An Examination of the Implementation of Student-Centred Learning (SCL) in High Schools in North Cyprus

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ABSTRACT

Student-Centred Learning (SCL) was put into practice in schools in North Cyprus in 2005 to enhance the quality of education offered to students. The fact that no research has been carried out to examine the implementation of SCL in classroom practices in schools emphasized the necessity to conduct scientific research, which would make further improvements on the use of SCL possible. Accordingly, this study was designed for the purpose of examining the implementation of SCL in high schools regarding its main components that include *motivation, instructional strategies, distribution of power, teacher* and *student roles* and *assessment*.

Sequential explanatory design within mixed-method research was employed in the study. Student-Centred Learning Inventory (SCLI) was administered to high school teachers. In addition to that, semi-structured interviews were also incorporated to the study to gather further in-depth data with respect to the implementation of SCL. The population of the study was 460 teachers teaching in general high schools. The sample included 309 teachers teaching in 11 high schools across North Cyprus. Two different types of data, both quantitative and qualitative, were collected in two different phases. In the first phase, Student-Centred Learning Inventory (SCLI) composed of five scales representing main components of SCL was administered to teachers in order to find out teachers' perceived use of SCL in classroom teaching and learning. In the second phase on the other hand, Student-Centred Learning Interview form (SCLIF) was used to generate in-depth data regarding teachers' use of SCL and further explore the barriers, if any, that hinder its implementation in the specified context. For the analysis of the data obtained via the SCLI, descriptive statistics that included the calculation of means and standard deviations were applied.

In addition to that, t-test and one-way ANOVA test were administered. With respect to the data collected from the interviews, content analysis was utilized.

The results of the study demonstrated inconsistencies regarding the quantitative and qualitative data collected. Although teachers perceive themselves as implementing *motivation, instructional strategies,* and *teacher and student roles* at a high level, semi-structured interviews clearly demonstrated that teachers do not actually implement these components in most aspects. *Distribution of power* was found to be the least frequently implemented component of all. This component is perceived to be used at a moderate level, whereas in-depth data revealed that teachers do not share power in classroom practices. Moreover, although the teachers have different perceptions of the frequency level with which they use the *assessment* component, interviews demonstrated that this component is not implemented at all.

The findings revealed that *gender* and *subject taught* do not seem to have an impact on the implementation of SCL. On the other hand, with respect to the *teaching experience,* teachers with 6-10 years of experience seem to use the *authoritarian approach* more than teachers with 16-20 years of experience. With regard to *pedagogical knowledge*, the teachers who are graduates of teacher education programs seem to implement some of the components and factors of SCL more than the teachers with a teaching certificate.

According to the teachers, there are serious barriers that hinder the use of SCL in high schools in North Cyprus. *Student profile, curriculum, teachers, learning*

resources, parents and *structure of classrooms* were reported to be main barriers that hinder its use in high schools.

As a result of all the findings obtained from the study, it can be concluded that although SCL has been implemented in schools since 2005, the main elements of traditional teaching still dominates the teaching and learning process in high schools. The results of the study clearly revealed that SCL including its five main components is not implemented in classrooms in most aspects. *Gender* and *subject taught* do not seem to have an effect on the use of SCL whereas regarding *teaching experience* teachers with 6-10 years of experience seem to use the *authoritarian approach* more than teachers with 16-20 years of experience. *Pedagogical knowledge*, on the other hand, was reported to have a significant effect on the implementation of SCL as teacher education program graduates seem to implement SCL more compared to teachers with a teaching certificate. According to the teachers, *student profile, curriculum, teachers, learning resources, parents* and *structure of classrooms* are the main barriers that hinder the use of SCL in schools. Based on all the findings, it can be said that SCL approach is not implemented at a sufficient level in high schools in North Cyprus.

Keywords: Student-centred learning, teaching and learning, teachers' perceptions, high-schools, North Cyprus.

ÖZ

Öğrenci-Merkezli Öğrenme (ÖMÖ), öğretim kalitesini artırmak amacıyla, 2005 yılında Kuzey Kıbrıs'taki okullarda uygulanmaya konmuştur. Bu alanda yapılan araştırmaların olmayışı, ÖMÖ'nün uygulanmasının geliştirilmesine olanak sağlayacak bilimsel çalışmaların yapılması gerekliliğini ortaya koymuştur. Bu bağlamda, bu araştırma ile ÖMÖ yaklaşımının beş ana boyutunu oluşturan *güdülenme, öğretim stratejileri, öğretmen ve öğrenci rolleri, güç paylaşımı* ve *değerlendirmenin* Kuzey Kıbrıs'taki liselerdeki uygulanmasının incelenmesi amaçlanmıştır.

Araştırmada, karma araştırma yöntemi içerisinde yer alan sıralı açıklayıcı desen kullanılmıştır. Öğrenci-Merkezli Öğrenme Envanteri (ÖMÖE) liselerde görev yapan öğretmenlere uygulanmıştır. Buna ek olarak, ÖMÖ'nün uygulanmasıyla ilgili derinlemesine veri toplamayı amaçlayan, yarı-yapılandırılmış görüşmeler araştırmaya dahil edilmiştir. Araştırmanın evrenini, liselerde tam-zamanlı olarak öğretim veren 460 öğretmen, örneklemini de 11 genel lisede görev yapan 309 öğretmen oluşturmuştur. Araştırmada iki ayrı aşamada gerçekleştirilen, hem nicel hem de nitel olmak üzere iki tür veri toplanmıştır. İlk aşamada, öğretmenlerin ÖMÖ'nün sınıf içerisindeki uygulanmasıyla ilgili algılarını ortaya çıkarmayı amaçlayan, ÖMÖ'nün beş boyutunu temsil eden ve beş ölçekten oluşan ÖMÖE'i uygulanmıştır. İkinci aşamada ise, ÖMÖ'nün uygulanması ile ilgili derinlemesine veri elde etmek ve ayrıca uygulanmasını zorlaştıran etmenleri, eğer varsa, belirlemek için Öğrenci-Merkezli Eğitim Görüşme Formu (ÖMÖGF) kullanılmıştır. ÖMÖE'den elde edilen verilerin analizinde, aritmetik ortalama ve standart sapmaların

hesaplanmasını kapsayan betimleyici istatistik kullanılmıştır. Buna ek olarak, tek yönlü varyans analizi (ANOVA) ve t-test uygulanmıştır. Görüşmelerden elde edilen veriler ise içerik analizi yoluyla analiz edilmiştir.

Araştırma sonuçları, araştırmada elde edilen nicel ve nitel veriler arasında tutarsızlıklar olduğunu ortaya koymuştur. Öğretmenler, *güdülenme, öğrenme stratejileri,* ve *öğretmen ve öğrenci rolleri* boyutlarını yüksek düzeyde uyguladıklarını algılamalarına rağmen, yarı-yapılandırılmış görüşmeler bu boyutların yeterli düzeyde uygulanmadığını açıkça ortaya koymuştur. *Güç paylaşımı* en az düzeyde uygulanan boyut olarak saptanmıştır. Bu boyutun orta düzeyde uygulandığının algılanmasına rağmen, derinlemesine veriler öğretmenlerin sınıf içerisinde güç paylaşımı yapmadığını göstermiştir. Üstelik, *değerlendirme* boyutunun uygulanma sıklığı ile ilgili farklı görüşler ortaya konmasına karşılık, bu boyutun hiç uygulanmadığı yapılan görüşmelerle belirlenmiştir.

Cinsiyet ve *öğretilen dersin,* ÖMÖ'nün uygulanmasında herhangi bir etkisinin olmadığı, ama *öğretme deneyimi* açısından bakıldığında, 6-10 yıl arasında deneyime sahip öğretmenlerin *otoriter yaklaşımı* 16-20 yıl deneyime sahip olan öğretmenlerden daha fazla kullandıkları belirlenmiştir. *Pedagojik formasyon* göz önünde bulundurulduğunda, eğitim fakültesi mezunu olan öğretmenlerin, öğretmenlik sertifikası olan öğretmenlere göre ÖMÖ'nün kimi boyut ve öğelerini daha çok uyguladıkları ortaya çıkmıştır.

Öğretmenlere göre, ÖMÖ'nün Kuzey Kıbrıs'taki liselerde uygulanmasını engelleyen ciddi etmenler bulunmaktadır. Öğrenci profili, eğitim programı, öğretmenler, öğrenme kaynakları, aileler ve sınıfların yapısı, öğrenci-merkezli eğitimin liselerde uygulanmasını engelleyen ana etmenler olarak belirlenmiştir.

Araştırmada elde edilen tüm veriler sonucunda, ÖMÖ'nün, 2005'den beri okullarda uygulanmasına rağmen, geleneksel eğitim yaklaşımının ana özelliklerinin, genel liselerdeki öğretme ve öğrenme sürecine hakim olduğu sonucuna varılabilir. Araştırma sonuçları, beş ana bileşeninden oluşan ÖMÖ'nün sınıflarda bir çok yönden uygulanmadığını ortaya koymuştur. *Cinsiyet* ve *öğretilen dersin*, ÖMÖ'nün uygulanmasında herhangi bir etkisinin olmadığı, ama *öğretme deneyimi* açısından bakıldığında, 6-10 yıl arasında deneyime sahip öğretmenlerin *otoriter yaklaşımı* 16-20 yıl deneyime sahip olan öğretmenlerden daha fazla kullandıkları belirlenmiştir. *Pedagojik formasyon* göz önünde bulundurulduğunda, eğitim fakültesi mezunu olan öğretmenlerin, öğretmenlik sertifikası olan öğretmenlere göre ÖMÖ'nün kimi boyut ve etmenlerini daha çok uyguladıkları ortaya çıkması pedagojik formasyonun ÖMÖ'nün uygulanmasında önemli rol oynadığını ortaya koymuştur. Öğretmenlere göre, *öğrenci profili, eğitim programı, öğretmenler, eğitim kaynakları, aileler ve sınıfların yapısı*, öğrenci-merkezli eğitimin liselerde uygulanmasını engelleyen ana etmenlerdir. Toplanan tüm verilere dayanarak, ÖMÖ'nün Kuzey Kıbrıs'taki liselerde yeterli düzeyde uygulanmadığı söylenilebilir.

Anahtar sözcükler: öğrenci-merkezli öğrenme, öğretme ve öğrenme, öğretmen algıları, liseler, Kuzey Kıbrıs.

To My Family

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LIST OF ABBREVIATIONS

SCL : Student-Centred Learning

TCT : Teacher-Centred Teaching

SCLI : Student-Centred Learning Inventory

SCLIF : Student-Centred Learning Interview Form

Chapter 1

INTRODUCTION

In this chapter, the background of the study, problem statement, purpose of the study including the research questions, significance of the study, assumptions, limitations, and definition of terms used throughout the study are presented.

1.1 Background of the Study

Recently there have been educational reforms and developments all over the world which aim to improve the quality of education. Today, it is important to develop and implement instruction to foster students' skills to communicate, think and reason effectively, make judgments about a wide range of information, solve complex problems and work collaboratively in teams (Gijbels, Watering, Dochy and Bossche, 2006). Previous research conducted in the field of education has already proven that it is difficult to achieve aforementioned skills with traditional, teacher-centred teaching (TCT) in which teacher dominates the instruction while students passively receive the knowledge transferred by the teacher (Vighnarajah, Luan and Bakar, 2008).

Teacher-centred way of teaching has been criticized a lot due to the fact that students taught primarily with traditional approaches are not able to use their knowledge in real-life situations in order to solve complex problems (Blumberg, 2009; Gijbels et al., 2006; Stes, Gijbels and Petegam, 2007). As Flavell and Piaget (1963) stated,

> … typical approach in the teaching and learning process in which the students were subject to in schools have only managed to produce inert knowledge… This inert knowledge is only good to be used to answer questions on a school test but is not effective in solving problems in real life (as cited in Vighnarajah, Luan and Bakar, 2008, p. 36).

Brooks and Brooks (1999) define traditional TCT as "long dominant pretest-teach-posttest model of instruction" (p. viii). They argue that traditional TCT is designed to prepare students to tests and it does not foster deep learning. They further remark that students within this conventional education system simply are not learning even though they are getting passing grades from their tests. Traditional TCT puts emphasis on didactic lectures and ignores the active participation of students in the teaching and learning process. As Vighnarajah et al. (2008) state although there seems to be an active transfer of information from teacher to students through lectures, only little learning is taking place. "Lecture is an inefficient vehicle for bringing about effective learning, with students retaining as little as 5% of the material covered…" (Ellington, 1996, p. 13). Lecturing, explaining, demonstrating, questioning and discussing, seatwork and homework are the most commonly used teacher-centred methods and techniques in education (Santrock, 2001).

Today, educators and researchers claim that it is difficult to reach the desired learning outcomes with the use of traditional teaching methods which mainly encourage rote memorization of facts loading students with excessive information that can hardly be used in real life. Students educated with traditional methods lack very important learning skills such as problem solving and critical thinking. Moreover, traditional teaching is inadequate in encouraging teamwork, fostering the development of research skills and self-regulated learning strategies (Vighnarajah et al., 2008). Ellington (1996) criticizes TCT for encouraging "spoon feeding" and not

challenging students in the learning process. As a result of all these negative criticisms, today teachers are not advised to implement TCT in their classrooms anymore.

Student-centred learning (SCL) has emerged as a reaction to TCT aiming at improving the quality of education offered to students. SCL was first put into practice in the United States in the 1960s and soon after that spread to other countries around the world. SCL is a teaching and learning approach that places students at the centre of instruction rather than the teacher and/or the content taught. SCL considers the needs, characteristics, abilities, interests and preferences of students in the teaching and learning process, it involves students in decision making processes regarding all stages of instruction, and it also encourages the active participation of students in classroom teaching and learning (Özer, 2008). SCL has its roots in constructivism. According to constructivism, knowledge cannot be passively received from outside, instead, it is constructed by individuals through making sense of their experiences and interacting with people in the real world.

Current research reveals that SCL is more effective than traditional TCT because it encourages deep approach to learning, increases the acquisition and retention of knowledge, leads to increased motivation to learn and more positive attitudes towards the subject-matter taught. The adoption of SCL is considered as the biggest paradigm shift in education. Today, educational institutions at all levels are expected to implement SCL effectively and efficiently in the teaching and learning process.

1.2 Problem Statement

Cyprus Turkish Education System consists of pre-primary, primary, secondary and tertiary levels provided by both public and private institutions. Pre-primary education is one year and is offered to 5 to 6 year old children. Primary education, on the other hand, is five years and is offered to children between 7 and 11. Education both at pre-primary and primary levels is compulsory for all children. Secondary education consists of lower secondary schools (middle schools) and upper secondary schools (high schools). Lower secondary schools include general, English-medium (known as English colleges) and fine arts institutions offering 3- year education to 12 to 14 year olds. Lower secondary schools are also within compulsory education. Upper secondary schools, on the other hand, consist of all general, Anatolian, science, fine arts, English-medium (English colleges), vocational, industrial and commercial schools offering 4-year education for persons aged between 15 and 18. Upper secondary schools are not included in nine-year compulsory education and are optional. There is a wide variety of alternatives especially regarding upper secondary schools. However, transition from primary schools to English-medium schools which are known as English colleges are governed through centralized nationwide exams. The competition to enter these schools is intense due to their popularity for offering high-quality education in English-language. Upper secondary education is the exit level to universities and other two-year higher education institutions of tertiary education. Regarding tertiary education, students need to graduate from upper secondary education institutions. Upon completion of secondary education, students have the option to sit the university entrance exam which is highly competitive, allocating students to a higher education institution in Turkey. While some students

choose to study in one of the private universities in North Cyprus, others prefer to study abroad in a European Union (EU) country, especially in England.

With respect to primary and secondary education, centrally planned curricula, which are organized according to subject areas, are used in all schools. In primary education, apart from a few subjects such as music and sports most subjects are taught by classroom teachers. However, in secondary education, all subjects are taught by teachers specialized on their subject.

The Ministry of National Education in North Cyprus needs to keep up with the current educational developments and reforms in order to improve the quality of instruction given in schools. The educational reform in North Cyprus is strongly influenced by the education systems in EU countries and "... its explicit aim is to harmonise the education system with the underlying principles of the EU" (Mertkan-Özünlü and Thomson, 2009). The major educational reform launched in North Cyprus is the shift to a new educational paradigm known as SCL.

In 2005, SCL was put into practice in schools at primary and secondary levels as a new teaching and learning approach (The Cyprus Turkish Education System, 2005). The previous approach, which was highly teacher-centred in nature, was criticized for fostering rote learning and overloading students with excessive knowledge that has little value and use in their daily lives. The adoption of SCL in schools in North Cyprus has led to major revisions in the Cyprus Turkish education system. The general aim of the new education system was modified giving utmost importance to educating individuals who are knowledgeable, are aware of knowledge, know how to

reach knowledge, acquire knowledge through attaching meaning to it, can produce knowledge and use it to solve problems. With the adoption of SCL in schools, the Ministry of National Education aims to equip students with necessary skills that enhance critical thinking, effective communication, collaboration, creativity, productivity and problem solving. According to the new regulations, the new education system introduced in the 2005-2006 academic year is responsible for providing students with appropriate environments within schools so that they can improve themselves in all aspects.

The curriculum used in schools has also been revised in accordance with the general aim of the Cyprus Turkish education system. In addition to some minor changes made to the curricula used in primary and secondary education, some course books were revised to better suit the principles and characteristics of SCL putting more emphasis on higher order cognitive skills including critical and creative thinking and problem- solving. The new programs aim to make students aware of their educational needs encouraging them to discover their psycho-motor and cognitive limits including their learning styles. Moreover, it aims to equip students with learning-how-to-learn skills who can reach knowledge through identifying their learning needs and making use of necessary skills, abilities and attitudes suitable to their learning styles (The Cyprus Turkish Education System, 2005). Instead of a teaching philosophy that puts teachers in the center of the teaching and learning process responsible for transferring knowledge presented in course books, the new programs are based on SCL that places students at the center of the teaching and learning process who are responsible for their own learning enabling them to reach knowledge with the use of various sources (The Cyprus Turkish Education System,

2005). Hence, "…being able to use teaching techniques within the understanding of pupil-centred education" (The Cyprus Turkish Education System, 2005) should be one of the professional qualities of teachers. According to the Ministry of National Education, today, the new curricula including teaching methods and techniques, and assessment procedures are based on SCL approach that fosters lifelong learning.

After the adoption of SCL, certain in-service training programs were offered to school teachers by the Ministry of National Education to ensure the effective use of SCL in schools at all levels. These in-service training programs are presented in Table 1.1.

