats, his/her paper was taken, the person was warned and his/her name was written in the Klassenbuch.*

As indicated above, if anyone cheated then his/her paper was taken and the name would be written in the class book. But cheating was not very common in the school since

Interviewee14 initially denied that there had been any punishment at the school but, after waiting for a while admitted that there was. However, the punishment about cheating in the DSI was not as serious as in other schools. That shows when discipline is enforced by small sanctions; an authority is established in the school. In addition to this, the students tend to obey this rule. In other words, this rule does not just come from the authority of the school but also, the students displayed an inner motivation not to cheat.

VI.1.2.1 Summary of characteristics of the DSI

To sum up, the interviewees characterized the school by its teaching style and its rules. These properties of the school were mentioned the most. According to the interviewees' perception, the main features of the school were: the courses (especially science courses) were instructed analytically and visually by German teachers and also taught interactively. The students always had to participate in discussions. German teachers made students explain their ideas on the topic(s) during the course. That means the courses were generally instructed on the basis of student orientation. Building on this, German teachers had a liberal teaching style. On the other hand, they were also authoritarian when teaching the course. They placed great importance in following through with the learning material and were therefore not flexible for students who liked to discuss what was being learned. On the other hand, German teachers were not strict considering other issues apart from the courses. As understood from the perceptions of interviewees, the school administration placed great importance to 'teaching style' that came from the teachers and 'rules' that came from the school administration which were related to each other when the courses were being taught.

VI.3 The characteristics of the graduates

The graduates studied at the DSI between the ages of 12 to 18 years which are, in turn, important years for character formation. In the context of this, 'perfectionist and disciplined', 'analytical thinking' and 'individualistic' are the *'characteristics of graduates'* as indicated in chapter V, Figure 5.7. In this part, these characteristics will be analyzed according to the results in the preceding chapter.

a) *'Perfectionist and disciplined'* is the most important characteristic of the graduates (Figure 5.7). The interviewees admitted that they got an advanced education when they were at the DSI

as compared to other schools. When the interviewer asked what kind of differences there were between the DSI and the other schools, Interviewee16 says that the other schools were easier than the DSI. And he thought that there was more discipline at the DSI and a better education was received as compared to the other foreign schools. Moreover, he claimed if anyone finishes the DSI, he/she has many opportunities as far as the choice for university is concerned.

> *Interviewee16: The other schools were easier than ours. I think we were more disciplined, we got a really good education and I always think that we excelled as compared to the other foreign schools. I don't think that there can be a more difficult school than the DSI in Turkey. If you finish the DSI, you can do anything.*

Discipline is one of the requirements for finishing a difficult school. If you are not disciplined, you cannot finish it. Therefore, you should be 'disciplined'. Moreover, being 'disciplined' brings perfectionism about since when you are disciplined, you try to do your best. Interviewee16 mentioned how the DSI is difficult and the one who graduates from it can do anything because of showing great effort. Therefore, they had to be 'disciplined' and 'perfectionist' in their studies otherwise; they knew that they could not finish it.

b) *'Analytical thinking'* is the second most often mentioned characteristic of the graduates (Figure 5.7). According to the interviewees, it means 'elaborating' something that enables them to consider an event analytically. The interviewer asks an interviewee how the DSI influenced him. He replied that the ability to read and then analyze something provided him with a huge opportunity in life. He added after a silence that analytical thinking is very important in business life and they developed the ability not to accept things immediately but to think what might lie behind it, to examine its different meanings.

> *Interviewee15: Well, (…) especially reading something and analyzing it has provided me a huge opportunity, since (…) analytical thinking is very important in business life (.) and we've probably got the ability not to accept something immediately; but also reading and examining the hidden part of it (…)*

This expression says that they learned 'analytical thinking' at school while they were not only reading something but also analyzing it. And this 'learning style' became a 'working style' in the business life since, at the same time, they learned how to approach an issue and how to elaborate on it. Moreover, they learned that everything should be well thought out

before being accepted. As each issue might have a hidden part it should be ramified in order to avoid negative consequences.

c) *'Individualistic'* is the third most mentioned characteristic of the graduates. In the light of the interviews, the graduates define it as being alone during his/her school life. In other words, he/she describes a lack of group work. When Interviewee2 was asked by the interviewer about group work, he replies that there was none and added that this was the biggest deficiency of the DSI. Because each student worked alone and the framework for group work was not provided by the teachers, it was considered to be individualistic.

> *Interviewee2: No, there was not. The biggest deficiency of the DSI is that. Each person is alone in his/her work and they did not give any course on working in a team. It was totally individual.*

This expression says that there is not any group working in the DSI so the students learn to work individually and each study for his/her success. So they perceive individualism as one of the main characteristics of students at DSI.

VI.3.1 Summary of characteristics of graduates

As a result, according to the perception of the graduates, the students at DSI are characterized as perfectionist and disciplined, analytically thinking and individualistic. Being perfectionist and disciplined in school life is also one of the requirements of finishing a difficult school. Therefore, the students at DSI learned to develop both of these characteristics. Also, being able to apply analytical thinking is often perceived by students as one of the most difficult demands made on them. However, it is understood that students at DSI were required to practice this mental activity. Lastly, individualism is the complementary qualification of both 'perfectionist and disciplined' and 'analytically thinking'.

VI.4 The relationship between the general sub-codes

In this part, the general sub-code relationship in Chapter V, Figure 5.9 will be interpreted. As stated in chapter V, this figure illustrates the relationship between 'characteristics of the DSI' (mentioned as, perfectionist, disciplined, analytically thinking and individualistic), *"teaching style"* (mentioned as individual learning, stressing on

challenging/demanding content, authoritarian, analytical, experimental and visual teaching), *"rules"* (exclusion) 'social activities' and 'stereotype of engineering'.

As indicated in Figure 5.11, 'individualist' is one of the characteristics of the graduates. On the other side, 'individual learning' is one of the 'teaching styles'. And there were not many 'social activities' in the school. When the interviewee3 is asked by the interviewer about group work he replies that there was not group work and claimed that this was a deficiency of the DSI. He thought American College's graduates were more successful in-group work so he was sure that the general characteristic of the DSI's graduates is to be isolated, to be on their own.

> *Interviewee3: (...) no, there was not. The DSI fostered working individually. This was lacking.. I think Robert College's graduates are always more successful than us in group working (...) therefore, I really know that the general characteristic of the DSI's graduates is to work individually.*

Interviewee3's statement shows that 'individual learning' and the lack of *"social activities"* contribute to graduates being 'individualist'. (See Figure 5.11)

'Perfectionist' is also one of the characteristics of the graduates. On the other side, *'stressing on challenging/demanding content'* is typical *'teaching style'*. And *'exclusion'* is also one of the *"rules"*. The interviewer asks about the Interviewee7's opinion on differences between his university and the DSI. Interviewee7 answers that the DSI was a difficult school in which they studied many advanced courses. Therefore, the university was easier for them after having attended the school. Moreover, Interviewee 6 said that two of her friends were fed up with studying at the DSI since it was very difficult and there were also some students who had to leave the school. There was such a joke that as soon as the classes grew, students started to be screened out of the school and the school ground became more suitable to play football. Two of her friends later attended one of the prominent universities of Turkey (Bosphrous University) and they became successful at both high school and university.

> *Interviewee7: ... Most of them had many difficulties (.) the DSI was a really difficult school and we studied many advanced courses therefore, the university was easier for us after the school.*
> *Interviewee6: Two of my girl friends were fed up with studying in the DSI and also there were some who were expelld from the school. Moreover, there were some jokes that as soon as the classes grew, students started to be expelld from the school and the school ground became more suitable to play football. Two of my friends later*

attended to Bosphrous University and they were very successful in both high school and university.

As seen from the statements of interviewees, DSI's students were instructed at such a high level that they were able to understand the lectures at the university with the knowledge gained at the DSI. It is also mentioned that it was a "rigid" school and some of their friends were fed up studying at the school and consequently changed schools. And they became successful in both high school and university. There were also others who had to leave the school because of not achieving the goal of the class. In light of this statement, it is easily understood that the DSI was a "rigid" school and the students always had to take care not to make any mistakes. They had to study more and learn the subject perfectly. Since they knew that if they did not do so they would soon have to leave the school. Therefore, they had to be very hardworking and ambitious with their studies. 'Stressing demanding content' and 'exclusion' are the external factors for the students, which help them to form an internal qualification in their future life as 'perfectionist'.

'Analytical, experimental and visual teaching' is another aspect of the *"teaching style"* at the DSI. As indicated previously, most interviewees mentioned this characteristic of the school. They further claimed that they had learned to think thoroughly which might have contributed to their career choice of studying engineering at university. This is because they think that 'analytical thinking' is necessary in engineering. Accordingly, Interviewee 3 compared the Turkish and Germans method and said that when Germans store things, they put them in a systematic order so that they can easily be found. On the other hand, in the Turkish system, it is not possible to find stored items because they were not stored in a systematic way. Interviewee15 and 5 were asked by the interviewer about their opinions on the importance of engineering. They replied that engineering is good in promoting analytical thinking, namely, to solve a problem, one must search for its causes; show the reasons and results of it.

Interviewee3: ... when you store things using the German method, you place names on the shelves of stocks, as well as to the rooms of stocks and you further classify A, B, C, D parts; therefore, you store everything in your mind according to this inventory storing system. So you can find everything easily. On the other side, in the Turkish system all items are sent randomly ... they are not given to you in a systematical way (...) you don't know where they were stored. They are not regular; however, the others are stored systematically...

> *Interviewee15: …engineering is good in promoting analytical thinking. I mean to solve a problem, one must find the cause; show the reason for it and the results of it.*

As understood from Interviewee15's statement that *'analytical thinking'* is linked to the *'stereotype of engineering'* and *'analytical, experimental and visual teaching'* promotes *'analytical thinking'*.