Table 1.1

In-service Teacher Training Programs on SCL

Topic	Offered to	No of teachers participated	Date offered
Student-centred learning	High school teachers	163	September 2005
Project-based learning	Science teachers	41	December 2005
Creative teaching methods and techniques in music education	Music teachers	123	May-June 2006
Cooperative learning method	High school teachers	341	February 2007
Discovery learning method	High school teachers	392	February 2007
Constructivism	High school teachers	314	February 2007
Constructivist teaching and learning in physical education	Physical education teachers	54	September 2007
Portfolio as an alternative assessment method	English teachers	50	February 2008

As seen in Table 1.1, the in-service teacher training programs offered to high school teachers took place between the years 2005 and 2008. Some of the programs were

offered to teachers teaching specific subjects such as English and Music. All in-service teacher training programs offered by the Ministry of National Education were on a voluntary basis. Therefore, teachers did not have any obligations in attending these programs. The content of the in-service teacher training programs offered to high school teachers between the years 2005 and 2008 consisted of theoretical background on SCL, constructivism and discovery and cooperative learning methods. The only program focusing on alternative assessment methods was on portfolio assessment which was offered only to English language teachers ("Ölçme ve değerlendirme yöntemleri", n.d)

With respect to the adoption of SCL in schools, the Ministry of National Education has put some theoretical knowledge regarding the assessment system on its website ("Eğitim süreci içinde ölçme ve değerlendirmenin yeri", n.d) The theoretical knowledge includes information about performance evaluation including what it is and why it is important. There is also information about alternative assessment methods such as portfolio, projects and group work. The alternative assessment methods contain information about the way they are used and their benefits to students in the teaching and learning process. The information on the web also underlines the fact that the assessment used in schools should focus on the process rather than the product. Therefore, teachers should try to use alternative assessment methods and not rely only on traditional methods such as multiple choice tests.

Although the Ministry of National Education claims that SCL has been implemented for seven years, not much has been done to assess its implementation in schools in North Cyprus. The extent to which it is being implemented can be assessed through

the use of various methods. However, as teachers play the key role in implementing any curriculum, exploring their perceptions and opinions should be one of the main methods employed in such studies. As Toh et al. (2003) state "countries can build new schools, equip them with the latest computers and information technology and revise the curriculum to suit changing global needs but it is the teacher who has to provide strong linkages between the structures, processes and resources and the learners" (p.195). Consequently, this research study is based on the idea of assessing the use of SCL through investigating teachers' perceptions and opinions of the implementation of SCL in classroom practices in schools.

1.3 Purpose of the Study

The purpose of this study is to examine the implementation of SCL in high schools in North Cyprus based on the perceptions and opinions of teachers teaching in schools. The study addressed the following three research questions:

1. To what extent is SCL implemented in classroom teaching and learning in high schools in North Cyprus with respect to
   (a) motivation,
   (b) instructional strategies,
   (c) distribution of power,
   (d) teacher and student roles and
   (e) assessment?

2. How does teachers' implementation of SCL in high schools in North Cyprus vary regarding their characteristics including
   (a) gender,
   (b) subject taught,

(c) teaching experience and

(d) pedagogical knowledge?

3. What are the teachers' opinions of the main barriers, if any, that hinder the effective use of SCL in high schools in North Cyprus?

1.4 Significance of the Study

The success of a new teaching and learning approach depends largely on a careful assessment of its implementation in schools followed by studies of revisions and improvements. As Cullen and Harris (2009) state "academic leaders need mechanisms to assess the current academic environment in order to have a clear understanding of where they are and the steps that will be involved in making progress towards the learner-centered goal" (p. 116). The Ministry of National Education in North Cyprus also needs to review the education system in order to be aware of the current situation regarding the use of SCL in schools at all levels. The extent to which SCL is implemented and the barriers that hinder the effective use of SCL in schools is an area that needs to be explored in depth. Therefore, this study is expected to play an important role in highlighting the current teaching and learning processes with respect to the use of SCL in schools and enabling the related bodies to make certain modifications to promote the effective use of SCL in schools.

This study is important for all the stakeholders especially for the Ministry of National Education including curriculum developers, teacher trainers, inspectors and principals by providing them with the opportunity to make the necessary amendments and also improvements regarding the teaching and learning programs and procedures in schools. The findings of this study are expected to provide the

Ministry of National Education with the opportunity to identify the needs of teachers and thus organize necessary in-service training to enhance their knowledge and skills promoting the effective use of SCL in classroom practices. In addition, the results of this study are expected to provide invaluable data to teacher training programs offered at universities enabling them to revise their programs accordingly. Moreover, the study is beneficial to school teachers making them aware of their use of SCL focusing on areas that need to be improved and also factors that hinder its use in the current teaching and learning environment. The results are also beneficial to students and parents informing them of the use of SCL in schools increasing their awareness on their responsibilities and roles in a student-centred teaching and learning environment. Therefore, the extent to which SCL is implemented and potential barriers, if any, that hinder the effective use of SCL is an area that needs to be explored in depth for the betterment of current teaching and learning regarding the implementation of SCL in schools in North Cyprus.

1.5 Assumptions

The important assumptions in this study are as follows:

- The extent to which SCL is implemented can be explored through the analysis of data that would be obtained from the main components of SCL including motivation, instructional strategies, teacher and student roles, distribution of power and assessment.

- The extent to which SCL is implemented can be explored based on teachers' perceptions and opinions.

- The participants of the study (high school teachers) would respond correctly to the data collection tools used that included the inventory and interviews with respect to their use of SCL in classroom teaching and learning.

1.6 Limitations

This study was limited to the following:

- General high schools in North Cyprus. Vocational, technical, fine arts and Anatolian high schools were excluded from the study.

- The data gathered from high school teachers in the 2010-2011 academic year.

- The data collected through the use of SCL inventory and interviews.

- The data gathered on the main components of SCL that included motivation, instructional strategies, teacher and student roles, distribution of power and assessment.

1.7 Definition of Terms

The following are the initial definitions for important terms and concepts within the context of this study:

Student-Centred Learning (SCL): A teaching and a learning approach which puts students at the centre of teaching and learning by focusing on needs, abilities, interests and learning preferences of individual students. It involves students in

decision making process encouraging their active participation in classroom teaching and learning (Özer, 2008).

Teacher-Centred Teaching (TCT): Traditional teaching approach in which teacher is regarded as the exact authority who is responsible for knowledge transmission to students in the form of lectures. Students are regarded as passive recipients of knowledge who have no say in the teaching and learning process (Özer, 2008).

Constructivism: An epistemology or philosophical explanation about the nature of learning arguing that knowledge is not passively received from outside but constructed by individuals through making sense of their experiences and interacting with people in real life (Maclellan and Soden, 2004).

High school: Level of education that comes after middle schools including all general, vocational, technical, fine arts and Anatolian education institutions offering minimum four-year education for persons aged 14 and 17. It is out of compulsory basic education.

Motivation: An internal process activating, guiding and maintaining behavior over time that may vary in intensity and direction. It is considered as a precondition for effective learning (Slavin, 2000).

Intrinsic motivation: Kind of motivation based on internal factors such as self-determination, curiosity, challenge and effort (Santrock, 2001). SCL highlights the importance of intrinsic motivation in the teaching and learning process.

External motivation: Type of motivation that involves the use of external incentives such as rewards and punishment (Santrock, 2001).

Instructional strategies: Methods, procedures and techniques teachers use to present subject matter to students in order to accomplish predetermined learning outcomes (Oliva, 2005).

Teacher and student roles: Responsibilities, attitudes and behaviours of both teacher and students required for effective learning in the teaching and learning process (Doyle, 2008).

Distribution of power: Involving students in decision-making process in all stages of the teaching and learning process through considering their opinions and providing them with choices (Weimer, 2002).

Assessment: Measuring the degree to which students have achieved the predetermined learning outcomes through the use of various methods such as written tests, homework and questions asked verbally in class (Slavin, 2000).

Chapter 2

REVIEW OF LITERATURE

This chapter consists of two sections. The first section contains the necessary theoretical background on student-centred learning (SCL) including its implementation in classroom teaching and learning with respect to motivation, instructional strategies, distribution of power, teacher and student roles and assessment. The second section includes current research conducted on SCL. Some of those studies are on the effectiveness of SCL as opposed to traditional teacher-centred teaching (TCT) with regards to cognitive and affective aspects of SCL including teachers' and students' perceptions of, opinions and attitudes towards SCL. Some others are on the implementation of SCL in various countries.

2.1 Theoretical Background on Student-Centred Learning (SCL)

2.1.1 Definition of Student-Centred Learning

According to researchers, interest in SCL has been long-standing among educators in primary, secondary and higher education. As they put it, one of the main problems within this approach lies in its definition. There is considerable disagreement and confusion about what SCL actually is. According to Özer (2008), SCL is a teaching and learning approach that puts students at the centre of teaching, considers the needs of students in the teaching and learning process, involves students in decision making process and encourages active participation of students in class.

As Cannon and Newble (2000) define, SCL is a way of thinking and learning that highlights student responsibility and activity as opposed to strong focus on teacher control and academic content found in traditional didactic teaching.

Based on their research, Attard, Di lorio, Geven and Santa (2010) propose the following definition in the SCL toolkit prepared by the European Students' Union (ESU) and Education International (EI):

> … a learning approach which is broadly related to, and supported by constructivists theories of learning. It is characterized by innovative methods of teaching which aim to promote learning in communication with teachers and other learners and which take students seriously as active participants in their own learning, fostering transferable skills such as problem-solving, critical thinking and reflective thinking.

According to Weimer (2002), SCL is "a new way of thinking about teaching and learning tasks and responsibilities. It is transformational. As you start down this road, you need to realize that it will take you to a very different instructional place" (p. xxii).

According to Geven and Santa (2010) any definition of SCL has both an ontological and an epistemological dimension. "It is ontological, because it requires a fundamental concept of a student as a human being. It is epistemological, because this concept requires a specific approach, a method to bring about learning" (p. 3). In SCL students should be seen as human beings who have a certain personal autonomy. The ontological view is justified by two developments. Firstly, communities require educated, independent citizens who possess critical thinking skills. Secondly, lifelong learning requires students to be autonomous learners. The epistemological view; a change of approach on the other hand, requires SCL to shift

the focus from teaching to learning. As Geven and Santa (2010) assert, education should be regarded as a constructive, collaborative and a democratic process between teachers and students and among students as well.

SCL is a new teaching approach and may sometimes be misunderstood by students, teachers and researchers. Weimer (2002) explains the common misconceptions underlining the fact that SCL does not mean giving away teacher authority, having content-free courses, giving students more responsibility than they are ready and prepared to take or getting students assign grades to each other.

To sum up, SCL is a teaching and a learning approach that puts students at the centre of learning through considering their characteristics, needs, abilities and interests in the teaching and learning process. In SCL, students are regarded as partners and are involved in decision making process at all stages including planning, instruction and assessment. Students are active participants who take the responsibility for their own learning.

2.1.2 Differences between Student-Centred Learning and Traditional Teacher-Centred Teaching

The two approaches student-centred learning (SCL) and teacher-centred teaching (TCT) are two contrasting paradigms that differ in their underlying philosophies, approaches and methodology (Ellington, 1996). Since the two approaches are regarded as extremes they are usually represented at opposite ends on a continuum.

Brandes and Ginnis (1986) designed two different models in order to highlight the difference between two approaches to teaching and learning; traditional, teacher-centred teaching and student-centred learning. Traditional, teacher-centred model is displayed in Figure 2.1 and student-centred model in Figure 2.2.

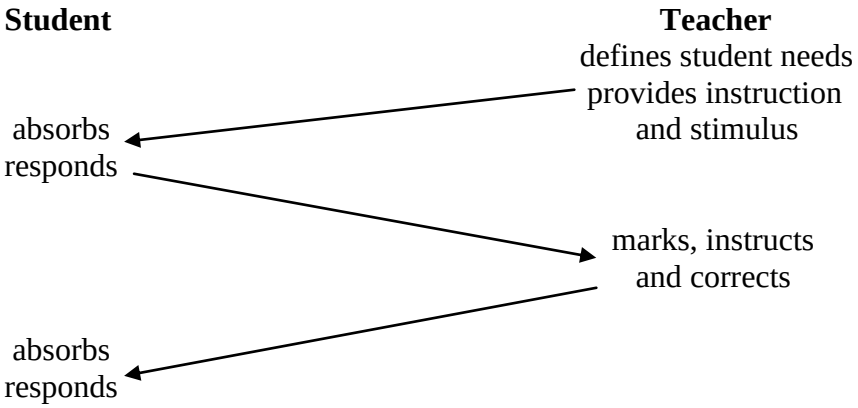

Figure 2.1 Traditional, teacher-centred model. Taken from Brandes and Ginnis, 1986, p. 15.

In the traditional, teacher-centred model, teacher firstly interprets the needs of students in class. Based on these interpretations, the teacher imparts necessary knowledge and skills to the students. The students are busy working on tasks assigned by the teacher. "The teacher is the hub or generator of all activity and is the controller of events. Students are totally dependent on the teacher to learn – remove the teacher for a while and students mess about" (p. 168). The weakness of this approach is that it does not train students to take responsibility for their own learning and engage in self-evaluation in the learning process. The students are taught explicitly and are not expected to discover anything on their own.

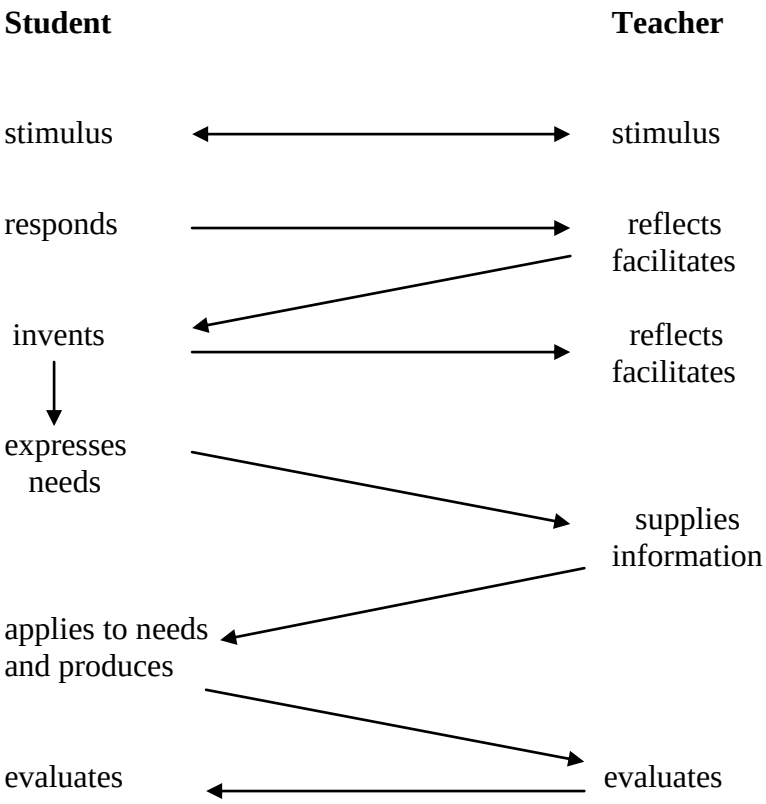

Figure 2.2 Student-centred model. Taken from Brandes and Ginnis, 1986, p. 16.

In the student-centred model, the teacher acts as a facilitator in the teaching / learning process. In this model, there is an interactive two-way process between the teacher and the students. The teacher is in control only for a temporary period of time and the students are the owners of the learning process. The students do not only learn from the teacher but also from each other through group and team work. There is transition of the roles of teacher and students leading to development for both parties. The students are motivated and self-determined who are learning how to learn beyond the class. There is shared control and power between the teacher and the students. In this model, it is important for the teacher to have the necessary knowledge and skills required for effective teaching. The teacher also needs to trust students in decision making. As Brandes and Ginnis (1986) argue, the schools must also support this

approach to teaching and learning, otherwise the teachers using this model may be exposed to negative reactions of others who use traditional model.

Brandes and Ginnis (1986) compared two approaches in different aspects. The comparison of the two approaches is shown in Table 2.1.

Table 2.1

The Comparison of SCL and TCT

	Progressive (Student-Centred Learning)	Traditional (Teacher-Centred Teaching)
1	Integrated subject matter	Separate subject matter
2	Teachers as guide to educational experience	Teacher as distributor of knowledge
3	Active pupil role	Passive pupil role
4	Pupils participate in curriculum planning	Pupils have no say in curriculum planning
5	Learning predominantly by discovery techniques	Accent on memory, practice and rote
6	External rewards and punishments not necessary, i.e. intrinsic motivation	External rewards used, e.g. grades, i.e. extrinsic motivation
7	Not too concerned with conventional academic standards	Concerned with academic standards
8	Little testing	Regular testing
9	Accent on cooperative group work	Accent on competition
10	Teaching not confined to classroom base	Teaching confined to classroom base
11	Accent on creative expression	Little emphasis on creative expression
12	Cognitive and affective domains given equal emphasis	Cognitive domain is emphasized; affective is neglected
13	Process is valued	Little attention paid to process

Note. Adapted from Brandes and Ginnis, 1986, p. 11.

2.1.3 History of Student-Centred Learning

Student-centred learning (SCL) is a term which is widely used in the teaching and learning literature. The concept of SCL was first appeared in Hayward's work in

1905 and then used by Dewey in 1950s (O'Sullivan, 2003, as cited in O'Neill and McMahon, 2005) but it is Carl Rogers, the father of client-centered counseling who expanded the approach into a general theory of education (Brandes and Ginnis, 1986; Burnard, 1999; Rogoff, 1999, as cited in O'Neill and McMahon, 2005). According to Brandes and Ginnis (1986) the term "Student-Centred Learning" was first invented by Carl Rogers. "The assumptions stem from the works of Carl Rogers and others, who have tested them and recorded the results on a regular basis over the years" (Brandes and Ginnis, 1986, p. 5). In his book *Freedom to Learn for the 80s*, Rogers described the traditional environment in educational settings and focused on shifting the power from 'expert teacher' to the 'student learner' (O'Neill and McMahon, 2005). Rogers suggests that the learning processes used in client-centred psychotherapy can be adapted to be used in student-centred education. According to Rogers (as cited in Brandes and Ginnis, 1986, p. 17), the aim of SCL is not only to enhance knowledge but to cause some changes in the students:

- The learner comes to see himself differently …
- He becomes more self-confident and self-directing
- He becomes more the person he would like to be
- He behaves in a more mature fashion
- He adopts more realistic goals for himself
- He changes his maladjustive behaviour
- He becomes more open to evidence, both to what is going on outside himself, … and inside himself.

SCL has first been used in the United States of America. Soon, most leading countries started to adopt this new approach to teaching in education. In the process of switching over to the SCL from TCT, most educational institutions started to revise their programs in order to suit to SCL. Before the introduction of SCL, the teaching in schools can be described as "wholly teacher-centred" in which students

sat passively in rows and teacher spent 90% of class time transferring information to students (Toh et al., 2003).

2.1.4 Philosophy behind Student-Centred Learning

Student-centred learning (SCL) is rooted in constructivism. Loyens and Gijbels (2007) define constructivism as "a view of learning that considers the learner as a responsible, active agent in his/her knowledge acquisition process" (p. 352). Constructivism emphasized that individuals learn best when they actively construct knowledge (Santrock, 2001). Students actively construct knowledge through activating prior knowledge and trying to relate new information to existing knowledge. As Forbes et al. (2001) argue, relating new information with the existing one leads to increase in retention, interest and motivation (as cited in Loyens and Gijbels, 2007). According to Vighnarajah et al. (2008), "constructivist approach does not allow for rote memorization but encourages the construction of meaningful knowledge and understanding" (p. 36). When students memorize content without attaching meaning to it, they usually forget it. However, engaging with the content and creating meaning enables students to remember and use knowledge in the future. When students engage with the content, they make their own associations, develop their examples of a concept, define concepts in their own words and reflect on the content through applying it to their own lives (Blumberg, 2009). "Students interact with the content by actively doing something with it – such as working in small groups to solve problems – rather than just hearing about it or reading it" (Blumberg, 2009, p. 108). Related research indicates that active engagement with the content maximizes student learning.

According to constructivism, knowledge is not something which is passively received from an authority. Instead, it is created by individuals through adapting and making sense of their experiential world and interacting with people around them (Maclellan and Soden, 2004). In constructivism, learning is not an internal process of knowledge transfer in which teacher transfers knowledge into students' memories. Teachers cannot construct knowledge for their students and students cannot use knowledge in new situations unless they integrate new knowledge with prior knowledge (Blumberg, 2009). As Maclellan and Soden (2004) state, learners are not empty vessels to be filled in but they are intellectually generative with the capacity to ask questions, solve problems, and construct knowledge.

As constructivism argues, knowledge and context are connected. Meaning is uniquely determined by the students through experiencing in real life contexts and hence, solving authentic problems provides evidence of understanding and learning (Gilis et al., 2008; Lea et al., 2003; Liu at al., 2009.). Constructivists agree that, learning tasks should consist of authentic situations in which students are confronted with complex problems similar to the ones in real-life. These problems challenge students and enable them to develop their reasoning and problem-solving skills.

Constructivism explicitly claims that learning only takes place when the knowledge is meaningful to the students. Consequently, it is crucial for students to engage in individual or social activities which enable them to create meaning and construct their own knowledge.

Constructivists contend that all learning emanates from the personal experiences of students through social interaction with others. The early advocates of the constructivism, Dewey, Vygotsky, and Piaget place students at the centre of learning rather than the teacher and the curriculum (Nordgren, 2006). Constructivism highlights the role of the student as an active participant and the teacher as a facilitator in the teaching and learning process.

In a constructivist classroom, the teacher focuses on how students understand concepts in learning and then create opportunities for them to refine or revise these understanding through posing contradictions, presenting new information, asking questions and encouraging research. Brooks and Brooks (1999) reported the common principles that should be found in constructivist classrooms. The principles are as follows (Brooks and Brooks, 1999):

- *Teachers seek and value their students' points of view.* Seeking to understand students' point of view is essential to constructivist education. "Students' points of view are windows into their reasoning" (p. 60). In constructivist classrooms, teachers consider students' perspectives on the topic because these perspectives enable teachers to understand students' present conceptions to be used in subsequent lessons. Being aware of each student's point of view leads to personalized education. Teachers who do not consider students' perspectives engage students in boring and irrelevant experiences in teaching and learning.

- *Classroom activities challenge students' suppositions.* Each student in the class has his or her life experiences that shape their understanding of truths about the world. Meaningful experiences that take place in the classroom support or contravene student's suppositions either by validating or transforming these truths. Constructivist teachers design lessons according to students' suppositions. While designing tasks it is important to bear in mind the cognitive demands required for the tasks.

- *Teachers pose problems of emerging relevance.* It is the teachers' responsibility to make subject areas or topics relevant, meaningful and interesting for students. Constructivist teachers design classroom experiences that enhance the formation of personal meaning. Posing problems of emerging relevance is a guiding principle of constructivist pedagogy. Relevance might not be pre-existing for the students. Therefore, it has to be created by the teacher. A teacher can make a topic relevant to students by engaging them in a problem-solving situation.

- *Teachers build lessons around primary concepts and "big" ideas.* In traditional classrooms, topics are usually presented in small, disconnected chunks and students usually memorize the material in order to pass tests. However, even students who get high grades are not able to apply small parts in real life contexts or build concepts and skills from parts to wholes. "These students often stop trying to see the wholes before all the parts are presented to them and focus on the small, memorizable aspects of broad units without ever creating the big picture" (p. 46). Constructivist teachers challenge

students to see and understand primary concepts and then focus on small parts. In constructivist classrooms, curriculum is presented from whole to part with an emphasis on big concepts and ideas. When concepts are presented as wholes, students try to make sense of the information by breaking the whole into small parts that they can understand. Students tend to use their own problem solving strategies in order to construct new information. Brooks and Brooks (1999) assert that students involved more when problems and concepts are presented holistically rather than in separate, isolated chunks.

- *Teachers assess student learning in the context of daily teaching.* Constructivist teachers incorporate student assessment directly into classroom activities and do not separate assessment from everyday activities and tasks that take place in class. "Assessment of student learning is interwoven with teaching and occurs through teacher observations of students at work through student exhibitions and portfolios" (p. 17).

2.1.5 Characteristics and Principles of Student-Centred Learning

According to the researchers and educators (Attard, Di lorio, Geven and Santa, 2010; Beaten, Kyndt, Struyven et al., 2010; Kember, 2008; Lea et al., 2003; Liu et al., 2009; Maclellan, 2008; O'Neill and McMahon, 2005; Özer, 2008; Sparrow et al., 2000) the main characteristics of SCL are as follows:

- The reliance on active rather than passive learning.
- An emphasis on deep learning and understanding.
- Increased responsibility and accountability of students.
- An increased sense of autonomy in students.

- An interdependence between teacher and students.
- An emphasis on prior experience of students.
- Teacher as a facilitator and a resource person.
- Mutual respect within the learner-teacher relationship.
- A reflexive approach to the teaching and learning process on part of both the teacher and the learner.

SCL has shifted the emphasis from teaching to learning in education. The increased interest in SCL principles of lesson planning and instruction has led to the development of *Learner-Centred Psychological Principles: A Framework for School Reform and Redesign* developed by the American Psychological Association (APA) task force in 1997 for the purpose of redesigning K-12 education. These principles, based on the results of research conducted for over a century, have been advocated by many well-known educators such as John Dewey, Jerome Bruner, Joseph Schwab and many others. These educators contend that learning and motivation are natural processes and students must be placed at the centre in order to be fully engaged in the learning process (McCombs and Miller, 2007). The principles are displayed in Table 2.2.

Table 2.2

The Four Domains of Learner-Centred Principles

Cognitive and Metacognitive Factors

1. *Nature of the Learning Process*
   Learning is a natural process of pursuing personally meaningful goals. Learning is an active, goal-oriented and self-regulating process of discovering and constructing meaning from individual learner's experience and information.
   Successful learners assume personal responsibility for their own learning.
2. *Goals of the Learning Process*
   Successful learners seek to create meaningful, coherent representations of knowledge. Over time and with support, students' understanding can be refined so that they can reach their long term goals. Educators can support students' creating personally meaningful learning goals that are consistent with their personal aspirations and interests, as well as with educational goals.
3. *The Construction of Knowledge*
   Successful learners can link new information with existing and future knowledge in meaningful ways. This linking integrates students' prior knowledge and understanding with new knowledge that can be used effectively in new tasks and transferred readily to new situations.
4. *Strategic Thinking*
   Successful learners can create and use various thinking and reasoning strategies to achieve complex learning goals and apply their knowledge to novel situations.
5. *Thinking about Thinking*
   Successful learner can develop higher-order strategies for selecting and monitoring mental operations, which facilitates creative and critical thinking. The learner develops metacognitive approaches for dealing with problems.
6. *The Context of Learning*
   Learning is influenced by variety of factors including culture, technology, and instructional practices. Technologies and practices must be appropriate for individual learners in order

Table 2.2 continued

   to provide a nurturing context for learning.

Motivational and Affective Factors

7. *Motivational and Emotional Influence on Learning*
   What a learner learns- and how much – depends on his/her motivation. Motivation to learn is influenced by the individual's emotional states, beliefs, interests, goals, and habits of thinking.
8. *Intrinsic Motivation to Learn*
   Individuals are naturally creative and curious, utilize higher-order thinking and enjoy learning, all of which contribute to motivation to learn. Intrinsic motivation to learn is stimulated by tasks that present optimal novelty and difficulty, are relevant to students' personal interests, reflect real-world situations, and provide for personal choice and control.
9. *Effects of Motivation on Effort*
   Without the motivation to engage in the effort required to acquire complex knowledge and skills, students' willingness is unlikely. Teachers can promote student effort through purposeful learning activities that are guided by practices that enhance positive emotions, and by methods that increase the learner's perception that a task is interesting and personally relevant.

Developmental and Social Factors
10.Developmental Influences on Learning Individuals experience different opportunities and situations as they develop physically, intellectually, emotionally, and socially. Learning is most effective when these individual developmental differences among learners are taken into consideration. *11.Social Influences on Learning* Social interactions, interpersonal relations, and communication with others all influence learning. Learning is enhanced when learners have opportunities to engage in interactive and collaborative instructional contexts.
Individual differences Factors
12.Individual Differences in Learning Learners have different strategies, approaches, capabilities and preferences for learning, each a function of prior experience and heredity. The degree to which these differences are accepted and adapted to is directly correlated with successful learning. *13.Learning and Diversity* The most effective learning occurs when learners perceive that their linguistic, cultural, and social backgrounds are taken into account. *14.Standards and Assessment* Effective learning takes place when learners are challenged to work toward appropriately high goals and when ongoing assessment is used to provide valuable feedback to learners about their understanding, knowledge and skills.

Note. Adapted from McCombs and Miller, 2007, pp. 30-31.

As it can be seen in the table, the principles are presented as a form of guidelines that consist of 14 factors. The factors are grouped under four headings: Cognitive and metacognitive factors, motivational and affective factors, developmental and social factors and individual differences factors (McCombs and Miller, 2007; Santrock, 2001). The 14 principles define the nature of learners and learning. The principles apply to both in and out of school to all students in different age groups. They define students as individuals with minds and emotions who should be seen as holistic human beings rather than isolated characteristics or attributes.

When these 14 principles are applied to schools and classrooms, they address various learning domains. The learner-centred framework provides a systematic approach to content, assessment and individual needs of students. The principles form the basis

for making decisions regarding how to use and evaluate programs and practices that provide instruction, curricula and personnel aim to enhance the teaching and learning process. Research that underlies the principles confirms that learning is nonlinear, recursive, continuous, complex, relational and natural in humans. The research also reveals that, learning is maximized in contexts where students have supportive relationships, have a sense of ownership and control over the learning process and that they can learn from each other in safe and trusting learning environment (McCombs and Miller, 2007).

The four domains are integrated in a holistic way highlighting how each influences students and their learning. The scope of the four domains (McCombs and Miller, 2007, p. 32) is as follows:

- Cognitive and metacognitive – what the intellectual capacities of learners are and how they facilitate the learning process.
- Motivational and affective – the roles played by motivation and emotions in learning.
- Developmental and social – the influence of various aspects of learner development and the importance of interpersonal interactions in learning and change.
- Individual differences – how individual differences influence learning; how teachers, students, and administrators adapt to learning diversity; and how standards and assessment can best support individual differences in learners.

These principles emphasize the fact that in order to serve the needs of all students, the educational systems must focus on the individual learner, reflect an understanding of the learning process and address the essential knowledge and skills to be learned. As Santrock points out, today the principles have been widely used in many school programs.

2.2 Implementing Student-Centred Learning in Classroom Teaching and Learning

SCL is a totally new approach to teaching and learning. Therefore, as Weimer (2002) states different instructional strategies, roles for teacher and students, power relationship, motivation and assessment are implied in classroom teaching and learning in SCL.

2.2.1 Motivation

Motivational and affective factors are one of the domains of Learner-Centred Psychological Principles adopted by the American Psychological Principles playing an important role in SCL. Motivation refers to the needs and desires, and affect on the other hand, refers to the feelings and emotions. Both motivation and affect control thoughts and behaviors of people (Blumberg, 2009).

What and how much a student learns depend on his or her motivation. As Santrock (2001) puts it, motivation is the reason why people behave the way they do. Motivation to learn is influenced by various factors. McCombs and Miller (2007) assert that student's emotional state, beliefs, interests, goals and habits of thinking are the major factors affecting student motivation in the teaching and learning process. Students' beliefs about themselves as learners and the nature of the learning process also have a significant effect on motivation (Blumberg, 2009). According to previous research, positive feelings such as curiosity and creativity enhance motivation and thus, facilitate learning and performance. Mild anxiety can also contribute to effective learning by enabling students to focus on the task. However, negative feelings such as anxiety, panic, rage, insecurity, worrying about failure, fearing punishment and also ridicule affect motivation negatively and interfere with

learning. Young children are naturally motivated to explore, discover and know. However, as they get older their motivation can become hidden or lost due to some reasons. Lack of motivation is usually caused by negative feelings we have about ourselves, our abilities or about the learning context including the teacher (McCombs and Miller, 2007).

Extrinsic and intrinsic motivation is the two terms that are widely used in educational settings. Extrinsic motivation involves external incentives such as rewards and punishments. For example, some students study hard for external incentives such as getting high marks or avoiding parental disapproval. Intrinsic motivation on the other hand, is based on internal factors such as self-determination, curiosity, challenge and effort (Santrock, 2001, p. 397). As Santrock (2001) states, some students study hard because they have the internal motivation to be successful in their courses.

Traditional TCT relies heavily on external incentives in the teaching and learning process. TCT makes use of reinforcement theory that consists of positive and negative reinforces aiming at making students behave in desired ways. Positive reinforces such as praise and good grades are usually in the form of rewards used to get students repeat the desired behaviour. Negative reinforces such as low grades and reprimands, on the other hand, are used to make students avoid certain behaviours. Reinforcement principles are still employed by many teachers for the purpose of developing desirable behaviours and discouraging undesirable ones in educational settings. However, today most educators and researchers believe that the use of reinforcement theory does not enhance student motivation and learning. Instead, it

affects students negatively leading to conformity and compliance (Arends and Kilcher, 2010).

Today most teachers tend to rely on extrinsic motivators to motivate their students and get them involved in class activities (Weimer, 2002). Most commonly used extrinsic motivators include regular quizzes, extra credit and bonus points. Extrinsic motivators are effective in getting students do the tasks. However, students engage in such tasks only if required and just for the sake of getting extra points. Extrinsic motivators make students learn only the required amount necessary to pass their courses. Moreover, they are far from increasing intrinsic motivation of the students (Blumberg, 2009). Researchers have also found that high stakes tests lead to less intrinsic motivation to learn and lower levels of critical thinking. The teachers working in schools that focus too much on students' performance on high stakes tests are less inclined to encourage students to explore concepts and topics of interest to them and hence, preventing them to become lifelong, self-directed students (McCombs and Miller, 2007).

SCL highlights the importance of intrinsic motivation in the teaching and learning process. SCL aims to facilitate students' intrinsic motivation through engaging students in tasks which are interesting, relevant and meaningful for them. The tasks chosen should also be appropriate for students' abilities in terms of difficulty. Intrinsic motivation is also facilitated by authentic tasks that students can encounter in their daily lives. Current research also shows that self-motivated learning further emerges in contexts where students are provided with choice and control in their learning. When students are given choice and opportunity to control some aspects of

their learning they become more motivated students who can self-regulate their own learning (Blumberg, 2009; Brandes and Ginnis, 1986; Phillips, 2005; Santrock, 2001; Ryan and Deci, 2000; Weimer, 2002). Student-centred teachers encourage and support students' motivation by considering individual differences regarding students' areas of interest, relevance and difficulty of topics and tasks, personal choice and control in the teaching and learning process (McCombs and Miller, 2007).

2.2.2 Instructional Strategies

Selecting strategies of instruction is an important step in the instructional model (Oliva, 2005). Strategy "encompasses the methods, procedures, and techniques the teacher uses to present the subject matter to the students to bring about desired outcomes" (Oliva, 2005, p. 344). The main aim of using strategies is to enable students to achieve learning outcomes as effectively as possible.

Today, students are expected to be equipped with skills and abilities that will enable them to think analytically and critically, solve real-life complex problems, reflect what they think and know, work in collaboration with others, monitor their own learning and make effective use of the technology. Instructional strategies play an important role in this respect and thus, should be selected and implemented in a way to enhance the aforementioned skills and abilities of students in the teaching and learning process. Instructional strategies recommended in SCL possess the characteristics needed for the development of above mentioned skills and abilities. The aims of instructional strategies in SCL are as follows (Attard et al., 2010; Özer, 2008; Schunk, 2004):

- Make students take active role in learning.
- Make students aware of what they are doing and why they are doing it.
- Focus on transferable skills.
- Foster students' higher-order cognitive skills.
- Increase two –way interaction between students and teacher.
- Activate students' prior knowledge and experience.
- Help students develop independent learning skills.
- Encounter students with real-life problems.
- Provide students with multiple representations of the content.
- Make students take responsibility for their own learning.

Teaching and learning methods used in SCL refer to the active learning activities that teachers use with their students. The teaching and learning methods can be in different forms. They can take place in class, online or assigned as homework or projects to be done outside the class. SCL does not rely on only one teaching or learning method; rather, it emphasizes a variety of different methods. Various teaching and learning methods are available in education but what is important is to choose the ones that align well with students' learning goals (Blumberg, 2009).

The most commonly used methods in SCL are problem-based learning, project-based learning, cooperative learning, task-based learning, resource-based learning, computer-based learning, discovery learning, and cognitive apprenticeship. Some of the techniques used in SCL are open-ended problems which require critical and creative thinking, simulations, role plays, discussions, projects and assignments, portfolio assignments, field work, case method and information gap (Attard et al.,

2010; Boyapati, 2000; Ellington, 1996; Felder and Brent, 1996; Ingleton et al., 2000; Kember, 2008; Özer, 2008).

Attard et al. (2010) provided a sample of SCL methods that can be used both in and outside the classroom. The methods are displayed in Table 2.3.