'Analytical, experimental and visual teaching', one aspect of the *'teaching style'* at the DSI, develops students' analytical thinking, which is also the requirement for obtaining a higher position, as in engineering. As in the statement of Interviewee 15, German instruction method bases itself on analytical method that teaches students how to classify and organize what they have learned. All information is learned and stocked in order. Therefore, they finished the DSI with *'analytical thinking'*. Accordingly, most of them prefer to study engineering at university in which they could use their analytical thinking ability. In other words, the characteristic 'analytical thinking' is trained at school and this encouraged the students to study engineering later on.

VI.5 Interpretation within the framework of activity theory: Career choice seen within an activity system

Drawing on activity theory, the career choice process is viewed as an activity system. An activity system is comprised of subjects, objects, mediating artifacts (tools), rules, community and division of labor. It aims to look across the multiple settings of activity system - including teaching style (as a hidden curriculum), rules, and power relations - to understand how those components of the school affected students' career choice and why those students chose engineering. How the stated components affected career choice, as engineering will be discussed in VI.6.

Individual activity settings have unique cultural and historical contexts that influence the motives and guide the actions of their subjects towards an object. These motives and actions are also dependent upon members. Activity theory offers a framework through which these components might be visualized. The data were analyzed and findings will be discussed according to this conceptual framework. Quotations from graduates are incorporated throughout, not just to provide examples, put to advance the narrative in describing the theory, and to ensure that the theory is well grounded in the data.

An activity theory perspective in this study provides a focused analysis on the relationships among the subject (graduate), object (decision-making), mediating artifact (hidden curriculum), rules (school rules), community (school), division of labor (The unequal power relations between students and teachers that constrain interaction) as illustrated in Figure 6.1.

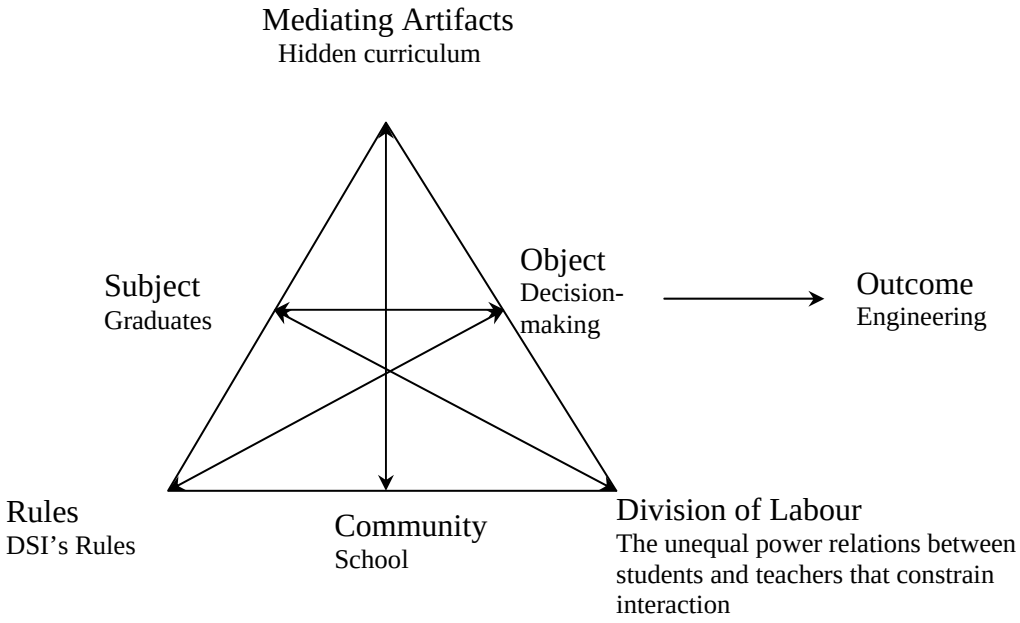


Figure 6.1: Structure of career choice activity system

1) Subject

What characterizes the subjects in the activity setting of career choice?

The subject of an activity system is the individual or group engaged in an activity's goal-oriented actions. It is the subject's point of view that is used in this analysis of an activity system, and its motive to the object is of primary importance in activity theory. In this study, graduates are the subjects.

2) Object

What characterizes the object in the activity setting of career choice?

The object of an activity system can be considered as the mental or physical product toward which the activity is directed. In this study, the object is decision-making of graduates.

3) Mediating artifacts

What characterizes mediating artifacts in the activity setting of career choice?

Mediating artifacts are the pedagogical tools for the subject to reach the object. These tools include instructional practices ('teaching styles') and curriculum materials. Graduates' career choice is mediated by particularly 'teaching style', social activities and pedagogical

authority (considered as 'hidden curriculum' in this study). Accordingly, the following figure characterizes the main relationships.

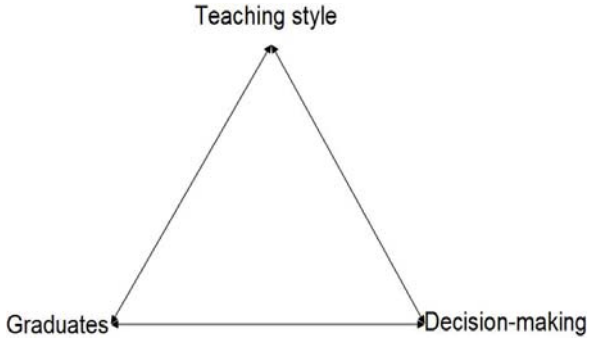


Figure 6.2: Behavioral interaction in activity system

4) What characterizes the community, including rules and division of labor in the activity setting of career choice?

Activity theory views a community as a group of individuals with whom the subject shares a common object. In this study, community refers to school. They share students as a common subject.

On the following pages, each previously described relations will be made clear within the context of activity theory. Each relation will be shown as a graph and its explanation will be given. In the meantime, an example from the interviews will be quoted while explaining the relation.

'Interactive/participatory' as one aspect of *"teaching styles"* refers to teachers' encouragement for students' participation to the course. In this study, it means student-oriented courses. Students claim that they were generally active in science courses. According to the statement of Interviewee13, the student has developed the ability to criticize something instead of accepting it immediately. That means they are used to expressing opinions that require reading and searching more. He also added that their science exams were sometimes written with open books. Their teachers told them if they wanted to solve a problem, they could find the formula in the textbook. But for them, the most significant thing is to know which formula they could use for solving the problem. The interviewee added that this approach is also relevant for engineering. Accordingly, the relationship is illustrated at Figure 6.3.

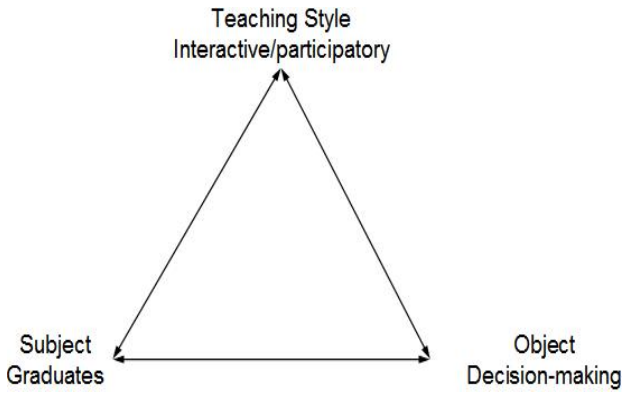


Figure 6.3: Behavioral interaction in activity system concerning interactive/participatory

> *Interviewee13: "... we read Berthhold Brecht and discussed it. If you ask me what you really learned in the DSI is the ability to criticize something instead of directly accepting it. The ability to develop an opinion and if you would like to enlarge upon it, you should read and research more... For instance, we sometimes had science exams with open books. And my friends from the other schools told us how easy we studied. Since they only had to memorize formulas. On the other side, in our school, teachers told us, of course, a formula is necessary to solve a problem but you can find it from the book. The most important thing is to solve the problem and which formula you should use to solve the problem. Moreover, the main tendency for engineering is this."*

The above statement describes that teachers challenged the students to discuss a topic during lessons. By doing so, they were enabled to criticize a subject at the same time. Moreover, by discussing a subject, a student would gain sufficient knowledge on an issue. Therefore, this motivates students to study more and to be able to show their knowledge during discussions.

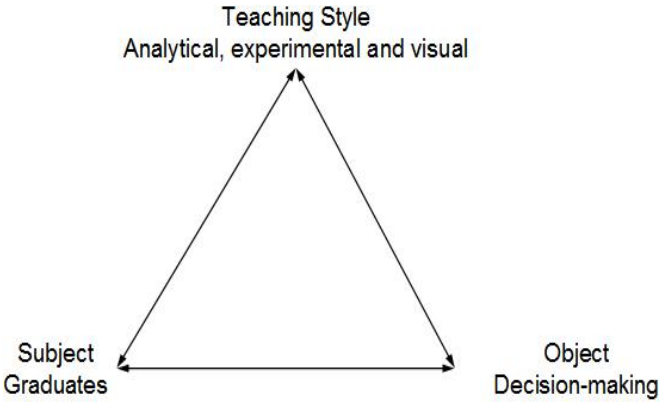


Figure 6.4: Behavioral interaction in activity system concerning analytical, experimental and visual.

‘Analytical, Experimental and Visual teaching’ as another aspect of *“teaching styles”,* refers to teachers’ practice that prevents pupils from having to memorize (Figure 6.4). Rather, it helps them to understand the logic behind the issue and analyze the causes. According to the statement of Interviewee 8, he did not believe that textbooks made an impact on him; rather it was teachers’ practices during the course that did. He defined these practices as systematical and analytical. Their science courses also took place in the laboratories and they got the opportunity to learn the course visually with experiments. Moreover, another interviewee, defined engineering as a thought of systemization and the engineer is the one who firstly, analyzes very well and then can make the true synthesis.