Table 2.3

Student-Centred Learning Methods

Inside the Lecture Format	Outside the Lecture Format
Buzz groups (short discussion in twos)	Independent projects
Snowballing (turning buzz groups into larger groups)	Group discussion
Cross-overs (mixing students into groups)	Peer mentoring of other students
Use of tutorial groups	Team work
Rounds (giving turns to individual students to talk)	Debates
Quizzes	Field-trips
Writing reflections on learning (duration of 3-4 minutes)	Practicals
Student presentations	Reflective diaries, learning logs
Poster presentations	Computer-assisted learning
Role play	Writing media articles
Students producing mind-maps	Portfolio development

Note. Adapted from Attard et al., 2010, p. 33.

As Boyopati (2000) states, the main function of these methods and techniques is to get away from the traditional teacher dominated classrooms and enhance student involvement with greater participation. The core of teaching methods and techniques used in SCL is to enable students to demonstrate what they are learning and also, how they are learning. Another essential ingredient of methods and strategies in SCL is to start from what is already known by the students and then move to what is not known. This allows students to "construct and climb a scaffold of understanding"

through building on what they already know (Ingleton et al., 2000). Teachers should consider individual differences with regards to motivating students and decide which methods or techniques to use accordingly (Attard et al., 2010). In SCL, it is also very common for students to teach each other. In order to be able to teach each other effectively, the students need to have the necessary skills and the knowledge of the topic. Teaching one another promotes deep learning.

2.2.3 Distribution of Power

In traditional TCT, teacher has all the power and control in planning, implementing and evaluating instruction. Students do not usually have any power or control in any of the issues regarding teaching and learning (Blumberg, 2009; Weimer, 2002). Most students finish secondary education without making any decisions about their learning (Weimer, 2002). This education system creates teacher-dependent students who lack necessary study skills required for making effective learning decisions.

In traditional view of teacher control, teacher dominates teaching and learning process in all aspects including preparing lesson plans, prescribing course objectives and transferring knowledge in a way that students can easily remember it upon demand (Braye, 1995, as cited in Weimer, 2002).

In traditional teacher-centred environment, students are not trusted to be involved in decision making because it is assumed that they lack intellectual maturity and the necessary study skills, they do not like the content of the course, they take courses for the sake of getting a passing grade and they simply do not care about learning (Blumberg, 2009; Weimer, 2002).

Brandes and Ginnis (1986) described three different types of power structures in the teaching and learning process as shown on Figure 2.3.

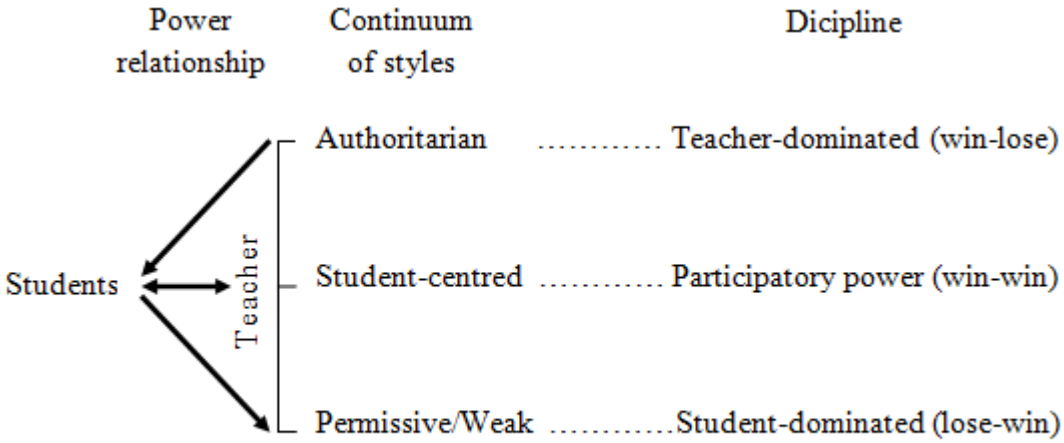

Figure 2.3 Three different types of power structures. Taken from Brandes and Ginnis, 1986, p. 165.

According to the chart there are three positions on the continuum; authoritarian, student-centred and permissive/weak. On one end of the continuum is the authoritarian, teacher-dominated model. In this model, all decisions which were earlier made by the teacher are imposed on students without any kind of explanation. This is a system with lots of rewards and punishment. Because of the nature of this model, it is the teacher who always wins because all the decisions taken by the teacher are implemented in class. On the other end of the continuum is the student-dominated model. In this model, students do whatever they want. The teacher cannot do anything because he or she does not have any power. Here, the teacher is not able to win because of lack of necessary knowledge and skills in teaching profession. As a result of this, he or she feels unfulfilled, frustrated and threatened.

In the middle of the continuum is the student-centred, participatory power model. In this model, the teacher and the students are partners in the teaching and learning process. There is shared responsibility as all decisions are made together.

> Neither teacher nor students are dominant – indeed, the idea of dominance is itself removed and with it goes the idea of losing. There is no struggle for power, no underlying tension. Discipline is not imposed, rather it is achieved naturally. Everyone owns the classroom and has a stake in its atmosphere, relationships and congeniality. Class behaviour is no longer just the teacher's problem, but is owned by the whole group, of which the teacher is but a member. This takes the pressure off the teacher to win, and off the kids to plot, subvert and resist. All this energy can now be channeled into more creative pursuits (p. 166).

There is trust between teacher and students. The teacher has to trust students in decision making process and this encourages students to take responsibility for their own learning and face the consequences of their decisions and actions (Brandes and Ginnis, 1986; Doyle, 2008).

As Brandes and Ginnis (1986) stated, teachers who would like to move from traditional model to student-centred one should start accepting his or her students as human beings. This acceptance will create a sense of equality, unity and common purpose necessary for the shift to participatory power in teaching and learning process. SCL involves reallocation of power in the classroom. SCL puts students in the centre of the teaching and learning process rather than the teacher and this has an effect on power and authority in class. SCL requires teachers to give their students some control that will directly affect their learning (Blumberg, 2009; Weimer, 2002). As Lea et al. (2003) put it, "if education is to be truly student-centred, students should be consulted about the process of learning and teaching" (p. 320).

Weimer (2002) argues that teaching and learning in an authoritarian class in which power is not distributed equally between the teacher and the students affects teaching and learning in a negative way. The power in class has a great influence on students' motivation to learn and also on learning outcomes. Learning is affected negatively when teachers have all the power (Weimer, 2002). Weimer (2002) further states that the authority of the teacher in traditional classroom environment does not help in disseminating knowledge to students.

When teaching is student-centred, the power in the classroom is shared and is not totally transferred to students. In SCL environment, it is still the teacher who makes the key decisions. However, students' ideas are also taken into consideration in all decisions made by the teacher. Blumberg (2009) argues that SCL requires teachers to be flexible on most course policies, assessment methods, learning methods and deadlines. He further states that teachers should also obey decisions that have been taken with students.

The amount of power given to students should depend on their maturity, motivation and the teacher's comfort regarding this distribution of power with students (Blumberg, 2009). Weimer (2002) points out that the amount of power given to students should be parallel to students' ability to handle it. Giving students too much power, unless they are ready and prepared to take is, unethical.

Choice is an important ingredient of the SCL approach (Attard et al., 2010). One of the goals of SCL is to enable students to make their own choices in learning (Brandes and Ginnnis, 1986). Offering students with learning choices is a good way of sharing

power with students. By offering learning choices, teacher gives students the message that he or she trusts them and values their opinions. Offering students choices gives students the responsibility to accept the consequences of their choices they make in the teaching and learning process. Moreover, these choices give students a greater sense of control over their learning and encourage them to be more involved in the course (Doyle, 2008).

There are four areas in which teachers can share power and offer choices to the students. These are course activities and tasks, classroom rules, course content and assessment procedures (Doyle, 2008; Weimer 2002). Students can be included in decision making regarding course activities and tasks. There are different ways and levels of decision making. Students can decide what assignments they will complete, they can just choose the kind of assignment they want from the given options, they can share their reactions to the course structure, decide on the criteria that will be used to evaluate the assignments, and also on the due dates and identify penalties if they miss any of the deadlines. When teachers give students the chance to make decisions, it is important to create a context that has a positive effect on the kind of decisions they will make.

Students can actively participate in decision making process with respect to the course policies which include guidelines and rules about the course (Doyle, 2008). For example students can be given the chance to set the participation policy in a course through contributing to the design of criteria that will be used in evaluating students' participation in class. Involving students in decision making about course

policies attracts their attention, makes them aware of what is expected from them as students, and increases their motivation in class (Blumberg, 2009; Weimer, 2002).

Involving students in decision making about course content is a challenging area. Students usually do not have any ideas about what to include in terms of content. Weimer (2002) believes that there is still ways that students can be involved in content decisions. For example, students can be allowed to choose discussion and essay topics. When students are given options about topics that will be covered in class, they are more likely to develop a deeper understanding of the material. "This happens because their interest in the topic usually comes from already knowing something about it or from personal curiosity" (Doyle 2008, p. 101). Decision making about the content is like a continuum and the extent to which teachers can move further depends on how comfortable they are by involving students in decision making about the content (Weimer, 2002).

Like course content decisions, involving students in decisions about assessment is also a challenging area for teachers. It is hard for teachers to allow students take part in decision making regarding assessment process. Attard et al. (2010, p. 36) proposed a list of ideas regarding involving students in decision-making. The ideas are shown in Table 2.4.

Table 2.4

Areas for Involving Students in Assessment

Areas for involving students when the task is set	Areas for involving students after the task is completed
Choosing the assessment task	Making self-assessment comments
Setting the assessment task	Making peer-assessment feedback comments
Discussing the assessment criteria	Suggesting self-assessment grades/marks
Setting the assessment criteria	Negotiating self-assessment grades/marks
	Assigning self-assessment grades/marks
	Assigning peer-assessment grades/marks

Note. Taken from Attard et al., 2010, p. 36

As Attard et al. (2010) suggest teachers can move from teacher-centred to student-centred practices on the continuum slowly starting with small changes at the beginning. For example, initially, they can involve students by providing them with alternatives of writing topics and/or exam questions. Providing students with choices in assessment encourages them to demonstrate things they have learned (Doyle, 2008). Weimer (2002) and Blumberg (2009) also highlight the fact that when students are given some control in the assessment process they tend to study harder and get higher grades.

Sharing power is not only beneficial for students and their learning but for teachers, learning environment and institution as well. The biggest and the most important beneficiary is for the students and the learning. Sharing power with students improves their motivation and encourages them to be more engaged and involved with the course. This usually results in more effective learning. Power sharing is also

beneficial for the teachers as their students are not passive, demotivated and disconnected students any more. Instead, they have the energy and enthusiasm which motivates teachers to work more. Power sharing also affects the environment, which includes the ownership and comfort in the class, in a positive way. The class is owned by all students and, thus, they are more willing to help when something goes wrong (Weimer, 2002).

Despite what has been said about the benefits of sharing power, today most teachers still have some concerns about it. The most common concerns teachers pointed out include the fear of losing control of the class and not knowing what to do if students make poor decisions (Doyle, 2008). As Doyle emphasizes, students cannot become more responsible students unless they are given responsibility by their teachers. "We can't help them become skilled and safe drivers if we never let them behind the wheel. It is scary, but it is the only way …" (p. 96). Furthermore, if students are offered more choices they will be more willing to engage in the learning process. Choices give our students some say in the learning process and thus, encourage them to take more ownership of their learning. When students are given some control over their learning, they become more aware of their strength and weaknesses in their learning (Doyle, 2008).

2.2.4 Teacher and Student Roles

SCL implies different roles both for teachers and students. In SCL, teacher is not the only source of information responsible for knowledge transmission. Instead, he or she has multiple roles to fulfill. SCL requires teachers to perform the roles of a facilitator, guide, navigator and a co-learner in the process of teaching and learning (Blumberg, 2009; UNESCO, 2002; Weimer, 2002). Student-centred teachers should

create learning environments that foster cooperative work, critical thinking, problem solving and meaning construction to enhance student learning. As Schunk (2004) states, in SCL teachers should not teach in the traditional ways but create rich environments to increase active participation of students through manipulation of materials and social interaction. Blumberg (2009) contends that the most important role of a teacher is to make use of variety of teaching and learning methods appropriate for student learning goals. He asserts that the teacher should never use methods that conflicts with learning goals of students.

Albanese (2004) stresses the importance of teachers in the learning process by asserting that "the function of the teacher alone is able to flourish or crush the outcome of students' participation in the teaching and learning process" (as cited in Vignarajah, 2008, p. 37). Therefore, it is important for the teachers to have the necessary knowledge and skills in order to be able to fulfill their roles effectively and efficiently in the teaching and learning process. Weimer (2002) argues that the effectiveness of teaching methods under SCL largely depends on how well teachers can implement them in the classroom. SCL teaching and learning methods require teachers "to step aside and let students take the lead" (Weimer, 2002, p. 72). However, having been on the stage for so long makes it difficult for the teachers to step back and let students take over. Previous research conducted on SCL demonstrates that teachers still dominate instruction in the teaching and learning process.

The role of a teacher in SCL is usually described metaphorically. As Weimer (2002) expressed, the role can easily be defined and understood by analyzing the metaphors

associated with teachers in SCL. According to Fox (1983) teachers are like gardeners in SCL model. They make all kinds of preparation but it is the plants which do the growing (as cited in Weimer, 2002, p. 75). Ayers (as cited in Weimer, 2002) argues that "good teachers know when to hang back and be silent, when to watch and wonder at what is taking place all around them. They can push and they can pull when necessary – just like midwives- …" (p. 75). Similarly, Hill (as cited in Weimer, 2002) uses mountaineer as a metaphor to describe the role of teachers in SCL. As Hill states while teachers and students are climbing and they are attached to each other with a rope. Therefore, they need each other's help to achieve a common goal. According to Eisner (as cited in Weimer, 2002) teacher is like a maestro with an orchestra which consists of musicians who play different instruments, with different levels of ability. The orchestra makes music under the direction of the maestro who has the content in front of him or her. All these metaphors like many others used for the same purpose to describe what student-centred teachers are like. Weimer (2002, p. 76) focused on the actions of the teachers and describes these actions accordingly:

> Learner-centred teachers connect students and recourses. They design activities and assignments that engage learners. They facilitate learning in individual and collective contexts. Their vast experience models for novice learners how difficult material can be accesses, explored and understood.

Weimer (2002) lists seven principles regarding what teachers should and should not do when instruction is student-centred. The seven principles are as follows:

- *Teachers do learning tasks less.* This principle is about teachers doing learning tasks such as organizing the content, generating examples, asking and answering questions, summarizing discussions, solving problems and constructing the diagrams less giving students the opportunity to be more

involved in class. As Doyle (2008) suggests "the one who does the work does the learning" (p. 63). Therefore, teachers should design activities and let students do the work themselves.

- *Teachers do less telling; students do more discovering.* Teachers tend to tell students everything they need to know. Teachers spend most of their time telling what is going on in class; they explain what they are going teach, how they are going to teach and when they finish they summarize the main points of the topic. By doing this, teachers avoid students to think and to figure out things for themselves. Instead of telling students everything they need to know, Weimer (p. 85) suggests teachers use "let them discover principle" which includes referring students to correct sources they can reach. Students should start taking the responsibility for their own learning rather than relying on the teacher all the time.

- *Teachers do more design work.* One of the important roles of the teacher in SCL is to design instruction. Activities and assignments are used as springboards to accomplish predetermined objectives. According to Weimer (2002), student-centred activities and assignments enable teachers to reach some important goals in instruction. Firstly, activities and assignments that are designed and sequenced properly enhance learning because they help students to improve themselves through building on their current knowledge and skills. Secondly, they are used to motivate students and encourage them to participate more in class. Thirdly, they give students the opportunity to engage in authentic tasks that they can face in real life. Therefore, the

student-centred activities and assignments help develop knowledge, skills and awareness of students.

- *Teachers do more modeling.* In this principle, the teacher takes the role of a master learner and demonstrates students the ways skillful learners approach learning tasks. As McCombs and Miller (2007) assert, teachers should share the ownership of learning through shifting their roles from a teacher to an expert learner. As an expert learner, the teacher can model learning processes by sharing the strategies he or she uses. As McCombs and Miller (2007) put it, children tend to learn 80% of what they know from watching their parents, teachers and others around them. As co-learners teachers share the ownership of learning with their students (McCombs and Miller, 2007).

- *Teachers do more to get students learning from and with each other.* Teachers need to create student-centred learning environments in which students work collaboratively and cooperatively with each other in groups. It may take some time for students, especially ones who are not used to working together, to gain experience in such activities. Therefore, teachers need to make students aware of the importance of cooperative work in learning and train them to gain the necessary skills required for successful cooperation and collaboration in learning.

- *Teachers work to create climates for learning.* Student-centred teaching environment has a positive effect on learning outcomes. It is mostly the teacher's responsibility to design and implement teaching and learning

activities in a way that foster effective learning. This is possible through creating a motivating and challenging learning environment for the students and also giving them the opportunity to take the responsibility for their own learning. As Blumberg (2009) asserts, teachers can create a learning environment that enhances student learning through organization and use of study materials. Students learn differently. For example, some learn by reading, others learn just by listening and some others learn by doing. Therefore, teachers should also consider different learning styles of their students. When teachers take into account different learning styles and offer their students some options, they promote their students' learning.

- *Teachers do more with feedback.* Giving students constructive feedback is an essential element of SCL approach. In SCL, teachers still grade papers and assign grades but the major aim of assessing student performance is to maximize student learning. This is usually achieved through providing students feedback on their strengths and weaknesses and suggesting ways for improvement.

Weimer (2002) points out that these seven principles regarding teachers' roles in class move teachers away from the centre of the teaching/learning process enabling them to act as a facilitator, resource person, mentor, instructional designer and a co-learner.

Like teachers, students also have different roles to perform in student-centred environment. "A learner-centred environment is different. It requires students to take

on new learning roles and responsibilities that go far beyond taking notes and passing tests" (Doyle, 2008, p. xv). In SCL environment, students are encouraged to take control of their learning and make choices about what to learn and how to learn (Doyle, 2008). In SCL students are not passive recipients of knowledge who expect to learn everything from the teacher. Instead, they are active participants who have the responsibility for their own learning. In a SCL environment students try to seek, discover and construct knowledge within meaningful contexts and then share their knowledge through engaging in social interaction with their peers (Newby and others, 2006 as cited in Özer, 2008). As Doyle (2008) states collaboration is not just an occasional class activity which is done to have variety in class but is regarded as a norm. Weimer (2002) claims that students usually fail to learn the content and develop themselves unless they are given the chance to actively engage in their learning which leads to acquisition of knowledge.

Doyle (2008) illustrates the distinction between traditional and student-centred learning roles and responsibilities of students in Tables 2.5 and 2.6.