> *Interviewee8: …the textbooks did not make an impression on me but studying in the DSI affected me so much. Teachers taught us systematization…the teachers did not only teach the subject but also they gave us an opportunity to analyze it.*
> *…We were often in laboratories…science courses were performed in the laboratories and teachers taught the course visually. We really benefited from this so much.*
> *Interviewee 5: I think engineering is a thought of systemization…*
> *An engineer is the one who firstly analyzes very well and then can make the true synthesis.*

The above statement describes that it was the teaching style of teachers that affected students rather than the textbooks. The interviewee was impressed by the teachers because they showed how to systematize and analyze a topic. Both practices satisfied pupils since they learned more than just reading a textbook. This effective learning method came from the practice the teachers provided during their courses. He also said that their science courses were in the laboratories, which meant that they got opportunity to learn “learning by doing”.

‘Authoritarianism’ as the other aspect of the *‘teaching styles’* (is also one of the ‘hidden curriculum’ stated as ‘pedagogical authority’ in Chapter V), refers to teachers who were strict during the courses and did not tolerate students not following rules. Namely, they required that students follow the rules of the classroom. ‘Punctuality’ is one aspect of the ‘school rules’ and refers to arriving at school and in the classroom on time. ‘Power relations’ refers to the hierarchy between students and teachers. The relationships are in figure 6.5.

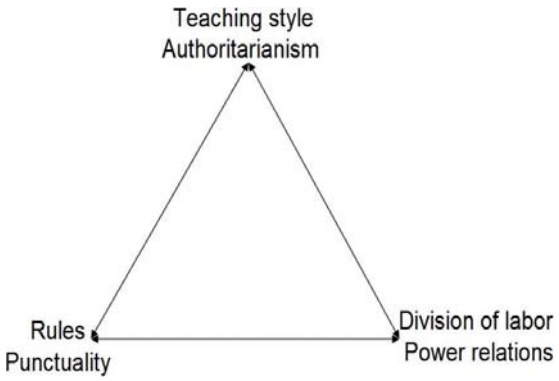


Figure 6.5: Structural interaction in activity system concerning authoritarianism.

Accordingly, the interviewer asked what the rules were typical in the classroom. And Interviewee1 answered that they should be respectful and everybody was required to come to the class when the bell rang. Then the teacher came to the class at the second bell. Moreover, everybody followed the rules.

> *Interviewee1: (...) (...) we had to be respectful (...) everybody was required to go to his/her classroom and wait until the bell rang. And the teacher came into the classroom at the second bell. And everybody obeyed the rules.*

As indicated above, 'time table', especially the starting time, is very important to instruct the course. Students should be in the class on time. It is easily understood that punctuality is one of the requirements of the school. Punctuality is demanded by the teachers. Therefore, this rule is also perceived as a respect for the teachers. Respect for the teachers shows the power relations between students and teachers. The interviewee also mentioned that everybody followed the rules. This case is the indicator of the authority. And the most important part of this authority starts in the beginning of the course that makes sure authority will be effective during the course.

Another relationship is between 'informal/liberal', 'clothing standards' and 'power relations. 'Informal/liberal', one aspect of the *'teaching styles',* refers to the teacher's liberal thinking. 'Clothing standards', one aspect of the *'rules',* refers to non-standardized clothes that students might wear what they wanted until the 1980s when, after a certain obligation of the Educational Ministry, they started to wear standardized clothes, but the rules were not practiced strictly. As stated previously, 'power relations' refers to the hierarchy between teachers and students. The relationship is presented in figure 6.6.

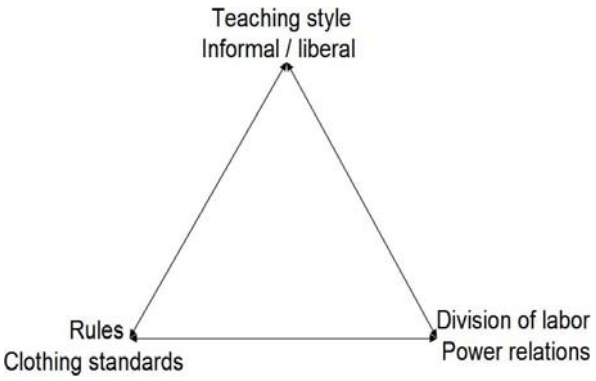


Figure 6.6: Structural interaction in activity system concerning informal/liberal.

In the view of Interviewee6, they were free to wear what they wanted to school and the teachers did not care about their physical appearance. That was because discipline was related to whether or not one did their homework and that one should study more. That enhanced a closer relationship with the teachers. The students were free to ask whatever they wanted at the DSI; however, they had been frightened to ask anything when they were in the primary classes (Turkish school). They used to be silent and just listened to the teacher during the course.

> *Interviewee6: ... we were free to wear what we wanted at school and the discipline related to whether or not we did our homework and you studied more. Our relations with the teachers were also closer. You could ask whatever you wanted at the DSI; however, we were too frightened to ask anything at primary school. We used to be silent and just listen to the teacher during the course.*

The interviewee expresses that the discipline in the DSI is not related to clothes as in other schools but related to school regulations (e.g. whether or not they did their homework). That means physical appearance is not significant for the school but courses, namely how much they studied is more important. They were able to develop a better relationship with the teachers and were therefore not afraid to ask questions. The courses were interactive, in other words, they could ask whatever they wanted. On the other side, she compared it to primary school in which they had been too frightened of the teachers which caused them to remain silent. The primary school had offered teacher-oriented courses, whereby the DSI offered student-oriented courses.

The other relationship (Figure 6.7) ‘stressing challenging/demanding content’, one aspect of the ‘teaching styles’, refers to the high level of the courses. ‘Exclusion’, one aspect of the ‘school rules’ of DSI, means to be sent away from the school under some

circumstances. As stated formally**,** 'power relations' refers to the hierarchy between teachers and students.

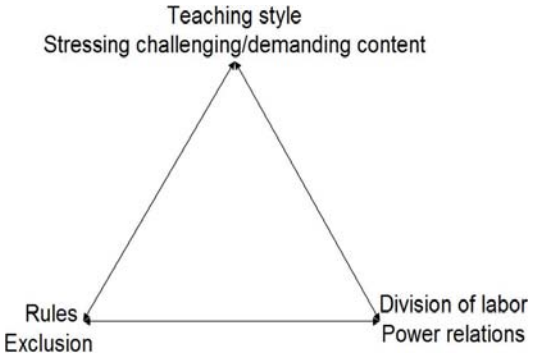


Figure 6.7: Structural interaction in activity system concerning stressing challenging/demanding content.

According to the statement of Interviewee 6, the students observed that some of their friends had to leave the school. They were young and were more interested in a social life with their friends. They should have taken care to study enough to get good grades, as the school administration had no tolerance. They only had one chance.

> *Interviewee6: You observed that some of your friends were required to leave the school every year. You were young and you loved your friends and you should have been careful in terms of getting good grades since the school administration had no tolerance. You had just one chance.*

For Interviewee6, there were students who were required to leave the school every year, because they had low marks. This shows that they could not achieve the courses so 'stressing demanding content' can be interpreted. Also it is understood that the teachers did not grant anyone favors and gave low grades, even though they knew that those students would have to leave the school. This is an indicator of the power relations. At the same time, students were aware of the importance of getting good grades as they had seen their friends having to leave the school.

VI.6 Key factors in career choice and interconnectivity of engineering education and the DSI

In this section, factors in Figure 6.1 will be examined at psychological and sociological levels. The former is comprised of mediating artifact (hidden curriculum), subject (graduates) and object (decision-making) named as behavioral characteristics (social

interactive). The latter is comprised of rules ('clothing standards', 'punctuality', 'exclusion') community (school) and division of labor (power relations) named as structural characteristics. The ways in which they contribute to object (career choice) and the interconnectivity with engineering education will be examined.

Activity theory is a descriptive tool rather than a predictive theory. It aims to describe all levels of a given activity in order to understand what the individual or group is doing in a particular setting. Through this theoretical lens, all activities are considered to be socially and psychologically situated. The context of a given activity is especially crucial as activity theory posits that the human mind emerges and exists as a special component of interactions with the environment (Kaptelinin, 1996).

Activity theory in this study provides a focused analysis on the relationship of hidden curriculum as 'analytical, experimental and visual', 'stressing demanding content', 'authoritarian', graduates and decision-making; rules as 'clothing standards', 'punctuality', 'exclusion', community as school and division of labor as power relations.

'Teaching styles' are related to the teachers' instruction methods during the courses. As previously stated, there is a relation between 'teaching styles' 'graduates' and 'career choice'. This relation is examined at a psychological level. 'Teaching styles' (as a mediating artifact) directs the graduate (as a subject) to reach his/her career choice (as an object). In the context of this perspective, school experiences played a significant role in students' life. In other words, the student shapes his/her life according to the school experiences. The graduates attended the DSI when they were 12-18 years old. Namely, the age that is important for the formation of students' abilities. In this study, the characteristics of the graduates were determined and they were related to 'teaching styles'. It is found that the current characteristics of graduates were influenced by the 'teaching style' during school life. And they received characteristics, mentioned in the result part, throughout the 'hidden curriculum'. However, how are they related to engineering? Answering this question is significant in terms of understanding the outcome of graduates' career choice as throughout the activity system.

The variables that measured high school preparation relevant to engineering were significant determinants of major choice. Table 6.1 summarizes the interconnectivity between the engineering and DSI education that will be explained at the following paragraphs.

Table 6.1: Interconnectivity of Engineering education and the DSI

Characteristics of Engineering Education	Characteristics of the DSI
• Analytical thought process • Practice of research • Experimental	• Analytical, experimental, and visual teaching
• Stressing demanding content	• Stressing demanding/ challenging content and using challenging material
• Liberal Education	• Non-directive/interactive/participatory • Informal/liberal

As indicated 3.2.1, high school education is vital for the engineering education at the university since the advanced science courses taken during high school enabled students to understand lectures at university. All problems in engineering are not solved by means of equations or technical data. In many instances a great deal of experience is required. During a four-year period of study, it is not possible for the student to learn engineering. Within the context of this, high school is important for the engineering education. However, it is also important to know what kind of teaching style is relevant for an engineering education. According to Johnson (1963, p.56), laboratory experiences serve as the basis for exercises which confirm theoretical concepts and the laws discussed in formal classrooms give the student a feeling of confidence, a conviction that the statements presented the truth. The laboratory experiences enable the student to see how well his ideal system predicts the operation of an actual system. The laboratory serves as a means by which the student develops skill in both analysis and synthesis.

Estrin (1963, p. 220) describes the best teacher in engineering as the one who has a much greater interest in the subject taught, that he is very able in the presentation of subject matter, and that he can, to an unusual degree, stimulate the intellectual curiosity of his students.

The relation between ‘interactive/participatory’ and ‘analytical, experimental and visual’, two of the ‘teaching styles’, ‘graduates’ and ‘career choice’ are also examined in the context of activity theory. The students and teachers were in interaction during courses. Therefore, students have to be prepared before coming to class. ‘Interactive/participatory’ enables students to obtain analysis and evaluation ability. This allows them to be more intellectual by the end of 12^{th} grade when it is considered that this aspect is the deciding factor that affects students along their educational life. And it also enables students to express their opinions and hear comments on them. This increases their self-confidence since

they are sure that they are knowledgeable about a topic. The characteristics of being self-confident and more intellectual influence their career choice in the way that they can reach higher positions. The relation with engineering education can obviously be seen throughout the survey of Kvam (2000). His survey supports cooperative learning, where concepts can be discussed in the class, and deeper associations constructed through understanding another's question or point of view on the subject. He calls it active learning and adds that by its nature, active learning should encourage deeper learning, thus enhancing long-term memory.

Gross (1969, p.526) states that the essence of engineering education is the analytic thought process it provides, rather than the actual content offered in courses at any given time. Moreover, Kvam (2000) also states that the practice of research is a vital part of engineering education. Therefore, it can be said that there is a linkage between the engineering education and the education in the DSI. In other words, analytical, experimental and visual teaching style enabled pupils to choose engineering.

The relation between 'authoritarianism' as a 'teaching style' and 'punctuality' as a 'rule' and 'power relations' as a 'division of labor' are the structural characteristics of the school system. The German teachers are authoritative in the class and they do not tolerate the violation of any class rules during the course. In other words, their relationships with students are strict and serious. For instance, when somebody is late for class, he/she must take a 'permission paper' from the office before entering the classroom. Therefore, students know that being punctual is an important rule of the school. And they mostly obey it. The authoritarian style of the teachers always warns students that they must come to the class on time, as not to encounter any kind of strict censure. Moreover, this style makes them more disciplined and they concentrated on their courses. Discipline is one of the elements of success. As Sternberg (2004) says, discipline is teacher-initiated actions designed to minimize student behavior problems and distractions in order to create maximally effective learning environment. Successful students can aim for high goals. Studying engineering is one of the highest aspirations in Turkey and therefore, most chooses to study 'engineering' at university.

The relation between 'stressing challenging/demanding content', one of the 'teaching styles', 'exclusion' one of the 'rules' and 'power relations' is also examined in the context of activity theory. The content of courses in the DSI was difficult and students had to achieve their courses, otherwise they were excluded from the school, i.e. they had to leave the school. In this context, their relations with teachers were strict. The students mostly had one goal, that is, to achieve their courses. Therefore, they had to understand the courses perfectly and to study in a disciplined way. And those who managed to graduate from the DSI preferred to

continue their education along the same lines and the most successful students generally went on to study. And this is another factor for their career choice as engineering.

Frehill's survey (1997) supports the above relationship with engineering. He states that most engineering colleges recommend that entering students should already have taken two years of algebra, one year of geometry, and a half-year of trigonometry during high school with prior work in analytical geometry and calculus preferred. Because of the importance of prior preparation in math and science, students without this preparation are disadvantaged when they enter college. Some engineering colleges, for example, do not offer remedial math courses; hence, students not prepared to take calculus are either not accepted or face an enormous hurdle during their first year of college in order to pass calculus (Frehill, 1997). Estrin (1963, p. 460) also indicated in his article "…the curriculum of any engineering college is extremely heavy on the technical side…"

On the other hand, teachers use their authority was only in connection of teaching their courses. When the relation between 'informal/liberal', 'clothing standards' and 'power relations' which are also structural characteristics of the school system, was examined, German teachers are informal/liberal. For example, they do not place importance on the 'clothing standards' of students. This 'informal/liberal' style lets students have a closer relationship with them. They feel free to speak with their teachers on any kind of issue outside of the class. The congenial attitude of the German teachers towards their students was the main reason for them to choose science courses, as these were taught by the German teachers.

Engineering with its emphasis on problem solving can be considered as a basis for a liberal education. According to Lewin (1983, p.132):

> "Engineering (the essence of which is design) has a distinct philosophy of its own based on the principles of deductive problem-solving…Furthermore, engineering philosophy has been shown to be fundamentally different from that of the traditional sciences and arts and can be considered as constituting a Third Culture. Thus it is proposed that engineering philosophy should form the core element for a liberal education which would result in uniting the arts and sciences and dispelling the view that engineering is an anti-social and academically inferior activity."

Another author, (Lynn, 1977) states that an engineering education requires greater integration of values derived from liberal education. He also states "there is no question that analysis is an essential ingredient of engineering education…". The analytical curriculum, directly related to engineering education, creates an educational environment that supports their interests and strengths (p. 150-151).

As indicated above, liberal education is one of the steps for engineering education. Therefore, by means of the liberal education in the DSI, the pupils tend to choose engineering as a career.

Even though the above mentioned characteristics of the school influence career choice more often, as graduates noted the influence of teachers more frequently, the response rates of perceived influences on career choice in Figure 5.14 and 5.15 suggest that the profiles of "school-dependent" and "not school-dependent" responses of graduates choosing careers in engineering resemble each other.

The ratio of "school-dependent" to "not-school dependent", choosing careers in engineering, is over 3 to 1, even for those students having almost the same characteristics of the school. Unfortunately, when the attention is limited to those students who exceptionally stated that their parents influenced their career choice, the number of "not school-dependent" is small that one hesitates to generalize too quickly on the basis of these responses. However, it is interesting to note that the background of graduates' parents among these "school-dependent" and "not school-dependent" responses of graduates is that most have a B.A. degree and speak at least one foreign language. In particular, all fathers have a BA degree and half of them studied engineering. Therefore, fathers are indicated as a parental influence on career choice.

This suggests that for some graduates, the parents may make a critical difference in the decision for their career choice in engineering. However, because graduates simply indicated that influence they perceived as school, the survey results show little about the relative strength students' attribute to parents on career choice. It can be said throughout this finding that parents, particularly fathers, influenced graduates for their career choice. Furthermore, parents speak at least one foreign language. It has been found that because the DSI is a 'bilingual' school, parents prefer this school for their children. These findings also support the reason of DSI choice. Within the framework of these findings, it can be said that 'parents' is an independent factor for graduates' career choice.

According to the statement of Interviewee 4, his father influenced him in choosing engineering since he was also an engineer. He was also interested in mechanical things when he was a child.

> Interviewee 4: Of course my father, he was also an engineer and when I was a child, I was interested in mechanical things.

For Interviewee4, there was no way other than choosing engineering as a career since his father was also an engineer. As understood from this statement of the graduates who think that their parents influenced career choice, parents, particularly fathers were mentioned. On the other side, when considering the parents' socioeconomic background, they are mostly engineers. That shows that even the graduates who do not state 'parents' as an influencing factor for the career choice, were influenced by them without being aware of it.

VI.7 One typical graduate

In this section, previously analyzed topics ('characteristics of DSI', 'characteristics of graduates' and 'career choice') will be reviewed from the perspective of one of the interviewees (Interviewee5), whose discourse accords with the results in Chapter V, and of which examples will be attempted.

Interviewee5 is one of the interviewees whose answers are typical for the results in Chapter V. He was born in Antalya and is 41 years old. He is married and has a son and a daughter. He studied at DSI in the period 1977-1986. Then he attended the Middle East Technical University and studied Chemical Engineering.

In the interview, he divided his school life into two parts. Firstly, he described the first part, up until the eighth grade in which was very disciplined, and he added that they were really afraid of their teachers. He further said that during the first year, a strict and serious German teacher instructed their class. But, as they were used to such things coming from Turkish schools where the students could be slapped, they were not intimidated. At any rate, 'discipline' and 'authoritarianism' were the first two concepts that the DSI administration conveyed to their students.

On the other hand, the school's beginning and ending hours were at different times as compared to the other schools. There was no playground and therefore no reason to stay and talk to the other pupils, so they just went straight home and studied. Furthermore, the school did not offer social activities. This made it more difficult to make friends and to socialize. He also compared the DSI to the American College and said that the students from American College had more sincere relationships among themselves. Almost all graduates come together annually. However, he also added that after having visited DSI, they made real friendships and expressed that "maybe he had ten friends rather than three hundred" but they meet throughout their lives. By having different beginning and ending hours also prevents students from socializing with students from other schools. Therefore, they remained alone

after school and just did their schoolwork. In other words, he emphasizes that they were not part of a group and therefore, very individualistic.

In the second part, he said that they became aware of being a student of the DSI, which was a source of a pride for him. This is because he believes that they really received not only a special education but also training, when examining those years (1970-1975). For instance, they had the opportunity to read foreign journals. They also watched some films which were politically censored in Turkey and discussed them. Therefore, he claimed that they became aware of receiving a different and unique education.

Moreover, the courses were very difficult and the school administration was rigid, in that one, who could not fulfill the requirement of the courses, would have to leave the school. For that reason, there were some years in which the number of classes decreased from four to two. However, the students who did have to leave the DSI were successful in the other schools and were able to attend the prominent universities of Turkey. It shows that they were at least hardworking enough for Turkish standards. But the DSI demanded even more effort from them. Moreover, a kind of 'fear' that motivated them to study more was formed among those who stayed in the school.

In contrast to the 'fear', he emphasized that they were very pleased about attending a school with a non-standardized clothing requirement. This was one of the distinctive characteristics of their school. He claimed that they were 'free'.