Table 2.5

Traditional Learning Roles and Responsibilities of Students

Roles	Responsibilities
Take lecture notes	Work mostly alone
Listen in class	Seek out the teacher if you have questions
Read the textbook	Read Independently
Read other assigned reading	Develop your own study habits
Take tests and quizzes	Develop your own time-management program
Take part in recitation	Organize the information
	Write papers on assigned topics
	Memorize

Note. Adapted from Doyle, 2008, p.12

Table 2.6

Roles and Responsibilities for Students in SCL Environment

Student Roles in SCL	Student Responsibilities in SCL
Self-teach	Make choices about one's own learning
Collaborate with others	Take more control of one's own learning
Work in teams / groups	Give input to the evaluation / assessment methods of the course
Take part in discovery learning	Give input to course rules and guidelines
Teach others	Give formative feedback on learning to peers
Evaluate own learning	Evaluate one's own learning
Evaluate others' learning	Spend more time learning outside of class
Perform/ present learning publicly	Work with people from outside the university on service projects or other authentic learning activities
Learn new how-to-learn skills and strategies	
Solve authentic problems	
Engage in reflection	
Demonstrate use of teacher feedback to improve performance	
Take learning risks	

Note. Adapted from Doyle, 2008, p.15

The roles and responsibilities illustrated in tables above clearly show that students have to take on significantly different roles and responsibilities when they encounter with two different approaches to teaching and learning. In SCL the students are required to do more work and take on more responsibilities in the teaching and learning process.

These new roles that students are required to perform in the teaching and learning process enable them to enhance the depth of learning, long-term recall of the information and also the necessary study skills. There are obvious benefits of letting students explore or solve the problems either on their own or in groups. Firstly, the students are given the opportunity to discover how they learn best. Secondly, having

solved or explored things on their own gives them the chance to experience sense of accomplishment and empowerment and thus, increases their self-confidence. Thirdly, students improve their communication and collaboration skills when they work with their peers in groups (Doyle, 2008).

2.2.5 Assessment

Assessing student learning is an important ingredient of SCL. The methods used to assess and evaluate students' progress should reflect the characteristics and the philosophy of SCL. "If we really believe in student-centred learning, then we must work hard to ensure that our assessment practices reflect, encourage, and reward this belief" (Ingleton, 2000, p. 17). Blumberg (2009) also states that on the way to shift from traditional teaching to SCL, the questions of why and how assessment should take place becomes a rather complicated process.

The assessment in SCL is in line with constructivist principles of teaching and learning which contain the following characteristics (Özden, 2003, p. 73):

- The process of learning is evaluated rather than the product.
- Group work is evaluated.
- The criteria for achievement are identified by teacher and students together.
- Student progress is evaluated considering all the work done throughout the teaching and learning process.
- Cognitive skills are assessed through performance evaluation.
- Student progress in a term is evaluated through the use of portfolios.

In traditional teaching, the main aim of the assessment is to decide what grade to give students. These grades are usually based on the abilities and skills students perform in written tests at the end of the course. On the other hand, the purpose of assessment in SCL is not only to assign grades but to promote student learning. The assessment methods used in SCL should mainly focus on giving students feedback on the learning process rather than generating grades. In SCL, it is important to inform students of the assessment methods and also the criteria that will be used (Attard et al., 2010).

In SCL, assessment methods are included in the process of teaching and learning (Blumberg, 2009). Therefore, student progress is not assessed at the end of the semester but throughout the semester with the use of different methods. According to Brooks and Brooks (1999), separating teaching and assessment from each other is unnecessary and counterproductive. Assessing student progress through teaching, observing their interaction with each other and watching them work on tasks tell teachers much more about their students than traditional paper and pencil tests.

In SCL, students are actively involved in the process of assessment. As Blumberg (2009) puts it, SCL gives students a more empowering role in the assessment process. In SCL it is not only the teacher who is responsible for evaluating student progress but also the students are also expected to assess and evaluate their own progress as well as their peers' (Blumberg, 2009; Weimer, 2002). As Özden (2003) argues, in SCL, there should be a good amount of peer- and self-assessment. Through the continuous use of peer- and self-assessment teachers can incorporate their students' perspectives into the assessment process (Blumberg, 2009). According

to Doyle (2008, p. 150), self-assessment is done "… when students judge the quality of their work, based on evidence and explicit criteria, to do better work in the future". Self-assessment enables students to identify their strengths and weaknesses in the learning process, decide what needs to be improved, make a plan on what to improve and how to improve, implement it, and finally assess its effectiveness and start for the next round of improvement (Arends and Kilcher, 2010; Weimer, 2002). Self-assessment encourages students to take the responsibility for their own learning and guide them towards autonomy (Arends and Kilcher, 2010; Attard et al., 2010; Weimer, 2002). Moreover, it is a powerful tool in increasing self-efficacy and intrinsic motivation of students.

In order to ensure the accuracy of self-assessment, students should be provided with a set of assessment criteria. However, before that it is important to teach students how to self-assess their own work (Doyle, 2008). As Weimer (2002) points out, the ability to evaluate one's own work and also the work of others is not something that develops automatically. The students need to gain the necessary skills and experience before they are actively involved in assessment process. The results of a meta-analysis (Falchikov and Bound, 1989 as cited in Weimer, 2002) that consisted of 48 studies demonstrated low correlation between student and teacher grades for an entry level course and thus did not justify students grading their own work. However, the same study also revealed much higher correlation for an upper level course when students are provided with criteria for self-assessment. The results of this study indicated that students need to have the necessary skills in order to be able to self-assess their work accurately in the teaching and learning process.

Doyle (2008) describes a four-staged guide to be followed when teaching students to self-assess their own work. The first stage is involving students in defining the criteria that will be used. In this stage, it is important to make sure that the criteria are clear and meaningful for students. Stage two is about teaching students how to apply the criteria effectively to their work. In doing this, it is crucial to fit each category in criteria into a rubric format. Discussion is a good technique in making rubric categories clear for the students. In stage three, students are given feedback about the effectiveness of their assessment. This is achieved through sharing and comparing self-assessment to peer- and teacher assessments by using the same rubric. Making comparisons enable students to develop accurate self-assessment skills. Finally, stage four involves helping students develop future goals and action plans for improvement. Based on the results of self-assessment students may review the strategies, skills, effort and time they put in the task.

Like self-assessment, effective peer-assessment depends on having necessary skills and experience (Arends and Kilcher, 2010; Blumberg, 2009; Doyle, 2008; Weimer, 2002). In peer-assessment students should be able to assess the performance of others. In doing this, students are usually provided with a set of assessment criteria. Students should be comfortable with the meaning of the words and phrases used in the criteria (Doyle, 2008). In peer-feedback students should be able to give meaningful and constructive feedback to each other's work (Doyle, 2008). Blumberg (2009) remarks that students tend to give each other constructive feedback as long as they are provided with clear criteria.

"Peer-evaluation is a win-win situation for both the reviewer and the feedback recipient" (p. 156). Peer-evaluation gives students the chance to reconsider their self-assessment from another perspective and improve the quality of their work based on the feedback and suggestions given by others. As Arends and Kilcher (2010) contend, peer-assessment is included in formative assessment and it increases the amount of feedback students receive. Peer-assessment also gives students the opportunity to identify the qualities of good work and give positive feedback. As Weimer (2002) remarks, self- and peer-assessment are closely linked to each other and thus, having experience and the necessary skills in one area contributes to the improvement of another. Involving students in responding to their peers' work improves their self-assessment abilities. Through self and peer-assessment students learn to make judgments, give and accept criticism and also gain confidence in their opinion.

Current education system does not offer students many opportunities to develop their skills in self- and peer-assessment. Moreover, it excludes students from the assessment process as it underestimates the value of self- and peer assessment (Weimer, 2002). Combining teacher assessment with peer and self-assessment is important because it enables teachers to triangulate the data regarding students' progress and makes the assessment more valid one. "…peer and self-assessments are useful for obtaining rich assessment data" (Blumberg, 2009). Peer and self-assessment give teachers the opportunity to collect information about student learning from other sources and not to rely on one source only.

SCL gives emphasis to continuous assessment or process evaluation rather than product evaluation which comprises of summative evaluation only. In process evaluation, there is both summative and formative evaluation (Arends and Kilcher, 2010; Attard et al., 2010; Blumberg, 2009; Ingleton et al., 2000; Lea et al., 2003; O'Neill and McMahon, 2005; Özer, 2008).

Summative evaluation refers to the assessment that takes place at the end of a course and it aims to find out whether the students have achieved the predetermined outcomes or not. Written examinations are widely used in this type of evaluation. As Arends and Kilcher (2010) state, this is the traditional way of assessing student learning that focuses on assigning grades and ignores highlighting what students know, the mistakes they made and also suggestions for improvement.

Formative assessment, on the other hand, refers to both formal and informal assessment techniques used during the period of instruction and covers written tests as well as alternative techniques such as portfolios. A portfolio consists of samples of student work demonstrating achievement throughout a term or a year. Some of the examples that a portfolio may contain consist of assignments, tests, group projects, reflective essays and creative work (Arends and Kilcher, 2010; Oliva, 2003). Formative assessment allows teachers to provide students with feedback and also make suggestions for improvement in the teaching and learning process rather than assigning a single grade. Formative assessment also provides students information about the effectiveness of their learning strategies. Based on the feedback given, students may decide to review their learning strategies they are using or continue with the same ones they already have (Arends and Kilcher, 2010; Attard et al., 2010;

Blumberg, 2009; Doyle, 2008; Marsh, 2007; Weimer, 2002). According to Arends and Kilcher (2010), the regular use of formative assessment promotes student learning because it has a positive effect on what students learn and also how they learn.

According to Weimer (2002) formative assessment should include constructive feedback focusing on performance rather than students. Moreover, the language used should describe and not evaluate, should be clear and brief for the students. The effectiveness of constructive feedback is enhanced when it is immediate and well timed. Feedback should be provided as soon as students have demonstrated their understanding of particular knowledge or performed a target skill (Arends and Kilcher, 2010). Blumberg (2009) remarks that giving students immediate feedback enables them to incorporate feedback in order to improve their work.

Performance assessment also plays an important role in assessing student progress in SCL. In performance assessment, students are observed while they are engaged in authentic tasks and problems (Doyle, 2008). The examples of performance assessment include keeping a portfolio of one's work, performing at a music recital, participating in a debate and exhibiting a project at a fair (Arends and Kilcher, 2010). As Brooks and Brooks (1999) assert, performance assessment requires students to apply their knowledge in new situations, and thus enables teachers to distinguish between what is memorized and what is internalized by the students.

The purpose and process of assessment change when teaching is student-centred. In SCL, the main purpose of assessment is to promote learning. Therefore, the

assessment methods used mainly focus on giving student feedback rather than generating grades. The assessment methods are included in the process of teaching and learning and thus student performance is assessed throughout the semester with the use of different methods. Students are actively involved in the assessment process through assessing their own progress as well as their peers. However, it is still the teacher's responsibility to act as the main assessor in the teaching and learning process.

2.3 The Benefits of Student-Centred Learning

SCL offers benefits to all stakeholders including students, staff, institution, staff unions and the whole society (Attard, Di lorio, Geven and Santa, 2010; Blumberg, 2009). Regarding the process and product of teaching and learning, SCL offers various benefits for both teachers and students.

2.3.1 Benefits for Students

The benefits of SCL for students (Attard et al., 2010) can be listed as follows:

- *Fosters deep learning approach.* SCL encourages the use of deep learning approach. In deep learning approach, students relate what they are learning to their own experiences through connecting theory with real-world events. In deep learning, students also engage in the organization of the information. Deep learning contrasts with surface learning. Surface learning refers to learning in isolation that fosters rote memorization of facts. As Blumberg (2009) asserts, in surface learning students do not make content meaningful for them and thus forget things easily. Psychologists recommend the use of

deep learning approach in education as it makes learning more meaningful for the students.

- *Higher retention of knowledge.* The way in which material is learned affects the retention of knowledge. All types of active learning which involves the use of multiple sensory organs have a higher retention rate than traditional forms of learning.

- *An increased motivation to learn.* The students are also more motivated to learn through SCL because they are active participants in the teaching and learning process. Moreover, learning becomes more interesting when it is interactive. In SCL, students are also involved in decision making processes which are another motivating factor in the learning process.

- *Independence and responsibility in learning.* SCL encourages students to be self-directed independent learners who take the responsibility for their own learning. SCL enables students to develop learning-to-learn skills required for them to be independent learners. Learning-to-learn skills include time management, self-monitoring, goal setting and conducting research (Blumberg, 2009). Being independent learners enable students to learn more effectively and also gain transferable skills such as teamwork, effective written and verbal communication and critical thinking. In student-centred classrooms, students learn to take the responsibility for their learning under the guidance and the support of their teacher.

- *Consideration for student needs.* SCL considers different needs, interests, learning styles and abilities of students and tries to address these differences with the use of variety of instructional strategies and materials in the teaching and learning process. SCL does not limit learning of students to a given time or place as in traditional TCT but gives them the flexibility to be part time students and also benefit from distance learning and e-learning opportunities.

2.3.2 Benefits for Teachers

The benefits of SCL for teachers (Attard, Di lorio, Geven and Santa, 2010) can be given as follows:

- *A more interesting role for the teacher.* Teaching becomes more enjoyable, interactive and rewarding if it is student-centred. In SCL, teacher is no longer the only source of information; instead, he or she is the facilitator in the learning process. Teacher has a more interesting role to play which is challenging students and enhancing their learning.

- *Positive impact on working conditions.* In SCL, learning may take place in various forms which makes teaching more interesting eliminating the negative aspects of working conditions related to teaching.

- *Continuous self-improvement.* In SCL, teachers are required to review and develop their courses through improving the content of the course and the methods of teaching they use in their classrooms. In order to implement SCL effectively, teachers are required to continuously update their knowledge, skills and competences in teaching.

SCL also offers various benefits to institutions in which SCL is implemented and also for the society. The implementation of SCL increases the quality of education offered to students in institutions. Moreover, as students' learning needs are of paramount importance in SCL, the institutions in which this approach is implemented become more attractive for students (Attard, Di lorio, Geven and Santa, 2010). The use of SCL also has a positive impact on society in the long run. As Attard et al. (2010) state the society will benefit more from graduates who are innovative, critical and reflective thinkers. SCL equips graduates with lifelong learning skills making them more effective in both their work and society they live in.

2.4 Barriers that Hinder the Effective Use of Student-Centred Learning

Today, many institutions and teachers are claiming to use student-centered approach; however, in reality, teacher-centered approaches are still favored for a number of reasons (Blumberg, 2009; Brandes and Ginnis, 1986; Ellington, 1996; Hockings, 2009; Lea et al., 2003; McCombs and Miller, 2007; Stes et al. 2007; Weimer, 2002). Recent research indicated that teachers still dominate instruction in classrooms. For example, the results of a study conducted by researchers in Kansas State University demonstrated that 45% of faculty use lecture as their primary teaching method. Nunn (1996) also in his study reported that only 5.8% of total class time consisted of active participation of students which is equal to one minute per 40 minutes of class time.

The two terms "student-centered" and "teacher-centered" are usually represented as two different extremes on a continuum and the extent to which teachers can move from teacher-centered to student-centered learning depends on certain factors in the

teaching and learning environment (O'Neill and McMahon, 2005). Blumberg (2009, p. 224) emphasizes six characteristics that may influence the extent to which a course can be student-centred or not. These characteristics are type of students, level of the course, number of students enrolled in a class, content of the course, personal philosophy of teaching and trust of students and finally the culture or philosophy of the campus, department or the curriculum. As Blumberg (2009) states, the first four are course characteristics that make the implementation of SCL more difficult by teachers. Yet, according to Blumberg, SCL can be implemented regardless of the course characteristics including type of students, large-enrollment, content-rich and lower-level courses. These characteristics do not prevent teachers from using SCL but they require teachers to pay extra attention when planning their instruction. On the other hand, the last two characteristics related to the teachers' philosophy of teaching and the culture of the campus, department and the curriculum are obstacles that hinder the effective use of SCL in educational settings.

Recent research indicates that SCL is very sensitive to contextual factors. For example, a study conducted by Singer in 1996 (as cited in Stes et al., 2007) points out that the teachers tend to move from student-centered to teacher-centered approach as the class sizes and the level of students increase. Teachers often feel restricted by time allocations, curriculum content, expectations of students and parents (Blumberg, 2009; Brandes and Ginnis, 1986). Attard et al. (2010) report subject taught, number of students, infrastructure, and institutional traditions as the most important barriers to change. There are also other factors that affect teachers' approaches to teaching and these are gender, nationality, status of teachers, teaching experience and in-service training (Stes et al., 2007). The results of a survey analysis

in which student unions from 20 countries participated revealed that the negative attitudes of academic staff and institutions towards SCL, lack of expertise in implementing SCL, and lack of funding are the main barriers to change. However, in the view of academic staff unions, attitudes and lack of expertise are not considered as the most important problems. The staff unions identified lack of funding, unfavorable staff working conditions and other priorities as the most important barriers in implementing SCL (Geven and Santa, 2010).

According to researchers and educators, the main barriers that hinder the effective use of SCL are as follows:

- *The amount of content to be covered and time constraints.* Teachers often reported the amount of curriculum to be covered and time allocations as the main barriers that impede the use of SCL (Blumberg, 2009; Bolden and Newton, 2008; Brandes and Ginnis, 1986; Gladys, 2012; Mangan, 2011; Thanh, 2010; Yilmaz, 2009). Having a centralized rigid curriculum which is controlled by top authorities is considered as an important factor inhibiting teachers to utilize SCL in their classrooms. Some teachers are too concerned to cover fixed amount of content in a due time so they do not allocate time for student-centred methods. As Thanh remarks (2010, p. 27), "… teachers just have enough time to go through all materials but not investigate students' deep understanding or touch any topics outside the curricula." The centralized curriculum is incompatible with the aims, characteristics and philosophy of SCL which emphasizes the flexibility so as to be accommodated to different needs of students (Yilmaz, 2009). As Dewey (1983) argues, school

curriculum should be flexible so that it can be adapted to the local conditions and the needs of students in different parts of a country (as cited in Yilmaz, 2009).

- *The lack of necessary resources.* SCL requires adequate resources. The implementation of SCL may be problematic in countries where there are limited resources such as technology and study materials for both teachers and students (Altinyelken, 2011; Güneş and Baki, 2011; O'Neill and McMahon, 2005; Thanh, 2010). A very recent meta-analysis based on 72 articles illustrate that SCL is too challenging to be implemented in developing country contexts because of limited resources (Schweisfurth, 2011). Unfortunately, in some parts of the world there are no other resources available to teachers other than textbooks (Mohammad and Harlech-Jones, 2008; Gladys et al., 2012). As Geven and Santa (2010) further state, governments are not taking their responsibility in providing necessary resources and thus, this creates problems for institutions that want to make the move to SCL. In a survey analysis, the staff unions of 20 European countries identified lack of funding as an important obstacle in implementing SCL (Geven and Santa, 2010).