He compared German and Turkish teachers and said that they were more relaxed with the German teachers. Turkish teachers were very serious and they were not as liberal as Germans because of their tradition and culture. For example, they could talk about their girl friends with their German teachers, make jokes in the breaks and they could also talk with them when they came across in Beyoğlu. But they could not even dream of doing that with their Turkish teachers. He added that he could also sit any way he wanted in front of his German teachers but not in front of the Turkish teachers. Furthermore, he still can't sit in such a 'proper' way in front of his father although he is 41 years old. His hair was also a bit longer than Turkish Ministry standards. His Turkish teachers and father immediately intervened with that situation, but his German teachers did not say anything as they were opposed to such limitations.

In light of 'teaching style' he favors learning a subject by an 'analytical, experimental and visual' teaching style. And he claims that the DSI is unique in that it can instruct with such a 'teaching style'. He gives many examples about this 'teaching style' and tells how he understood a topic in Math even though it was not his favorite subject. Once his Math teacher

was ill and another teacher replaced him. One of their friends said that he hadn't understood the subject. Then, the teacher said that they, as math teachers, tried to be more sophisticated by writing everything on the blackboard. Math was the easiest one. Integral is the sum. And he explained to them in a schema for fifteen minutes without writing any math symbols. With that explanation, he could solve any kind of integral problems. The teacher explained a mathematical topic showing it in a schema rather than explaining with formulas. The interviewee mentioned it as a typical case for the DSI and remembers the details even though it happened about 27 years ago. After receiving such an analytical education, his 'analytical thinking' developed and he preferred to study 'engineering' in the university, which also requires 'analytical thinking'. For him, the DSI's educational system is analogous to 'engineering' and therefore, according to his perception, most of his friends preferred to study in the 'engineering department' at university.

Besides, he had studied such advanced courses at the DSI that he did not even need to attend the lectures at the university. Therefore, he separates graduates of the DSI from other high schools, in his discourse, by expressing himself as 'he' (sometimes 'we') and graduates of other high schools as 'the others'. He thinks that they are special since they received a unique education compared to graduates of the other high schools.

Additionally, the perception of being 'special' and 'different' from the others was also realized during the school years. Since he expressed that they did not have any standardized clothes like the others, they could wear what they wanted. Physical appearance is not important at the DSI; rather, the most significant element in the school was to concentrate on their courses. The school administration and teachers were strict in that sense.

He thinks that engineering fosters a thinking system and he would like his child to first study engineering and then continue to study what she wants. If there was an opportunity, he wishes that all lawyers and other professionals could first study engineering in order to develop the analytical thinking method needed in engineering. The ideal administrator for him is the one who first studied engineering and then management.

As clearly understood from this statement above, the interviewee thinks that all people should study 'engineering' first, and then continue their studies in other departments. Since understanding complex issues is made possible by using 'analytical thinking' and this kind of thinking style can be obtained just by studying engineering, most graduates prefer to study 'engineering'.

In conclusion, the interviewee has stated that his experiences in the DSI motivated him to choose engineering as a career. These experiences are mentioned as teaching style, rules,

social activities and power relations between students and teachers. The analytical education developed his ‘analytical thinking’ and he preferred to study ‘engineering’ in the university, which also requires ‘analytical thinking’. The DSI’s education system is very similar to an ‘engineering’ education and therefore, it was logical that most DSI students choose ‘engineering’ at the university.

CHAPTER VII. DISCUSSION

This chapter provides an outline of the study, comments on findings, highlights the empirical and theoretical contribution, addresses advantages and limitations of the study, and discusses implications for further research. It is believed that this chapter will be helpful for researchers on career choice who find it useful to work within the framework of "activity theory" into which the concept of 'hidden curriculum' is integrated.

VII.1 Summary of the results

The aim of this study was to investigate reason(s) for DSI's graduates' career choice by examining the DSI and its graduates. Although some education practitioners, administers, and sociologists have separately investigated separately the hidden curriculum and activity theory, few scholars have conducted research that combines and simultaneously examines hidden curriculum within the framework of activity theory. Key concepts for an adjusted activity model that could be defined as "hidden curriculum" was integrated in the model.

Overall, focusing on the factors that influence DSI's graduates' career choice, this study addressed two issues. At the macro level, the influence of the school on graduates' career choice was analyzed. And at the micro level, the "hidden curriculum" of the school could be specified by the key factors "teaching style", "pedagogical authority", and "social activities". One of the important contributions of this study is to have found empirical evidence for the relationship of 'teaching style' and 'rules' – which teachers always need to determine - to their students' biography.

A notable outcome of this study is that teaching style, social activities and pedagogical authority are all found in the interviews and it is also found that they are interrelated. Each of these factors contributes to the career choice of graduates on their own but also influences one another.

'Pedagogical authority' can be found in teachers' use of authoritative languages, which may imply the teacher's attitude toward students. In this way, the students learn discipline in the courses and that has a certain influence the rest of their lives.

'Social activities' is another aspect of "hidden curriculum" of the school. As an institution, the school did not offer any social activities; instead it fostered students to learn by doing. When there were social activities, these were arranged by the students themselves and not by the school. Therefore, students learned for their later professions the ability to work

individually rather than in groups. This may have contributed to their being individualists in their job careers later on. On the other hand, they have their social life within their families and with their friends. Obviously they satisfied their need to be socially integrated outside their jobs.

The school can be characterized by its teaching style and rules. How the characteristics of the school are defined according to the perceptions of the interviewees can be described in the following way: The courses (especially science courses) are instructed analytically and visually by German teachers and they are also taught interactively. The students were always encouraged to participate in discussions. German teachers made students explain their ideas on the topic(s) during the course. That means the courses are generally taught student-oriented. It can be assumed that German teachers had a liberal teaching style. On the other side, they were also authoritarian when instructing the course. Namely, they had strict rules and those who did not follow the rules would immediately be disciplined. Great importance was placed in teaching the courses. Therefore, they were not flexible for students when it came to distractions in the classroom. On the other hand, German teachers were not strict concerning other issues apart from the courses. It can be said that the school administration placed great importance on 'teaching style' that comes from the teachers and 'rules' that come from the school administration. The rules of the school and the teaching style of the teachers are interrelated when instructing the courses.

It has been found that the current characteristics of the graduates were influenced by the 'teaching style' during school life. It may be assumed that the 'teaching style' contributed to their characteristics and by this the teachers indirectly supported the career choice. Apart from the 'teaching style', the interviews revealed that the way the school dealt with 'rules' also played an important role in the formation of students' behavioral style and social norms. Supported by both influences, the students' orientations may have developed towards preferences for their career choice in the field of engineering.

According to the perception of the graduates, the students at DSI are characterized as perfectionist and disciplined, analytically thinking and individualistic. Being perfectionist and disciplined in school life are also among the requirements of finishing a difficult school. Therefore, the students at DSI appear to have had a good chance to build up these competencies. Also, being able to apply analytical thinking is often perceived by students as one of the most difficult demands made on them. However, it may be assumed that students at DSI acquired these cognitive abilities.

There are many studies on career choice. This study is unique in terms of its methodology (interview), application area (high school) and content (engineering as a career). This study is conducted on a high school. There are few studies on the effect of high school experiences on career choice. But, they are comparative studies in the fields of male/female, urban/rural, black/white and Asian/non-Asian high school experience. Also, most of the studies did not use interviews but questionnaires. And those who used interviews either performed a comparative study or did not explore the reasons why they choose engineering as a career. There are few studies that explored the reasons why students choose engineering as a career. Moreover, these studies are comparative, use questionnaires, and collect data not on graduates but current students. Many studies examined the reasons of career choice and found many factors such as friends, parents, and school. Even if the factors varied, school factor is relevant in all studies. This study examined the contribution of school on career choices. From these perspectives, this study is unique (the comparison between this study and studies given in literature review part is presented in the Table 1.1).

Although in this study only a highly selected sample of graduates of the DSI could be interviewed, the obtained data on school factors which contribute to career choice may build up a solid basis for further research. More empirical evidence could be added to an overall understanding of why students choose engineering as a career. Every single graduate has an idiosyncratic biography, but there are many similarities within the group of graduates, which were interviewed.

Throughout this study, school characteristics have been found to be a significant influencing factor in the career choice of the graduates. However, in addition to school characteristics, parental influence has been also found as an indirect factor for graduates' career choice. Both factors (Figure 7.1) will be discussed in the following paragraphs in the light of previous findings on career choice.

Initial career decision-making is a cultural, developmental task that students are expected to have accomplished by the end of their high school year (Super, Savickas, & Super, 1996). Particularly, engineering education requires an eligible education during high school, as stated in Chapter III. In that context, in this study, it is found that characteristics of the high school, defined as 'teaching style', 'pedagogical authority' and 'rules' named as 'hidden curriculum' plays a key role in decision-making of graduates' career. The former three concepts have been found within the context of Martin's theory (1976) as indicated in the literature review at the beginning of this study (Chapter I).

Ford and Moore in their study also claimed that teachers' teaching style plays a significant role in the career choice process for African American males, particularly those who are interested in engineering. In classrooms settings, it is important to use and develop pedagogical strategies that increase educational and career aspirations for students (Ford & Moore, 2004; Ford, Moore, & Milner, 2005). In these studies, some suggestions were given to teachers in order to enable students to become engineers. For example, teachers need to cover content in their courses that is expected of engineering college students. The more students are exposed to the rigors of science and mathematics, the more likely they will become interested in engineering as a major (Moore et al., 2004). However, in the present study, teachers do not intend to enable their students to become engineers but the 'hidden curriculum' in the school play a vital role in their career choice. Classroom influences on students' career aspiration were also researched by Woolnough et al. (1997). This study showed that the influence of the school on career choice was compounded by the student's own motivation (psychological aspects) and the student's friends and family (sociological effects). The importance of these findings lies in the variety of social, school and personal influences interacting upon the student to form his or her career choice. These findings are consistent with Woolnough et al. (1997) who described the complexity of factors which influence students' choices. However, influence of 'teacher' that is not examined as a special topic prevents the findings from being more precise, since 'teachers' are significant individuals that influence 'student's motivation' in the school. Also, 'teachers' should be considered as another social effect, since they are the individuals who are at least as important as 'friends' in the school environment.

On the other hand, while the statistical analyses revealed effects within the school, there were other non-school effects such as the graduates' parents. Upon being interviewed, it is found that in addition to the importance of the school support, parents' support in helping a student to choose his or her career was highlighted.

However, in the present study, graduates simply indicated each influence they perceived from the school, the survey results reveal that parents' socioeconomic background contributes to each influence on career choice. That means graduates' parents were the individuals who most influenced their decision to attend the DSI. Yet, the graduates indicated that their fathers had more influence on graduates' decision to pursue a career in engineering than mothers. Thus, for the graduates in this study, it can be concluded that parents are the primary individuals who influenced their decision by sending them to the DSI and they have an indirect influence on graduates' career choice.

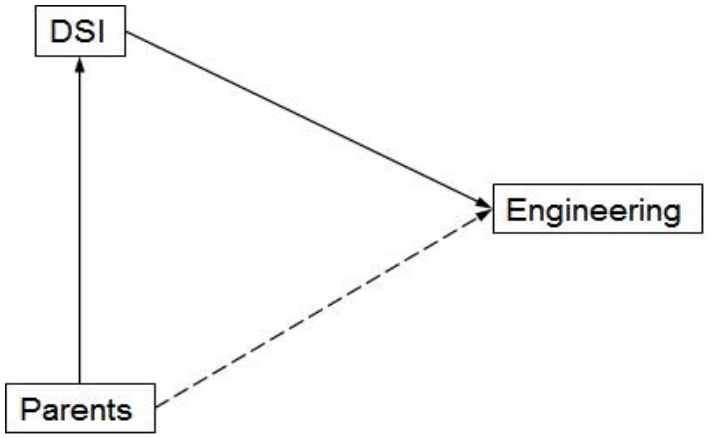


Figure 7.1: Parents as an indirect influence for career choice.

This finding confirms the result of Scott-Jones & Clark, 1986 that the parents' socio-economic status, in terms of education and occupation, is closely related to the academic performance of the student. Sewell, Haller & Straus, 1957 also claimed in their study that the socio-economic status of family has a direct impact on the educational and career choice of the students. Parents play a special role in the career decisions their children make throughout their lives. Parental involvement and influence over future career choices begins at a very early age. The involvement of parents can strongly affect an individual's physical and mental abilities, education and employment opportunities, and financial resources. Parents have been found to affect an individual's preference for certain types of interpersonal relationships, work attitudes, and willingness to pursue a non-traditional career (Splete and Freeman-George 1985). In the context of their findings, it is interesting that socio-economic status of sample graduates' parents is high in present study. These findings are similar to Gehrt (1990) who found that a strong correlation exists between socioeconomic status and educational level of parents and student choice of curriculum emphasis. Respondents were more likely to pursue an agriculture-related career if their father's occupation was in an agriculture-related field, and were more likely not to pursue an agriculture-related career if their father was not employed in an agriculture-related field. The present study also finds in VI.6 similar result about the interconnectivity between the occupation of parents and their children. This finding adds credence to the Splete and Freeman-George (1985), Fisher and Griggs (1994), and Shipp (1992) studies which found that support and influence of significant others played a vital role in students' career choices.

Esters's study (2003) revealed that the graduates' parents influenced their decision to attend an agricultural high school. As in the present study, the influence of parents was

underlined when sending their children to the high school. Parents did decide to send their children to the DSI. While both of these studies are similar in the context of this finding, they differ in terms of influencing factors for their career choice. For example, Esters (2003) found that friends had more influence on their decision to pursue postsecondary education than teachers, family members, agriculture teachers and guidance counselors while the school life experiences influence have been found as the most crucial factor for graduates' career choice in the present study.

In summary, it is obvious that 'school factor' influences career choice as indicated throughout many studies. However, along with, 'parental' factor is also examined as an influencing reason for career choice. Therefore, also in this study, the data on parents have been analyzed and similar results have been found.

VII.2 Integration of hidden curriculum into the framework of activity theory

'Contradiction', one of the principles of activity theory, is not examined in this study. It is defined as: "Contradictions are not the same as problems or conflicts. Contradictions are historically accumulating structural tensions within and between activity systems" (Engeström, 2001). In this study, due to the fact that just one activity system was defined to model the career choice process and it is depended on time, "historicity", as a principle, was preferred while examining the system instead of contradiction.

Activity theory, defines the 'development' in historical process, provides a systematic tool of analysis for the career choice of the graduates. Also, the relationship between elements that influence career choice is thoroughly schematized by this theory. It is considered that other theories would not model the system as well as activity theory.

Few studies examined "hidden curriculum" within activity theory. But in this study, "hidden curriculum" was examined as a mediator in the activity system. Also, "hidden curriculum" was found to be the key factor in the decision-making process in becoming an engineer. Within this context, this study is unique.

Career choice was systematized in the activity system in this thesis as such: An activity system is comprised of subjects, objects, mediating artifacts (tools), rules, community and division of labor. It aims to look across the multiple settings of activity system- including teaching style (as a hidden curriculum), rules, and power relations. In this study, choosing engineer is viewed as mediated by artifacts such as hidden curriculum, (teachers' styles, social activities, pedagogical authority). The activity takes place within a school. The rules include

principles of 'school rules'. The division of labor includes power relation between students and teachers that constrains their interaction.

In this study, it has been found that teaching style, described as informal/liberal, analytical, experimental, and visual on the one hand, and non-directive/interactive/participatory, stressing demanding/challenging content, directive/authoritarian on the other, is the most significant factor that influences career choice.

Hidden curriculum has influenced the characteristics of the graduates. They become analytically thinking, perfectionist, disciplined and individualist. These dispositions may have been helpful for their career choice.

VII.3 Advantages and limitations of the study

This study suggests that activity theory is a viable theoretical lens to study reasons for career choice. One of the advantages of activity theory here allows recognizing the whole picture of what is happening during school attendance in terms of a career choice activity system. It provides an alternative perspective to evaluate the pre-dominant factors in a whole picture. Another advantage of this theory is that it supports the analysis of the dialectic interactions between students and educational factors. The focus on interactions through internalization and externalization can be regarded as the hallmark of this framework. Lastly, the theory provides a framework for understanding how each aspect and level of education in the school are connected with the social activities in which they are embedded and how they mutually interact. A successful application of this tool in this study will add a validity test of this tool and guide the future researchers in effective use of activity theory in their studies of analyzing the impact of activities in school.

This study is especially useful to those engaged in efforts to define the educational factors on career choice and those who would like to provide an exclusive high school education.

Using activity theory to conceptualize the human activity system has been criticized as imposing a structure on human actions and as not being a natural representation of human practice (Yamagata-Lynch, 2002). However, this limitation exists with all the sociocultural theories that researchers use to make meaning of the phenomena they are studying. The researcher made it clear that the findings of this study do not intend to reveal all the complex factors underlying the studied systems but rather to provide insights into certain dimensions of sociocultural factors important for career choice.

The other limitation is related to time period. Even though it is expected that interviews should be conducted at each year to get accurate data as indicated in the theory, it is not possible to apply in this system. Because the graduates were selected from different time periods to bring out a general perspective and also activity system started when the students attended the school and it ended when they graduated. That means there is no opportunity to interviewing students in those time periods. Instead in this study the interviews addressed the perception from a retrospective view.

One of the limitations, moreover, was to get an official permission from the Educational Ministry. Therefore, the school environment could not be observed completely. Although current school environment has been different than the former one, it is believed that there have been some traces of the past. It was useful for the study to explore the environmental factors expressed in the interviews from looking back.

Another limitation is related with the limited reach of historical documents. Just three yearbooks and a history book on the school could be attained from one of the graduates. More documents, if could be reached, would give additional information, not only on the school but also on the conditions under which the graduates made their experiences.

It was also difficult to contact the teachers of the graduates. Most of them died. And some of them moved to unknown addresses. If teachers, again, could have been contacted, the interpretation of the data would have been enhanced.

Due to the fact that the graduates chosen to be interviewed happened to be mostly CEO's of many prominent companies of Turkey, it was difficult to get appointments. And the appointments were arranged according to their spare time. This could sometimes be in the evening either in their homes or office. Most of the interviews were conducted with the help for getting appointment by one of the graduates (director of ALKEV "Alman Liseliler Kültür ve Eğitim Vakfı- DSI's Culture and Education Foundation"). Despite that help, **a** few appointments had to be canceled on the declared excuse by the related CEO for not having time. Therefore, it could be claimed that the researcher could not get in contact with all the chosen graduates and could not arrange time for the interview. Under such circumstances, it took longer to complete the interview schedule of the study.

This study is the first in terms of analyzing decision-making process of the graduates' of a foreign school in Turkey. Since, previous research on foreign schools in Turkey generally focused on their establishment because of missionary reasons, this study dealt with the education of a foreign school which was primarily established for students with a family background of coming from the financial and political population.

VII.4 Recommendations for further research

If these ideas are to be replicated in the Turkish educational system, it is recommended that each purpose for finding the relations should be rigorously considered, relevant to the children's needs and interests. This study has attempted to find these relations. Accordingly, it opened new areas to work on. The following paragraphs will describe these areas.

While "code system" is defined, 15 main codes are determined as mentioned in Chapter V.1 but only five of them are used because they are the most dominant factors and interviewees mostly expressed those factors themselves. Researchers in this area should also incorporate factors in other categories to enhance research and to facilitate a thorough research.

"Teaching style", one of the characteristics of the DSI, is investigated only for German teachers because most of the courses are taught by German teachers. It can be considered that the same research to be conducted on Turkish teachers would also give valuable results. This research would facilitate comparison between Turkish and German teachers in terms of their educational system. By such comparison, meanwhile, their pedagogical attitudes could be compared.