- *The background and the opinions of students.* Students' previous learning experience has an impact on their views of learning, the way they approach learning and their motivation (Attard, 2010; Blumberg, 2009; Doyle, 2008; Felder and Brent, 2006; Güneş and Baki, 2011; Mangan, 2011; Thanh, 2010; Weimer, 2002). Many teachers who introduced student-centred approach in

their classrooms for the first time reported complaints from students (Doyle, 2008). Especially, students from traditional educational background may reject student-centered approach. Students' resistance to the use of SCL may be related to requirement to do more work, it may be based on fear or it may be the result of not having the necessary knowledge, skills and abilities to cope with tasks and assignments (Weimer, 2002). According to Doyle (2008) the main reason for student reaction is having traditional, teacher-centred views of learning. Doyle (2008) also highlights the difficulty of changing old habits to learning. The old habits refer to traditional learning that includes sitting quietly, taking lecture notes and doing assigned homework. Maley (1992) also stresses the fact that SCL can become an unpleasant learning experience for students who do not have much experience and study skills to support them in an independent and active learning environment. Blumberg (2009) further asserts that especially less mature and less motivated students feel more comfortable and secure in teacher-centred environment as they prefer to have more guidance and structure in their courses.

As Weimer (2002) argues, it is very common for students to resist the policies and practices required to implement SCL. There are some common reasons why students resist student-centred approach. Firstly, the students may resist because SCL means doing more work both in and out of class. Doyle (2008) states that SCL consists of learning activities that require certain amount of effort. In a student-centred course, students are required to do more firsthand work, more group work, more research, more reflection and more talking and listening (p. 25).

The students may also resist SCL because they are afraid. This fear may turn to anxiety for some students who do not have much confidence in their knowledge, skills and abilities. Also depending on themselves rather than the teacher who is considered as an expert in the field may be frightening for the students. Doyle (2008) highlights the fact that many students are afraid of making mistakes and thus, avoid taking risks in learning. Avoiding learning risks inhibits effective learning. "Many students hope to avoid public failure or embarrassment by remaining silent" (Doyle, 2008, p. 23). Another issue which may cause resistance from students is involving students in tasks that are beyond their abilities to handle. Most tasks and assignments used in SCL require "a level of intellectual maturity" (Weimer, 2002, p. 153). However, not many of them possess this at the beginning.

Some other students, on the other hand, prefer their teachers to teach them the skills and knowledge that are required to pass exams and view discovery methods in SCL as a waste of valuable time (Toh et al., 2003). As Altinyelken (2011, p. 153) further states "…student-centred pedagogy is perceived as less effective in preparation for nationwide entrance exams; therefore, students may not find such pedagogical practices meaningful or useful."

- *Negative attitudes towards change and invulnerable teachers.* Negative attitudes inhibit reform in education (Attard et al., 2010). There may be various reasons for such negative attitudes which include past experience that resulted in failure, not being aware of the need for upgrading pedagogic skills

and not believing in the effectiveness of the new approach. Some teachers still resist to changes despite improvements in teacher education programs and findings of related research in the field of education. As Toh et al. (2003) claim although there have been many reforms towards the use of SCL in educational programs, it is rather difficult to find any evidence in teaching style of teachers at all levels of schooling. "Many teachers have switched over from overhead transparencies to PowerPoint and other web based links as their medium of delivery … however this has not altered the fact that teaching is still very much teacher-centred" (p. 196).

Most teachers have traditional conceptions of teaching and learning perceiving themselves as the main source of information responsible for knowledge transmission. Moreover, most teachers rely on TCT as they are not comfortable with using student-centred approach in their classrooms (Marsh, 2007; Yilmaz, 2009). Some teachers resist because they find the approach quite threatening. This threat may be related to the issue of power and authority in instruction (Weimer, 2002; Yilmaz, 2009). Brooks and Brooks (1999) also stress that adopting student-centred approach is both challenging and frightening for teachers as SCL requires teachers to perform different roles in teaching and learning. As Altinyelken (2011) reports that teachers with 20 or more years of experience have been refusing to implement student-centred practices and lecture most of the class time. She further stated that "the factors underlying such resistance was often explained as perceiving change 'tiring' and 'demanding', being used to old ways of doing things and having difficulty to change old teaching styles" (p. 154).

According to Attard et al. (2010), this type of resistance can be overcome with the use of different strategies which include informing people more, involving them in decision-making and providing training.

- *The expectations of parents.* Parents were highlighted as an important factor in adopting SCL. Parents, especially in some cultures seem to be more comfortable with teacher-centred teaching. Teacher is regarded as the one who is responsible for students' learning. Hence, a teacher who tries to pass the responsibility of learning to students may be viewed with suspicion and accused of not doing his or her job properly. Altinyelken (2011) reports parents' complaints about the new approach for putting too much emphasis on competences ignoring knowledge acquisition. She further stated that "…they (parents) tried to put pressure on teachers to supplement the curriculum with additional information and to spend more time in lecturing instead of student activities" (p. 154). According to Toh et al. (2003), the persistence of a teacher-centred teaching may not be true for Western families but this may be empowering in Eastern traditions. Güneş and Baki (2011) and Altinyelken (2011) also report Turkish parents as one of the obstacles in implementing SCL in schools.

- *The lack of familiarity with the term.* The biggest challenge in implementing SCL is to change the views of teachers and students and help them understand the philosophy behind SCL. "As instructors we are still unsure about how to achieve learner-centred teaching" (Blumberg, 2009, p. xix). SCL may be a new concept both for teachers and students. A study conducted

by Lea et al. (2003) at higher education on students' attitudes to student-centered learning revealed that 60% of the students had not previously heard of student-centred learning and those who had were not sure what the term meant.

- *High-stakes examinations.* High stakes examinations were highlighted as an important barrier in implementing SCL in schools (Altinyelken, 2011; Bolden and Newton, 2008; Gladys, 2012; Marsh, 2007; Yilmaz, 2009). High-stakes examinations are now widely used to evaluate public education in many countries as well as in Turkey and in North Cyprus. Since teachers are required to prepare students to high stakes tests, they tend to focus more on traditional ways of teaching than promoting the use of student-centred teaching and learning methods/techniques in their classrooms (Gladys et al., 2012; Marsh, 2007; Yilmaz, 2009). Moreover, principals of some schools may also apply pressure to teachers to obtain high grades especially in core subjects such as language, mathematics and science (Marsh, 2007). Another issue why teachers rely on traditional paper and pencil tests is that they are not trained on the use of alternative assessment methods (Güneş and Baki, 2011).

- *The content of teacher education programs and lack of in-service training.* Most teachers fail to use SCL because they were neither educated nor trained to teach in this way. One important issue is that "teacher education is rarely learner-centred, and so does not provide suitable models upon which fledging teachers can base their practice" (Schweisfurth, 2011, p. 428). Unfortunately,

lecture is still the dominant instructional practice used in education faculties (Güneş and Baki, 2011; Gladys et al., 2012; Mangan, 2011; Struyven et al., 2010; Yilmaz, 2009). Considering the fact that teacher candidates tend to teach in the way they were taught, it is very likely that they will adopt traditional approach to their teaching when they start their teaching careers (Mangan, 2011). As Struyven et al. (2010) state, student-centred teaching methods should be modeled to students and not taught through traditional lectures. Teachers need more hands on experiences rather than lectures in order to be able to utilize these methods and techniques in their future careers.

- *Large classes.* Having a large class is considered as an obstacle that restricts the use of SCL (Altinyelken, 2011; Güneş and Baki, 2011; Thanh, 2010). Teachers of large classes tend to adopt low level teaching strategies such as lecturing as they think they would not have enough time to monitor and guide all students engaging in student-centred teaching and learning methods (Hoyt and Perera, 2000; Thanh, 2010). Large classroom size is found to restrict active involvement of students. Likewise, teachers find it hard to organize group work activities because of the number of students in class (Altinyelken, 2011).

2.5 Critics on Student-Centred Learning

Although most research studies revealed positive results for the use of SCL in the teaching and learning process, SCL has also been criticized in some respects. According to researchers and educators the main critics on SCL are as follows:

- *Difficulty in providing students with choices.* In SCL, students are provided with choices regarding what to study and how to study, and the extent to which teachers can implement this depends on the structures of current educational institutions. As Sparrow et al. (2000) state, it is feasible to allow students when and where to study but it is rather harder to provide students with choice in content of the course. Moreover, some critics stress that SCL cannot be used effectively at the beginning of instruction in a subject as the students do not have much knowledge to decide what to study and how to study (Santrock, 2001).

- *The focus on individual student.* SCL focuses on the needs of individual student and thus may ignore the needs of the whole class. Simon (as cited in O'Neill and McMahon, 2005) highlights the point that "…if each child is unique, and each requires a specific pedagogical approach appropriate to him or her and to no other, the construction of an all embracing pedagogy or general principles of teaching become an impossibility" (p.33).

- *Too much attention on process of learning.* Some critics of SCL remark that SCL focuses too much on the process of learning (such as working collaboratively) and ignores academic content to be learned (Hirsh, 1996, as cited in Santrock, 2001).

- *Works better for some subjects.* Another criticism directed towards SCL is that it may work well with some subjects such as social sciences and humanities that contain many ill-defined problems. However, it may not be effective in teaching

well-structured subjects such as science and math's (Feng, 1996 as cited in Santrock, 2001).

- *Discovery methods are waste of time.* One of the arguments against SCL is that they require students to "reinvent the wheel" (Brandes and Ginnis, 1986, p. 17) in the learning process. Some people think that making students discover rules which are already tested and proven is a waste of time.

2.6 Common Misconceptions about Student-Centred Learning

The biggest challenge in implementing SCL for the first time is to change the views of teachers and students and help them understand the philosophy behind SCL. "As instructors we are still unsure about how to achieve learner-centred teaching" (Blumberg, 2009, p. xix). Attard et al. (2010) argue that SCL is a new approach which may sometimes be misinterpreted by some teachers and students. Below is a list of common misconceptions about SCL.

- *SCL does not mean anything in practice.* SCL makes use of various instructional strategies and this gives teachers the flexibility to choose and apply the ones based on the needs of their students. Since SCL does not refer to one specific method, does not mean that it does not amount anything in practice. It is important to keep in mind that there are individual differences in learning and thus SCL can be adapted to meet these differences (Attard et at, 2010).

- *SCL means no lecture.* "The purpose of lecturing is to explain ideas and concepts that students cannot easily learn on their own" (Doyle, 2008, p. 42). In SCL, one of the responsibilities of the teachers is to provide students with necessary resources that they need. However, as an equal member of the group, the teachers may sometimes decide to introduce new topics or ideas when it is appropriate (Brandes and Ginnis, 1986). In SCL teachers may decide to lecture in order to explain topics that contain difficult, challenging and complex knowledge for the students. As Doyle (2008) puts it, lectures are useless only if they deliver knowledge that students can learn on their own or from their peers. Lectures should also be avoided if they prevent students from reading the textbook. Some students do not read textbooks as they know everything will be explained in lectures.

- *SCL requires a higher amount of resources.* Teachers using SCL approach do not need to have any additional resources. Being able to implement SCL does not mean building new classrooms or installing multi-media packages in classrooms. SCL can be implemented effectively without having costly resources in class (Attard et al., 2010).

- *SCL is not suitable to all academic fields.* The way SCL is implemented may differ across different subjects and courses. SCL can be adaptable to all subjects and courses. There may be some differences regarding different subject disciplines, particularly between humanities and sciences. However, SCL contains an underlying learning philosophy which can be used in all fields (Attard et al., 2010).

- *SCL undermines the teaching profession.* SCL shifts the focus from teacher to students. In SCL teacher is not the only authority who decides on everything. Some people believe that without having all the authority, the teaching profession would lose its status and credibility. “Take them away and it is feared that the teacher’s power, reputation and position will collapse like a house of cards” (Brandes and Ginnis, 1986, p. 27). However, giving the teacher the role of a facilitator and a guide does not diminish the importance of the teaching profession (Attard et al., 2010)

- *Students have more work to do in SCL.* SCL does not require a higher workload for students. Instead, it enables them to reorganize their study time and work more on authentic learning tasks rather than trying to memorize facts of information. This enables them to be more equipped to solve problems in real life (Attard et al., 2010).

- *Teachers have to do more preparatory work in SCL.* In TCT, teachers have to do preparatory work in order to make sure that students take notes in lessons and then repeat them in exams. However, in SCL, teachers are not required to do this. Instead, they need to use various methods and techniques to meet the needs of their students. According to Attard et al. (2010), the preparation work does not increase in the long run. Moreover, it becomes more enjoyable for the teachers.

- *Problem-based learning is the same as SCL.* There are many teaching methods that can be used to apply SCL approach in classroom. Problem-

based learning is just one of the teaching methods under SCL. “SCL is therefore, the umbrella under which problem-based learning falls” (Attard et al., 2010, p. 62).

- *Students learn very little subject matter.* SCL requires students to take active role in teaching and learning process. Some teachers believe that making students active through student-centred teaching and learning methods would reduce the amount of content covered in class and thus, affect their courses in a negative way (Blumberg, 2009). However, according to recent research, students tend to learn more through the use of SCL. It may be possible for students to remember certain facts, yet they develop more skills such as problem solving and critical thinking that they will need in real life (Attard et al., 2010).

- *Not all teachers can teach in a student-centred way.* All teachers can implement SCL successfully in their classrooms regardless of their age and the subject they teach. It is paramount to provide teachers with the necessary support through professional development (Attard et al., 2010).

- *SCL cannot be used in large classes.* There is a common belief that SCL requires small classes as student-centred teaching methods cannot be implemented in courses with high student enrollment. However, Blumberg (2009) contends that the number of students in a class does not have much effect on the use of SCL. Teachers can implement student-centred teaching

methods effectively as long as they do careful planning of the teaching methods and activities.

2.7 Current Research on Student-Centred Learning

There are numerous studies available on SCL in the literature. Majority of them are on the effectiveness of SCL in educational institutions in all levels. They are mainly experimental studies in which SCL is compared to TCT in terms of both cognitive and affective aspects of learning including learning outcomes, retention of knowledge, approaches to learning and motivation to learn. Some of these studies also focus on teachers' and students' perceptions of, opinions and attitudes towards SCL. However, there are only few studies investigating the extent to which SCL is implemented in classroom teaching and learning regarding the main components of SCL. There are also some other studies on the implementation of SCL in different levels of education with different grade levels and age groups conducted in various parts of the world, in developed and developing countries.

Current research conducted on SCL indicates that SCL is more effective than traditional TCT because it encourages deep approach to learning, increases the acquisition and the retention of knowledge leading to more positive learning outcomes in the teaching and learning process. One of those studies is a meta-analysis conducted by Johnson and Johnson (1999) on cooperative learning. This study consisted of research that aimed to investigate the impact of cooperative learning methods on student achievement. In total 158 studies were included in which cooperative learning methods were compared to traditional teaching that contains competitive or individual teaching/learning elements. The studies ranged from controlled field experimental studies to case studies. 46% of the studies were

conducted in elementary schools, 20% in middle schools, 11% in high schools and remaining 24% in postsecondary institutions. The findings of the study clearly showed that cooperative learning methods significantly increase the achievement of students compared to traditional teaching methods. The results of the analysis revealed that cooperative learning enhances student achievement.

Dochy et al. (2003) conducted a similar meta-analysis that consisted of 43 empirical studies investigating the impact of problem-based learning on knowledge acquisition and development of problem solving skills on college students. Only the experimental studies that make use of control and experiment groups were included in the study. The required data were collected through pretests and posttests administered to students. The results demonstrated that problem-based learning has a positive effect on both knowledge acquisition and the development of problem solving skills. The most striking result of the analysis was that students tend to acquire more knowledge when they are taught with traditional methods. However, students who were taught with problem-based learning retain the knowledge for a longer period of time.

Swan (2006) reported that student-centred approach to learning where students are engaged in discussion, reflection and collaboration activities is more effective in developing students' understanding of and attitudes towards mathematics compared to traditional teaching. The aim of this study was to investigate the effect of a new teaching program called *Learning mathematics through discussion and reflection: algebra at GCSE* which was based on the use of student- centred teaching methods and techniques. In total, 70 colleges in England applied to take part in the study. The

new teaching program was introduced to teachers teaching GCSE classes in 44 colleges and the remaining 26 colleges were used as a control group using traditional methods of teaching. All teachers in 44 colleges received training on the use of the teaching resource. In total, 334 students participated in the study. At the end of the study, students' learning and also the attitudes, confidence, anxiety and motivation of students towards learning Maths were evaluated through written tests and three different attitude scales. The results indicated that learning enhanced in classes where student-centred methods and techniques were used. Moreover, the results also indicated that students' confidence and motivation remained the same in contrast to a control group where there was a decline in these attributes.

In a case study, Yuen and Hau (2006) explored the learning process and also compared the learning outcomes of students between teacher centred teaching and constructivist teaching. 74 first year university students taking Educational Psychology course at a university in Hong Kong participated in the study. Both constructivist and teacher centred teaching methods were implemented in the course which lasted for 4 months. The data were collected through audio recorded classroom observations, pre and post course interviews and student assignments. Students' achievement was assessed at 2 levels: how much students have learned after each lesson and the retention and the use of knowledge at the end of the course. The data collected revealed that the amount of knowledge gained and also the retention and the use of knowledge in critiquing and generating tasks in constructivist teaching was much better compared to teacher-centred teaching. As researchers stated, more material can be covered in a shorter time in teacher centred

teaching. Yet, the retention of knowledge is usually much higher in constructivist teaching in which students are actively engaged in the lesson.

Smith and Cardaciotto (2011) conducted a research in an Introductory Psychology course at a university in the United States in which students were assigned two different out of class assignments namely active learning and content review activities in relation to the topics covered in their course. 1091 students participated in the study. The students were put in two groups randomly. One of the groups completed active learning activities and the other one the content review ones. Active learning activities consisted of tasks that were based on discovery of facts and application of knowledge whereas content review ones included tasks such as puzzles and true-false questions that put students in a passive role. The data were collected at the end of the semester through self-reporting survey on a 5-point Likert Scale. In the survey, the students were asked to self-report on the retention of knowledge and the engagement with the course material. The results showed that students who were assigned active learning tasks reported greater retention of and also engagement with the materials assigned in their course.