"Rules", the other characteristic of the DSI, have five sub-codes. Unexpectedly "Clothing standards" has the highest frequency among these sub-codes because it represents the liberal understanding of the school, as mentioned earlier. In this regard, more studies could be done, especially by comparing relevant cases in other schools.

The graduates have already been characterized as perfectionist and disciplined, analytically thinking and individualistic, within this study, yet this has been done, not with the employment of psychological analysis, but only on the basis of graduates' expressions. Therefore, another study considering psychological analysis would give more precise explanations.

The results and outcomes of this study may well provide ideas for future research, especially concerning the appropriate methodology for this type of research. There are many 'career choice' theories but those were not used in this study. DSI's career choice reason was examined in the context of activity theory and "hidden curriculum" concept.

This theory has been considered as the most suitable one to demonstrate the framework of graduates' career choice; in other words, to present the process of graduates' career choice. As a further study, it is recommended that there should be studies to apply the other parts of activity theory to educational activities.

The findings indicate that understanding the hidden curriculum is an integral component for achieving academic success. In this study, "hidden curriculum" concept has been applied as one of the elements of activity theory. However, there are many "hidden curriculum" theories and this study area is open to use these theories for further studies. Moreover, it is recommended that curriculum textbooks and teaching guides should be prepared and expanded according to these studies' results.

To present the place of the DSI in the Turkish educational system, there is still a need to further study its comparison with other schools. Future research in this area should focus on the characteristics of other schools. Such a study could be performed on either foreign or state schools.

Given the already-mentioned fact that the graduates chosen for conducting this study on the DSI appear to have been holding higher executive positions within the business life in Turkey, last but maybe not least, as a suggestion for research, how the DSI's characteristics affect the future of its graduates should and could be examined in further studies.

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APPENDICES

A) Examples from the course of Physics and Mathematics

Anwendungen

Was kann man jetzt von dem Apparat erwarten ?

Nun, man darf ihn nicht überfordern. Wie jeder Rechenautomat ist er ein ,,kompletter Idiot mit Spezialbegabung", der ständig sich wiederholende Operationen in Blitzesschnelle erledigt, für jede neue Aufgabe aber neuer Einstellung bedarf und nur in geringem Maße zu automatischen ,,Denkentscheidungen" gebracht werden kann. Dieses ,,Denken" hört beim Automaten meistens mit der Entscheidung: ,,Es geht nicht!" auf — wie bei manchem Schüler auch.

Bleiben wir bei der Arbeit eines einzelnen Multivibrators. Er kann blitzschnell feststellen, ob eine eingegebene Zahl gerade oder ungerade ist. Das geschieht durch Abzählen der mit der Wählscheibe eingegebenen Impulse. Beim Rest Null wird der alte Zustand wieder erlangt, beim Rest 1 leuchtet die andere Glimmlampe auf. Koppelt man ihn mit dem Verstärkerzählwerk, so dividiert er durch 2 und zeigt die Reste Null oder 1 an.

Geben wir nacheinander beliebige Ziffern a, b, c . . . in den Eingang, so liefert er automatisch die Werte der Funktion.

$$Z = \frac{a}{2} + \frac{b}{2} + \frac{c}{2} = \dots$$

Statt mit der Wählerscheibe zu arbeiten, können wir auch den eingebauten Impulsgeber benutzen und erhalten mit dem Anfangszustand A des Zählwerks die

$$\text{Funktion } Z = A + \frac{a}{2} + \frac{b}{2} + \frac{c}{2} + \dots$$

Die Geschwindigkeit des Impulsgebers ließ sich bei unserem Apparat steigern von 12 Impulsen pro Sekunde bis 22 Impulse pro Sekunde.

Es wäre ein Leichtes, diese Frequenz bedeutend zu erhöhen; doch kämen dann unsere mechanischen Zählwerke nicht mehr mit. Man benötigt dann erheblich mehr Binaden als Vorstufen und ,,Untersetzer".

(Vgl. elektronisches Zählwerk der Firma NEVA.) Für unser Modellgerät genügt das Aufzeigen der Möglichkeit.

Koppeln wir die 1. Binade mit der 2., 3., . . . usw., so erweitert sich der Bereich. Additionen werden durch Abzählen im Dualsystem erledigt. Das Aufleuchten der Stellenwertlampen gibt das Ergebnis wieder.

Schalten wir das Zählwerk am Ausgang mit ein, so erhalten wir eine automatische Division durch 4 und Anzeigen der Reste 0, 1, 2 oder 3. Lassen wir den Impulsgeber nicht nur auf den Eingang wirken, sondern steuern wir mit ihm auch noch einen Eingangszähler (über eine Verstärkerröhre), so können wir gleichzeitig den Dividenden, den Quotienten und den Rest ablesen. Mehrfaches Einschalten gibt die Werte der Funktion

$$Z = A + \frac{a}{4} + \frac{b}{4} + \dots$$

Bei Erweiterung auf 3 Binaden könnten entsprechende Operationen mit der Zahl 8 durchgeführt werden, bei 4 Binaden mit 16 usw. Am Prinzipiellen ändert sich dadurch nichts mehr.

Ausblick

Da wir uns in der Arbeitsgemeinschaft nur vorgenommen hatten, einen begrenzten Ausschnitt aus der elektronischen Rechentechnik näher auszuleuchten und auf seine Demonstrierbarkeit hin zu untersuchen, konnten wir mit der Konstruktion unseres Geräts dieses Kapitel abschließen.

Wir haben uns bei der Auswahl der Bauteile auf die am Ort käuflichen Artikel beschränkt, und es zeigte sich, daß sich das Prinzipielle auch ,,mit Bordmitteln" darstellen ließ.

Hinter all diesen Versuchen steht natürlich eine große Menge physikalischen Wissens aus dem Unterricht, das hier in Wiederholung und Festigung sinnvolle Anwendung fand.

Zudem konnten auf diesem Wege Anregungen gegeben werden, sich mit den Grundlagen und dem weiteren Ausbau der Elektronik und Automatik näher zu beschäftigen.

Jürgen Fittschen

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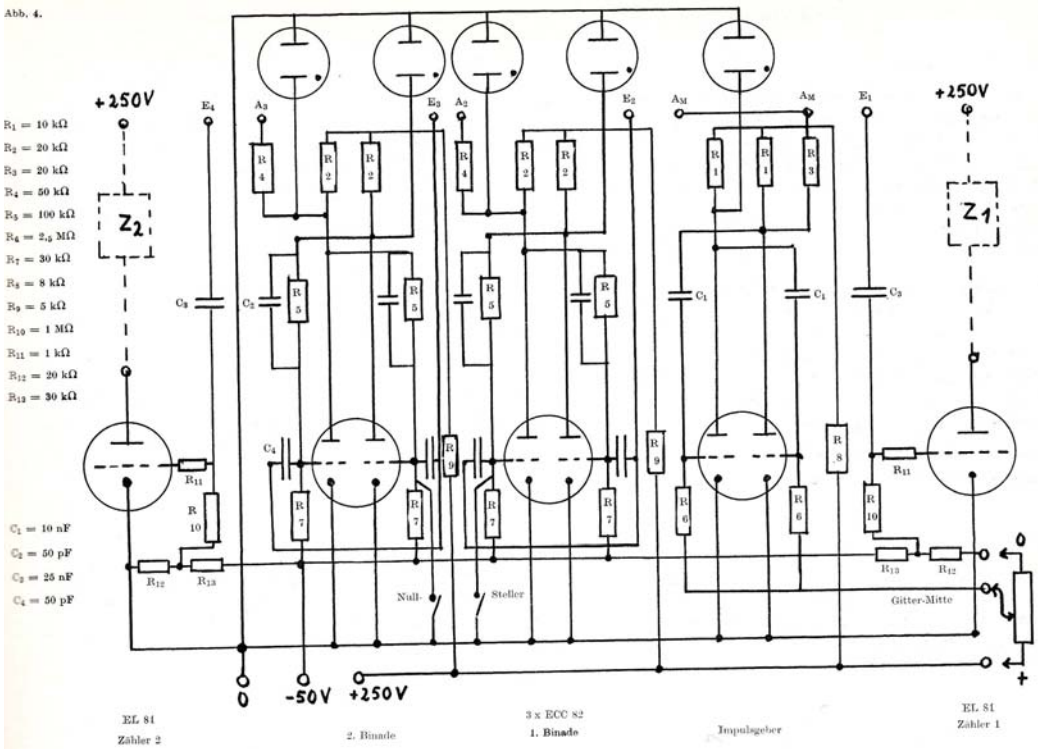
Abb. 4.



$R_1 = 10\ k\Omega$
$R_2 = 20\ k\Omega$
$R_3 = 20\ k\Omega$
$R_4 = 50\ k\Omega$
$R_5 = 100\ k\Omega$
$R_6 = 2{,}5\ M\Omega$
$R_7 = 30\ k\Omega$
$R_8 = 8\ k\Omega$
$R_9 = 5\ k\Omega$
$R_{10} = 1\ M\Omega$
$R_{11} = 1\ k\Omega$
$R_{12} = 20\ k\Omega$
$R_{13} = 30\ k\Omega$

$C_1 = 10\ nF$
$C_2 = 50\ pF$
$C_3 = 25\ nF$
$C_4 = 50\ pF$

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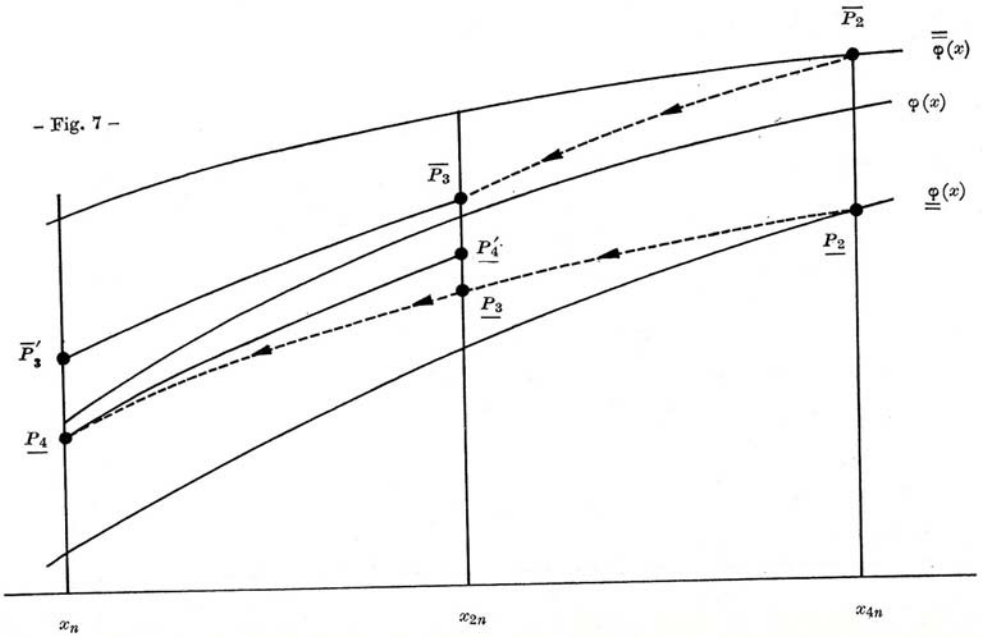
3) Approximation der Funktion $\varphi(x)$ über kleinen Intervallen

Eine Kombination der Abbildungsmethode (34) und der Fasermethode (29) ermöglicht einen gegenüber der reinen Abbildungsmethode rechnerisch einfacheren Weg zur Approximation von $\varphi(x)$ über kleinen Intervallen wie $x_n \leqq x \leqq x_{2n}$. In Fig. 7 ist dieser Weg schematisch dargestellt:

– Fig. 7 –



Diese gemischte Methode leistet bei der Berechnung von Näherungswerten der Zahl π gute Dienste (III, 1). Nach den Abbildungen

$$\overline{P}_2 \to \overline{P}_3,$$
$$\underline{P}_2 \to \underline{P}_3 \to \underline{P}_4$$

wählt man die Faserabschnitte $\overline{P}_3\overline{P}_3'$ und $\underline{P}_4\underline{P}_4'$, deren Quoten bezüglich der Schranken $\overline{\overline{\varphi}}(x)$ und $\underline{\underline{\varphi}}(x)$ durch die Punkte $\overline{P}_3$ bzw. $\underline{P}_4$ bestimmt werden.

B) Name of school directors

Name	Date
Engelking, H.A.	1868-1874
Goedel, A.	1874-1879
Mühlmann, Felix Th.	1879-1887
Dr. Lang, Karl	1887-1892
Dr. Schwatlo, Hans	1893-1907
Dr. Soehring, Otto	1907-1914
Dr. Tominski, Paul	1915-1918
Preusser, Richard	1918-1924
Scheuermann, Ludwig	1928-1944
Prof. Dr. Steuerwald, Karl	1953-1956
Dr. Tenbrock, Robert Hermann	1956-1960
Dr. Phil. Rothfritz, Herbert	1960-1961
Anstock, Heinz	1961-1964
Reinhold, Richard R.	Today

The data after 1964 could not be found.

C) Interview protocol

Before I start the interview, I'd like to make some statement for interviewees.

The purpose of this interview is to get information that will help to understand reason(s) of career choice of Deutshe-Schule-İstanbul`s graduates. As someone who was in this school, you are in a unique position to describe what the school does and how it affects pupils. And what's the interview about your experiences.

The answers from all the people I interview, and I'm interviewing about 20 people, will be combined in my study. Nothing you say will ever be identified with you personally. As we go through the interview, if you say any questions about why I'm asking something, please feel free to ask. Or if there's you don't want to answer, just say so. The purpose of the interview is to get your insights about how the school operates and how it affects pupils. [1]

And questions before we begin?

[1] PATTON, M. (1990). Qualitative Evaluation and Research Methods. Sage, London.

D) Interview guide questions

CATERGORY	ASPECT	QUESTIONS
1. Experience/Behavior in the Deutsche Schule	1.1.2 Socio-cultural status of School Life	1. If I followed you through a typical day in Deutsche Schule, what would I see you doing, what experiences would I observe you having? 2. How was the first day of in the school?
	1.3 School Environment	3. Which school did you attend before Deutsche Schule? 4. What kind of differences did you notice between your previous school and Deutsche Schule?
	1.5-5a Socio-economic status of the graduate	5. Which mode of transportation did you use to while going to the school? a. Where did you live at that time?
	1.6.7 Goal Setting (Career decision process)	6. When did you decide to be an engineer/economist? 7. What was the motivation behind it? (if parents)
	1.7a Socioeconomic and socio-cultural status of his/her parents	a) What was your parents` occupation?
	1.7b.c Interrelation status of his/her parents	b) Which foreign languages did they speak? c) What kind of contacts did they have with Germans or Germany?
	1.7d. Socio-economic status of his/her parents or community (to understand what are the reasons behind attending this school)	d) I'm interested in learning more about you as a person and your parents. What is it about you that you think that they led you to attend this school?
	1.7e.f Socio-cultural status of his/her parents	e) Do you have any sisters or brothers? f) Which schools did they attend?
2.Opinion/Value in Deutsche Schule	2. Curriculum and Teacher's attitudes	

	2.8-9Social status of both German and Turkish teachers	8. What kind of differences you noticed between German and Turkish teachers? 9. Ok, you mentioned several differences. Let me ask you your opinion about the each of the things you've mentioned. What do you think about…?
	2.9a-b-c- How the curriculum is performed?	a) Based on your experiences how often did teachers follow the text books? b) How often did they use laboratories for courses? c) How often did you present your homework in front of the class?
	2.10-11-12-14 motivation of students, teachers` attitudes	10. Let me ask you now about some of your feelings about the courses. What are the some of things that you really have liked about the courses? • How did the course(s) affect you personally? 11. What about dislikes? What are some of the things you don't like so much about the courses? • How did the course(s) affect you personally? 12. Suppose you got 10 from all your courses, would the school award you? 13. When you think about your school life, what is the best recollection for you? 14. What about the worst?
3. Knowledge	3.15-16-17-18-19 Social relations and activities in the school.	15. When 19 May came and what did you do with your friends and teachers? 16. How often did participate in trips? 17. What kinds of activities did you do with your friends? 18. Where did you go with your friends and teachers during your school life? 19. How enjoyable was to play in the school building and its grounds?

	3.20-21-22-23-Division of labor: The power relations between students and teachers	20. Suppose, you were fighting with a pupil in the school ground, how would you have been punished? 21. What were the other punishments for? 22. Suppose you would like to address your teacher, how do address him/her? 23. What is your opinion about beatings in your school?
	5.24-Rules	24. How was your clothing like when you were going to the school? 25. What was your teacher's reaction when somebody came to class late? 26. What was the other rule(s) in the school? 27. What was your and your friend(s) behavior towards the rules?
4. Experience/opinion in the university	4-25- Study Choice	28. Now the next set of questions is about your university life. Which university and department did you graduate from?
	4-26 Reason of study choice	29. What was your motivation behind your choice? (parents, school, society)again • Could you say some more about that?
	4-27 The characteristic(s) of the Deutsche-Schule and the university (I will attempt to find out the influence of Deutshe-Schule in his/her university life and this will provide to understand the characteristic(s) of Deutsche Schule).	30. Based on your experiences, what kind of differences did you notice between your university and Deutsche Schule?

	4.28-a-b-c-d- Motivation of the university	31. Ok, you mentioned several differences. Let me ask you your opinion about each of the things you've mentioned. What do you think about…? a) Which lecture(s) did you like most? b) How did you feel about yourself in the school? c) Were you selective in your friendships at the university? What were your criteria? d) Let me ask you to think now what changes you see in your life because of university. How have you changed since you began the university?
	4.29- The impact on his/her career decision	32. If you think about your previous experiences, what was your purpose to be become an engineer/economist? 33. What do you think, who most affected you in that way? • Would you elaborate on that?
	4.31-32- Socio-economic status	34. How did you find your first job and what was your position? 35. What is your current job and what was your current position?
	4.33-34- Social and economic contact with Germany	36. How often do you have contacts with Germany in your business life? 37. How often do you go to Germany?
	4.35-36 The meaning of "engineering & economy" and "engineer & economist"	38. Based on your experiences, how do you consider the importance of "economy and engineering"? 39. Could you please tell me briefly what you relate **to** the term "engineer/economist", if you think of your professional experience?

	4.37- School satisfaction	40. How often do you use German? 41. What kind of German literature do you read? 42. What kind of German music do you like to listen? 43. How can you describe a "DSI" graduate? 44. If you had a choice today, would you like to attend to the DSI again? 45. Okay, you've been very helpful. I'd be very interested in any other feelings and thoughts you'd like to share with me to help me understand your experiences of the course and how it affected you.
5. Demographic	5-40- Socio-economic status	46. Where do you live now?
	5.41- Social status	47. Are you married?
	5.42-43-Sociocultural and socioeconomic status of his/her wife/husband	48. From which school did he/she graduate? 49. What is your wife/husband's occupation?
	5.44- Interrelation background of his/her wife/husband?	50. Which languages did he/she speak?
	5.45-46- Social status	51. Do you have any children? How many? 52. How old are they?
	5.47-48 Cultural status	53. Which school do they attend? 54. Which languages do they speak? 55. What are your future expectations **of** your children? 56. Anything at all you'd like to add? Thank you very much.

Erklärung

„Ich versichere an Eides Statt durch meine eigene Unterschrift, dass ich die eingereichte Arbeit selbständig und ohne fremde Hilfe angefertigt und alle Stellen, die wörtlich oder annähernd wörtlich aus Veröffentlichungen entnommen sind, als solche kenntlich gemacht und mich auch keiner anderen als der angegeben Literatur bedient habe. Diese Versicherung bezieht sich auch auf die in der Arbeit verwendeten Zeichnungen, Skizzen, bildlichen Darstellungen und dergleichen."

Hamburg, im Oktober, 2008
Fulya Damla Kentli