In an experimental study, McDonald and Bound (2003) investigated the impact of formal self-assessment training on high school students' performance in external examinations in Barbados. In total, 10 high schools participated in this study. The schools were chosen on the basis of their success in national examinations. The participating schools consisted of schools which were representative of the top, middle and bottom levels of academic achievement in national examinations. Two grade 11^{th} classes, from each of the ten schools, were selected by teachers at the

schools. There were usually 30 to 40 students in each class and all students in the same class were taught the same subject by the same teacher at the same time. The students were randomly assigned to experimental and control groups. Firstly, the class teachers selected from a sample of high schools were trained regarding how to develop students' self-assessment skills and then the students were given training in self-assessment by their class teachers as part of their final year curriculum. There were 256 participants in the experimental group and 259 in the control group. The students in the experimental group received formal training in self-assessment skills for the entire three terms of the academic year. The control group, on the other hand, did not undergo such training. The research design was a Post-test Only Control Group Experimental Design where self-assessment training was the experimental variable and the post-test was the results of the final examinations. Hence, the required data were collected through final external examinations. The data revealed significant differences between 2 groups in terms of academic achievement in national exams; the students in the experimental group scoring significantly higher than the students in the control group. The results revealed that self-assessment training has an impact on student academic achievement.

Weaver (2006) conducted a study aimed to explore students' perceptions of written feedback. 44 students in the Business and Art & Design Department participated in the study. A mixed-method approach of qualitative and quantitative data collection tools were implemented in the study. The student responses showed that students value teacher feedback. Yet, students also stated that teacher comments could be more helpful. Data gathered revealed that students need teacher help and guidance in understanding and using feedback. According to the content analysis of feedback

samples, there were four main themes of feedback which were considered as unhelpful by students. The themes included comments which were too general or vague, lacked guidance, focused on weaknesses and, not related to the assessment criteria. Based on the findings of the study, the researcher suggested that the feedback given to students should base on the context of assessment criteria and learning outcomes. Moreover, the researcher further asserted that providing feedback timely can actually make it more effective and improves student learning.

As it has been discussed in the literature, SCL also enhances students' motivation to learn and leads to more positive attitudes and opinions towards subject taught. For example, in an action research project, Bouris et al. (1998) measured students' level of motivation before and after they were exposed to student-centred cooperative learning lessons in their Maths course. The participants were 510 students who were from a traditional educational background with a low level of intrinsic motivation to cope with their Maths lessons. The data were collected by implementing a motivation scale before and after the course. The findings demonstrated a significant increase in student motivation to learn Maths after being exposed to cooperative learning lessons.

Wohlfarth et al. (2008) examined students' opinions regarding the five dimensions of SCL as proposed by Weimer (2002). 21 students taking two different courses who were enrolled in a graduate psychology department in the United States participated in the study. Both courses were taught in a student-centred way by the same professor over a semester. The required data were collected qualitatively at the end of the semester through the use of two different student course evaluation forms. The

results of the study revealed that students had very positive opinions towards the use of SCL. They stated that SCL improved their critical thinking and guided them towards autonomy.

In an experimental study, Alfassi (2004) examined the effects of student-centred instruction on high school students' motivation and academic achievement. The participants were 74 underachieving students in Grade 8 and 9 who were at risk of dropping out of high school. The students lacked the motivation, necessary skills and knowledge required and thus, were placed in remedial schools. The participants consisted of students who had similar academic skills and knowledge at the beginning of the study. In the study, there were one control group and two experimental groups. Both control and experimental groups were exposed to the same remedial academic program. However, the control group was taught in a traditional way and the experimental groups in a student-centred way. The data were collected quantitatively through the use of a scale designed by Harter in 1981. The scale contained 30 items and focused mainly on intrinsic versus extrinsic motivation in classroom learning. The findings of the scale that was administered to students at the end of the course revealed significant differences between control group and experimental groups. According to the results, the students in the experimental group displayed greater intrinsic motivation and also higher achievement scores than the students in the control group. As Alfassi (2004) stated, the findings of this study clearly match with the theory that SCL increases intrinsic motivation of students in classroom teaching and learning.

A similar study conducted by Cheang (2009) aimed to investigate the effect of SCL approach on students' motivation. This study was conducted in a third year course in School of Pharmacy in Virginia Commonwealth University. In total 110 students participated in this study. The course was taught in a student-centred way in which students were asked to work in groups of 5 or 6 throughout the semester. The Motivated Strategies for Learning Questionnaire (MSLQ) was used to measure students' motivation. MSLQ contained 6 motivational subscales: intrinsic goal orientation (focusing on learning and mastery), extrinsic goal orientation (focusing on grades and approval from others), task value (students' judgments of how interesting, useful and important the course content is), the control of learning beliefs (students' beliefs that outcomes are a result of one's own effort rather than extrinsic factors such as luck or the instructor), self-efficacy and test anxiety. The Questionnaire was implemented twice before and after the course. The results obtained from questionnaires revealed that the students' intrinsic goal orientation, control of learning beliefs and self-efficacy have improved significantly at the end of the course.

In 2010, Keziah A. conducted a comparative study on problem-based and lecture-based learning on secondary school students' motivation to learn science. The aim of the study was to investigate whether problem-based learning increases secondary students' motivation towards learning science or not. In his study, Keziah A. did an experimental study in four different schools in Nigeria. 810 secondary school students participated in the study. The students in each school were put in four groups: two experimental and two control groups. Students' Interest Inventory (SII) designed by the researcher was used in order to collect necessary data. The inventory

was administered as pretest and posttest. The findings revealed significant differences between two groups. The results demonstrated that problem based learning enhanced motivation level of students' more than lecture-based learning.

Olina and Sullivan (2004) conducted a research that aimed to explore the impact of two different formative assessment methods: student self-evaluation and teacher evaluation on student academic achievement. The study was a quasi-experimental posttest only control group design. The participants were 341 10^{th} and 11^{th} grade students studying in 16 different classes in 8 different schools in Latvia. A special program called *Learning Explorations* was designed to be used in the research. The program consisted of 12 lessons in which students were required to write a report. 16 classes were randomly assigned to 4 treatment conditions: No evaluation, self-evaluation, teacher evaluation, and self and teacher evaluation. All students received training on how to use the rating scale designed to be used in evaluating the reports and writing comments regarding their own work. Ratings of the student projects, posttest scores, student and teacher attitude surveys were used as data collection tools. The results of the study revealed that students in teacher evaluation and self and teacher evaluation received significantly higher grades. Moreover, students in self-evaluation groups had more positive attitudes towards lessons and had greater confidence with respect to their abilities to conduct experiments than students in other two groups. However, the results also indicated that students preferred teacher evaluation more than self-evaluation and they believed that teacher evaluation is more effective in learning.

Ljungman and Silen (2008) designed a project that aimed to involve students in peer-assessment in order to enhance student responsibility and independence in learning. The participants were the students in the sixth semester in a PBL-based Master's programme of Medical Biology department at a university in Sweden. The students engaged in peer-assessment of fifth-semester students' examinations together with the faculty in the same department. In total, 139 students, nine faculty examiners and 24 peer examiners participated in the project. The data were collected through the use of questionnaires. The examination and the assessment situation were designed according to the principles and characteristics of student-centred learning, especially in the form of PBL used at the faculty. Evaluations from six occasions, spring and fall, 2003-2005, were included in the study. The findings suggested that involving students in assessment as equal partners with faculty enhances students' metacognitive competences required for them to be responsible and autonomous learners. The findings also showed that participants reported positive attitude towards peer-assessment procedures over the years.

Current research indicates that developing countries are still struggling with serious problems that hinder the effective implementation of SCL. Those problems include the nature of reforms and their implementations, limited resources such as technology and study materials and the effect of culture (Schweisfurth, 2011). Current research clearly supports the argument that TCT has been used as the main method of instruction in classrooms in developing country contexts. For example, Mustafa and Cullingford (2008) investigated teachers' attitudes towards the use of text books with the aim of finding out the kind of teaching methods used by the teachers. The study conducted in 46 schools in Jordan. In total, 1242 students, 98

teachers and 46 head teachers participated in the study. The required data were collected both quantitatively and qualitatively through the use of a questionnaire and semi-structured interviews. The results demonstrated that the teachers mainly use lecturing as the main teaching method.

Hardman et al. (2008) explored teacher-student interaction in classrooms as well as teachers' attitudes towards classroom talk, the role of the teacher and questioning and feedback strategies in schools in Nigeria. The study employed a mixed-method which was based on video recordings of 42 lessons and 59 teacher questionnaires. The sample consisted of schools selected from 10 Nigerian States. In total, 20 schools were randomly selected for the study. The data that included interaction analysis, discourse analysis and teacher questionnaire revealed that the instruction in primary schools in Nigeria is based on rote learning with little student participation. The researchers defined the instruction in most schools in Nigeria as teacher-centred and lecture-driven. Instead of encouraging active participation through answering questions, explaining and demonstrating, teachers prefer to use 'lecture and drill' approach in their classrooms. The researchers also highlighted the discrepancy between perceived use of questioning and feedback strategies and teachers' actual classroom practice.

Saito et al. (2008) conducted a study which was based on a project aimed to conduct a series of in-service training programmes to teachers on child-centre education in Vietnam. The research employed a case study method and contained in depth descriptions and interpretations. The study took place in 267 primary schools with approximately 160,000 students and 8000 teachers. Despite the introduction of a new

curriculum which is based on child-centred approach, the researchers reported the actual teaching practice in primary schools in Vietnam as traditional institutions that foster competition among children. They further added that "in reality, children who need to be at the centre of the educational policies and practices were still oppressed and regarded as marginal" (p. 101-102).

O'Sullivan (2004) explored the implementation of student-centred approach based on an action research study of a three-year in-service education and training (INSET) program offered to 145 unqualified primary teachers in Namibia. The data collected reported contradictory results. Although the teachers claimed to be implementing SCL in their classrooms in interviews, classroom observations indicated that traditional teaching is still the major teaching method used in classrooms. The study also demonstrated that teachers did not know what SCL actually means in practice. The researcher also investigated the reasons for not implementing student-centred approach and listed limited resources, cultural factors and learner background as the main problems that hinder the use of SCL in primary schools.

Mtika and Gates (2010) explored the teacher education programme in Malawi focusing on the use of SCL by student teachers who did not have any prior teaching experience. In total, four student teachers who were conducting their teaching practice in a secondary school and one supervisor participated in the study. This was a qualitative case study in which data were collected through the use of interviews, observations and logs. The data gathered from observations indicated that student teachers tended to apply SCL only at a surface level such as using group work activities where students sat in groups but worked individually. The data gathered

from student teachers demonstrated that they mainly use the lecture method in order to present learner-centred education in their methodology courses.

Chiu and Whitebread (2011) explored teachers' perceptions and their implementation of the new constructivist mathematics curriculum in Taiwan. The data were collected qualitatively through interviews and classroom observations. Four grade 5 teachers teaching in a public primary school participated in the study. According to the results of the study, despite receiving in-service training on constructivist methodologies in teaching mathematics, none of the teachers who participated in the study fully implemented these methods in classroom teaching and learning in Taiwan. The results also showed that teachers implemented the new curriculum in different ways.

A very recent meta-analysis, conducted by Schweisfurth (2011), which was based on articles relevant to the implementation of SCL, illustrated that SCL is too challenging to be implemented in developing country contexts and thus traditional TCT is still very common in schools. In this study, 72 research articles published between the dates 1981 to 2010 were analysed. The articles examined represented all the developing regions of the world. The focus of the studies also ranged from primary and secondary schooling to colleges and universities and non-formal adult education institutions as well. The majority of the studies explored were on the issues and problems of the implementation of student-centred based programmes in developing country contexts. After identifying each issue and problem descriptively, the data were analysed through cross-study analysis. According to the results, the main problems and issues that hinder the use of SCL were listed as the problems with the

nature of reforms, lack of necessary materials and human resources and interactions of divergent cultures.

In another study which was conducted in Turkey, Altinyelken (2011) explored teacher opinions on SCL, classroom practices used and perceived barriers that impeded the implementation of SCL in classroom teaching and learning in primary schools. This was a case study that made use of semi-structured interviews and classroom observations as data collection instruments. In total, 76 lessons were observed and 69 primary school teachers and 14 school managers were interviewed. During interviews, the informants were mainly asked questions about curriculum including content, assessment and pedagogical approach. The data were analysed through the use of content analysis. In reporting findings, the researcher mainly made use of data gathered from teacher interviews. The findings indicated that the use of SCL seemed to be problematic in practice. According to primary school teachers, there were serious issues that interfere with their use of SCL. These issues included poor teacher training, large classes, lack of resources, assessment system and parental over involvement in projects. The researcher recommended adopting a more structured approach that would better suit the social, economic and political realities of Turkey.

Yilmaz (2009) assessed the challenges that prevented the use of SCL regarding Turkish education system including teacher education programs, teachers and students. The study employed case study method in which the data were collected through interviews with 41 educators working at faculties of education in Turkey. The data were analysed employing content analysis. Based on the data collected, the

main challenge that hindered the use of SCL was reported to be the centralised education system with rigid national curriculum. Regarding teacher education in Turkey, the unsuitability of course content to K-12 schools, lack of qualified instructors, westernised curricula, lack of sufficient elective courses and the use of lectures as the main method of instruction were found to be the main challenges. The findings also demonstrated that Turkish teachers considered themselves as the main transmitter of knowledge with traditional teacher-centred conceptions of teaching and learning. With respect to the students, they were reported to be neither ready nor willing to be at the centre of instruction finding it difficult to be active learners.

Güneş and Baki (2011) also investigated the problems teachers face in implementing SCL in mathematics instruction in primary schools in Turkey. This was a case study in which the qualitative data were gathered through classroom observations and interviews. Nine teachers teaching mathematics to 4^{th} graders were both interviewed and observed at three different times in the teaching and learning process. Based on the data gathered from the interviews, poor infrastructure of schools, high student number in classrooms, insufficient number of contact hours and teachers being incompetent in employing SCL were the main problems reported by the teachers. The data obtained from classroom observations also supported what teachers reported in the interviews.

Another study that explored the factors hindering the student-centred methods was conducted by Gladys et al. (2012) in Zimbabwe. This was a descriptive study that involved questionnaires and interviews with fifteen in service mathematics teachers. The findings demonstrated that student-centred methods were not implemented in

mathematics instruction in the district where this study was carried out. The findings revealed various factors that impede the use of SCL in classroom practices. The main factors reported by the teachers included the nature of teacher training, assessment system, time constraints, lack of resources, size of classes, heavy workloads and teachers' subject matter knowledge.

Despite educational reforms and developments as well as educational opportunities including professional development programs and technological resources offered, the studies conducted on the implementation of SCL in developed country contexts also demonstrated that a great deal of teaching is didactic or teacher-centred in nature (Kember, 2008; Weimer, 2002). As Toh et al. (2003) state, although there have been many reforms towards the use of SCL in educational programs, it is rather difficult to find any evidence in teaching style of teachers at all levels of schooling. "Many teachers have switched over from overhead transparencies to PowerPoint and other web based links as their medium of delivery … however this has not altered the fact that teaching is still very much teacher-centred." (p. 196).

Murphy (2006) for example examined the Irish School Curricula which have been used in Ireland for more than 30 years aiming to find out the extent to which child-centred curriculum is actually being implemented in classroom practice. The data were gathered through the administration of a questionnaire in which teachers were asked questions regarding the resources, teaching methods and their attitudes towards the curriculum. 300 senior infant teachers teaching children aged 5 to 6 in primary schools participated in the study. The data obtained from the questionnaire revealed that most teachers are implementing traditional lessons rather than activity-based

child-centred pedagogy in their classrooms. As reported by Murphy, only 22% of teachers indicated that they often use child-centred activities in their classrooms. Lack of appropriate resources and high pupil-teacher ratio were found to be the main reasons in implementing traditional teaching. The results of the study also revealed that teachers' assumptions and understanding of child-centredness differed from those stated in the curriculum.

Deed (2010) explored how students interpreted the behavioural and cognitive expectations of a self-regulating learning task. The study employed a case study method in which a class of 25 eighth grade students in a junior secondary college in Australia were asked to complete a task that required them to be self-regulated learners. The task lasted for three weeks and required students to plan, monitor, control, and evaluate their own work and also make use of the reflective skills. The data were collected through classroom observations and interviews with the students. The results of the study indicated that the students were reluctant to be self-regulated learners and they preferred to remain dependent on the teacher during the completion of the task.

Eberly et al. (2001) examined the nature and content of general education syllabi at a state university in Michigan. This was a descriptive study where a total of 145 syllabi covering 100 general education courses from 1997 to 1998 were analysed. The findings of the study highlighted knowledge transmission as the main focus with very little attention given to skills and attitude development. According to the data collected, most courses focused heavily on text books and lectures as the main method of instruction giving little emphasis on student-centred learning elements

such as field experience, oral presentations and experiential learning. Moreover, with respect to the assessment procedures, traditional methods, mostly multiple choice tests were found to dominate with very little inclusion of alternative assessment methods such as projects and presentations.

Lammers and Murphy (2002) investigated the frequency and the duration of the use of non-lecture teaching techniques in university classrooms. Non-lecture techniques included active learning activities such as student presentations, cooperative and collaborative activities, debates and class discussions. In total, 48 instructors teaching in 58 different classes across a variety of disciplines at the University of Central Arkansas in the United States participated in the study. The data were collected qualitatively through classroom observations. The results demonstrated that lecture was the main teaching technique used in most classrooms at the university. The results also revealed that time spent for lecturing was positively related to class size and that male instructors tended to lecture more compared to female instructors.

A study conducted by Hoyt and Perera (2000) in Kansas State University indicated that 45% of the faculty used lecture as their main method of instruction. The data for this study were provided by the institutions that participated in the IDEA program from September 1998 to August 1999. The main aim of this program was to identify the major teaching approaches used in classrooms. The sample included instructors teaching various courses at universities. In order to ensure the reliability of the findings only the institutions that provided data with a 75% or higher response rates were included in the study. According to the results of the study, the most favourite teaching approach used by the instructors was the lecture. Based on the data

gathered, most instructors preferred lecturing because of its advantages. As instructors stated, lecture notes required very little revisions each year saving preparation time. Furthermore, they could be used effectively with large classes. Besides that, they felt more comfortable when lecturing than using any other methods.

Nunn's (1996) observational study conducted in a large state university in the United States based on students' and teachers' perceptions indicated that only 5.86% of total class time consisted of active involvement of students which was equal to only one minute of class time. The study was conducted in a state university. The data were gathered from classroom observations with self-report surveys administered to instructors and students, aiming to explore the interaction in classrooms with a focus on techniques teachers used to elicit student participation and also the amount of participation that occurred in the class. The sample consisted of 20 professors teaching social sciences and humanities and their 579 students. The data revealed that the most frequently used techniques were "teacher questions", "rhetorical questions" and "teachers asking for elaboration of student answers". Regarding the amount of participation occurred in class; the researcher concluded that only little time was devoted to interaction with only few students' involvement.

The study conducted by Liu et al. (2005) in a south western university in the United States provided further support to the implementation of teacher-centred forms of teaching in classrooms. The aim of this study was to investigate the teaching style of instructors in a university. The data were collected quantitatively through using adapted version of the Principles of Adult Learning Styles which had been designed

earlier by Conti (1979). 21 instructors participated in the study. The results of the study demonstrated that most instructors still used traditional TCT despite the call for a paradigm shift to SCL.

A study conducted by Lea et al. (2003) at a higher education institution on students attitudes to SCL in the UK revealed that majority of the students had not previously heard of SCL and those who had were not sure what the term meant. The aim of this research article was to investigate higher education students' perceptions of and attitudes to SCL. Both qualitative and quantitative data collection procedures and analysis were used as two complementary methods in this study and the necessary data were gathered through focus groups and an Internet questionnaire. 48 full time psychology students participated in 8 focus groups and a total of 197 students responded to the questionnaire. The results of the study also revealed that the students generally held very positive attitudes to SCL. However, the qualitative data indicated that 60% of the students had not previously heard of student-centred learning and those who had, were not sure what the term meant. The data demonstrated that the students perceived traditional methods less motivating and less effective than student-centred methods.

Mangan (2011) investigated teachers' perceptions of their role in teaching and learning process and to identify the factors that impede teachers to change their teaching practice in Ireland. This was a case study in which the data were collected through semi-structured interviews. In total, six teachers participated in the study. The findings demonstrated that teachers' perception of their role was closely related to their learning experiences in formal education settings which were traditional and

content-oriented. According to the data gathered, there were four factors that mainly prevented teachers to shift their approach and these were teachers' beliefs and values in teaching and learning, their experience in implementing change, student feedback and staff development.

Bolden and Newton (2008) also explored potential barriers that hindered the effective use of investigative approach in schools in the UK. The data were collected qualitatively with the use of in-depth semi-structured interviews and classroom observations with three mathematics teachers teaching in three different English schools. The findings of the study demonstrated that although teachers were willing to adopt an investigative approach in teaching maths this was largely incompatible with some of the requirements of the national curriculum. The common potential barriers that were reported by the teachers included the amount of curriculum content to be covered, time constraints, working practices of teachers and the use of Standard Assessment Task tests (SATs) as the current assessment method.

As seen above, the literature has provided evidence that SCL is a more effective teaching and learning approach compared to TCT. Therefore, today, educational institutions at all levels are expected to implement SCL effectively and efficiently in the teaching and learning process (Blumberg, 2009; Felder and Brent, 1996; Hockings, 2009; Stes et al., 2007; Vighnarajah et al., 2008). As a result of this, many educational institutions all around the world claim that they have put SCL into practice in classroom teaching and learning. However, the studies on the implementation of SCL in all levels of education indicate that in reality traditional teacher-centred approach in which lecturing is used as a primary teaching method is

still favored in schools for various reasons (Blumberg, 2009; Brandes and Ginnis, 1986; Ellington, 1996; Hardman et al., 2008; Hockings, 2009; Lea et al., 2003; McCombs and Miller, 2007; McGrath, 2008; Sablonniere et al., 2009; Saito et al., 2008; Schweisfurth, 2011; Stes et al., 2007; Weimer, 2002). The studies conducted both in developing and developed country contexts clearly demonstrate that there are problems in the implementation of SCL, and TCT is still being used extensively in classroom teaching and learning. This means that the journey from TCT to SCL has not been completed and still there is a lot to do in order to ensure the smooth transition from TCT to SCL.

There are many studies conducted on SCL in the literature. Most of these studies are on the effectiveness of SCL in which SCL is compared to traditional TCT. The results of most studies revealed that SCL is a more effective teaching and learning approach compared to traditional teaching in terms of both cognitive and affective aspects of learning including learning outcomes, retention of knowledge, approaches to learning and motivation to learn. There are also some other studies on the implementation of SCL employed both in developing and developed country contexts. Unfortunately, current research demonstrates that traditional teaching still dominates classrooms in most countries all around the world. Moreover, research indicates that both developing and developed countries are still struggling with some factors that hinder the effective use of SCL in classroom practices. Some of the factors were reported to be the nature of educational reforms, lack of in-service training for teachers, curriculum including the assessment system and educational materials used and lack of necessary resources.

The research conducted on SCL indicates that there are only few studies examining the extent to which SCL is implemented in teaching and learning process regarding the main components of SCL namely, motivation, instructional strategies, distribution of power, teacher and student roles and assessment making use of both quantitative and qualitative data collection methods based on teachers perceptions and opinions.

Chapter 3

METHODOLOGY

This chapter describes methodological premises of the research that include research design, population and sampling, instrumentation, data collection procedures, data analysis and ethical issues considered throughout the study.

3.1 Research Design

The purpose of this research is to find out the extent to which SCL is implemented in general high schools with respect to motivation, instructional strategies, distribution of power, teacher and student roles, and assessment in classroom teaching and learning based on teachers' perceptions and opinions and further explore whether the use of SCL varies with respect to teachers' characteristics including gender, subject taught, teaching experience and pedagogical knowledge. This study also aims to identify the barriers that hinder the effective use of SCL in general high schools in North Cyprus.

The sequential explanatory design (Creswell, 2003; Creswell et al., 2003), in which the collection and analysis of quantitative data were followed by the collection and analysis of qualitative data, was employed within mixed method approach. The sequential explanatory design was an appropriate design for this study because quantitative study was given the priority. Both quantitative and qualitative findings

obtained were integrated at the end of the study. The sequential explanatory design used in this study is shown in Figure 3.1.

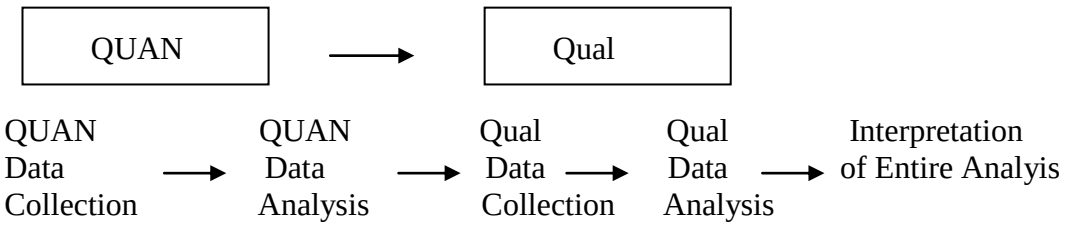

Figure 3.1 Sequential explanatory design. Adapted from Creswell et al., 2003, p. 225.

The purpose of using this design was to make use of the qualitative results (detailed opinions) in order to better understand the quantitative results (broad numeric trends). The quantitative part was appropriate for investigating teachers' perceptions of their use of SCL. However, it was not suitable for gathering in-depth data regarding teachers' implementation of SCL. As Merriam and Simpson (2000) put it, interviews enable researchers to gather the kind of data that cannot be obtained by the use of questionnaires. Hence, qualitative component was integrated into the current research in order to gather in-depth data with respect to the use of SCL in schools.

Based on the sequential explanatory design used, the study was carried out in two different phases. The first phase consisted of quantitative research that included the administration of Student-Centred Learning Inventory (SCLI) to teachers in general high schools aiming to investigate their perceived use of SCL in classroom teaching and learning and also explore whether their perceived use of SCL varies with respect to some of their characteristics. The second phase on the other hand, consisted of

qualitative research where SCLIF was used to generate thick descriptions of teachers' implementation of SCL in classroom teaching and learning and also explore the barriers that hinder the use of SCL in general high schools in North Cyprus. All the interviews were carried out in teachers' mother tongue which is Turkish to avoid language barriers.

3.2 Population and Sampling

The population of the study included all general high school teachers working for the Ministry of National Education in the 2010-2011 academic year. The population consisted of 430 teachers teaching in general high schools. Since mixed-methods research design was implemented, which aimed to collect both quantitative and qualitative data, different sampling techniques were used.

Regarding the first phase of the research no sampling technique was used. Instead of drawing a sample, the researcher tried to reach all general high school teachers due to small size of the population. Therefore, sufficient number of copies of the SCLI was distributed to all teachers teaching in 11 different schools. Out of 430 high school teachers, 370 of them volunteered to participate in the study. However, 61 of the returned inventories were disregarded because of missing data. In total, 309 of the inventories were found to be valid to be used in the study. The characteristics of the teachers participated in the study data are shown in Table 3.1.

Table 3.1

Characteristics of the teachers in the first phase of the research (N = 309)

Characteristics		**N**	**%**
Gender	Male	104	33.7
	Female	205	66.3
Subject taught	Languages	54	17.5
	Science	86	27.8
	Social sciences	135	43.7
	Fine arts	34	11.0
Teaching experience	1-5 years	67	21.7
	6-10 years	74	23.9
	11-15 years	66	21.4
	16-20 years	57	18.4
	20-above	45	14.6
Pedagogical knowledge	Teacher education program	155	50.2
	Teacher certificate program	154	49.9
	No pedagogy	6	1.9
	Others	6	1.9

As seen in Table 3.1, two thirds of the participants were female and remaining was male. With respect to subject taught, 17.5% of the participants were teaching language subjects, 27.8 % science, 43.7 % social sciences and remaining 11.0% fine arts. Regarding the teaching experience of the participants, 45.6% had teaching experience between 1-10 years, 39.8% 11-20 years and the remaining 14.6% had teaching experience for 20 years or more. For pedagogical knowledge, half of the teachers were graduates of teacher education programs and the other half were the graduates of other departments but had teaching certificates. Only 1.9% of the teachers had no pedagogy.

With respect to the second phase of the research, the sample was drawn purposively (Fraenkel and Wallen, 2006). The aim of using purposive sampling was to select the kind of sample that would be the good representative of the characteristics of

teachers participated in the first phase of the study. Therefore, the sample was chosen from 309 teachers who already took part in the administration of SCLI. Purposive sampling technique enabled the researcher to make sure that there was diversity in gender, subject taught, teaching experience and pedagogical knowledge among teachers. In total, there were 11 general high schools in North Cyprus so the researcher decided to interview three teachers from each school. Consequently, the sample for the second phase of the study consisted of 33 teachers teaching in 11 general high schools in North Cyprus in the 2010-2011 academic year. The characteristics of the research sample of teachers are displayed in Table 3.2.

Table 3.2

Characteristics of the teachers in the second phase of the research (N = 33)

Characteristics		**N**
Gender	Male	13
	Female	20
Subject taught	Languages	5
	Science	11
	Social sciences	14
	Fine arts	3
Teaching experience	1-5 years	1
	6-10 years	13
	11-15 years	9
	16-20 years	7
	20-above	3
Pedagogical knowledge	Teacher education program	15
	Teacher certificate program	18

As it is seen in the table, with respect to the second phase of the research, two thirds of the participants were female and the remaining 13 were male. Regarding the subject taught, 14 of them were teaching social sciences, 11 science, 5 languages and the remaining 3 fine arts. For the teaching experience, 14 of them had a teaching experience between 1-10 years, 16 had 11-20 years and the remaining 3 had a

teaching experience for 20 years or above. Finally, considering the pedagogical knowledge, almost half of the teachers were the graduates of a teacher education program and the other half were the graduates of a teacher certificate program.

3.3 Instrumentation

Since mixed methods design was implemented in this study, two different data collection instruments were developed and used in two different phases of the study. In the first phase of the study, student-centred learning inventory was used and in the second phase, student-centred learning interview form was employed. Table 3.3 displays data collection instruments together with participants, paradigm and research questions addressed in this study.

Table 3.3

Data collection instruments

Instrument	Participants	Paradigm	Research Question(s)
SCLI	Teachers	Quantitative	1 and 2
SCLIF	Teachers	Qualitative	1 and 3

3.3.1 Student-Centred Learning Inventory (SCLI)

Student-centred learning inventory (SCLI) was one of the data collection instruments developed to be used in the study. The aim of the inventory was to find out teachers' perceptions of their use of SCL in classroom teaching and learning pertaining to motivation, instructional strategies, teacher and student roles, distribution of power and assessment and also to further examine whether teachers' use of SCL vary with respect to their gender, subject area, teaching experience and pedagogical knowledge.

The SCLI consisted of 2 sections. The first section includes demographic data and it included 5 questions about participants' gender, subject taught, teaching experience, level of education and pedagogical background. The second section consisted of items that aimed to investigate teachers' perceptions of their use of SCL through the use of five different scales.

The five scales included in the inventory were developed after conducting an extensive research on related literature in the field. Firstly, the main components that characterize SCL were identified. These components were derived from the literature and they correspond to five components that are mainly used in implementing SCL in classroom teaching and learning. The five components consist of motivation, instructional strategies, teacher and student roles, distribution of power and assessment.

Secondly, a pool of items for each scale was produced. The item pool of statements was developed in a way that they typified each of the five scales. Both the content and face validity of the inventory was established through a long process. First of all, the items for each component were analyzed by a group of experts resulted in certain amendments regarding some of the items. Then, the second group of experts consisted of 10 educators examined the items making final modifications on the items. After that, the scales were piloted with 10 high school teachers and were revised based on their feedback. Based on experts', and high school teachers' opinions and suggestions, some of the items produced were reworded and some of them were omitted. The final version of the instrument consisted of five scales that

correspond to five components of the implementation of SCL in classroom teaching and learning. The motivation scale consisted of 12 items, instructional strategies 18 items, teachers' and students' roles 18 items, distribution of power 8 items, and finally assessment scale 16 items. The items in the scale were presented on a 6-point Likert scale ranging from 0 to 5 where (0) refers to never, (1) almost never, (2) seldom, (3) frequently, (4) almost always and (5) always. 56 of the items were in the affirmative and the remaining 14 were in the negative.

In order to determine the items that fall under each factor on each scale of the instrument, the internal consistency of each scale, Cronbach's alpha (coefficient of reliability was taken as 0.70 or over) and item-total correlation (correlation coefficient over 30 was adopted) (DeVellis, 2003) were examined.

The construct validity of the scales was examined through the use of an exploratory factor analysis using principal component with varimax rotation. Factor analysis was performed in four stages that included using Kaiser-Meyer-Olkin (KMO) coefficient and Barlett sphericity test, designating factors, rotating factors and naming factors.

Kaiser-Meyer-Olkin (KMO) coefficient and Bartlett sphericity (DeVellis, 2003) tests were used in order to investigate whether the data collected were suitable for factor analysis or not. KMO test was used to test whether the partial correlation rate was low and the distribution was at the adequate level for factor analysis. When KMO coefficient approaches 1, this means that data are suitable for analysis. If it is 1, this means that there is a perfect compatibility. The Bartlett sphericity test was also employed to check if data were derived from multivariable normal distribution.

Significance in chi-square test statistics found in this test is an indicator that the data are derived from multivariate normal distribution. Therefore, if the value of KMO is greater than 0.60 and the result of Bartlett sphericity is found to be significant, then it means that the data is appropriate for factor analysis.

Factor analysis study (Kline, 1994) also included a component analysis technique. Exploratory principal analysis was used to identify the factorial structure of the scales. The aim of the exploratory factor analysis was to explore the main factors (dimensions) in an area and also identify the variables that load on the relevant factor. The criteria of factor loadings of at least 0.30 and variance explanation rate of 0.40 or over were used in factor analysis. For the factor analysis procedure, Kaiser Criteria were adopted and values with an eigenvalue of over 1.00 were included in the inventory. Then factors were rotated by using Varimax rotation. Varimax rotation was used to identify the total number of items in each factor.

In order to determine the reliability and structural validity of each scale on SCLI, the data obtained from 309 high school teachers were used. All statistical analyses were performed using SPSS version 15.0 (SPSS, Statistical Package for the Social Sciences). The results of exploratory factor analysis for each scale on the inventory are presented below.

***Motivation Scale*.** Initially, the factorability of the 12 items in motivation scale was examined. The factor analysis of the motivation scale including extraction principal component, Varimax rotation and Cronbach Alpha coefficients are displayed in Table 3.4.

Table 3.4

The results of factor analysis for the motivation scale

	Factor loads and *Item-test correlations	
Items	Factor 1	Factor 2
M1	,599 (,40)	
M4	,637 (,52)	
M5	,822 (,48)	
M13	,627 (,45)	
M19	,572 (,46)	
M30	,587 (,49)	
M14		,807 (,62)
M23		,750 (,62)
Eigen Value	2,885	1,176
Variance Explanation Rate	36,065	14,701
Cronbach Alpha coefficients	,73	,77
Total Variance Explained	,51	
Total Cronbach Alpha coefficients	,76	
KMO	,75	
Bartlet's Test	Chi-square: 464,835; df: 28; p<0.01	

Note: *Item test correlations are given in parentheses

In order to verify whether the collected data were suitable for factor analysis, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity were used. As it can be seen in Table 3.4, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was calculated as 0.75, which was above the commonly recommended value of 0.60, and Barlett's test of sphericity was found significant (X^2 (28) = 464.83, p<.01).

Factor analysis study of the instrument involved a principal component analysis technique. A two-factor solution as determined by Eigen values greater than 1 resulted from factor analysis, explaining 51% of the total variance. Then, factors were rotated by using Varimax rotation to identify the items in each factor. The results of the item analysis applied revealed that 8 of the items correlated above 0.30

with other items, suggesting reasonable factorability. The remaining 4 items were omitted as they correlated weakly; below 0.30 with other items. As Varimax rotation solution, 8 items out of 12 were rotated under 2 factors. Factor loads of the items ranged from 0.57 to 0.81. Factor 1 included 6 items related to "creating motivating conditions" and factor 2 included 2 items related to "motivating students through involving students in decision making".

Cronbach Alpha coefficients were also calculated. The results of the inter-item reliability analysis of the inventory revealed 0.76 Alpha coefficients for the motivation scale. The Cronbach Alpha internal consistency values for 2 sub scales were 0.73 and 0.77.

Instructional Strategies Scale. Then, the factorability of the 18 items in the instructional strategies scale was examined. The factor analysis of the scale including extraction principal component, Varimax rotation and Cronbach Alpha coefficients are displayed in Table 3.5.

Table 3.5

The results of factor analysis for the instructional strategies scale

	Factor Loads and *Item-test correlations		
Items	Factor 1	Factor 2	Factor 3
IS24	,632 (,53)		
IS25	,712 (,54)		
IS26	,712 (,55)		
IS27	,720 (,54)		
IS40	,601 (,47)		
IS42	,447 (,38)		
IS49	,555 (,52)		
IS3		,573 (,53)	
IS9		,774 (,56)	
IS10		,722 (,60)	
IS33			,698 (,64)
IS35			,783 (,68)
IS44			,735 (,64)
Eigen Value	3,806	1,717	1,078
Variance Explanation Rate	29,280	13,206	8,295
Cronbach Alpha coefficients	,78	,74	,80
Total Variance Explained		,51	
Total Cronbach Alpha coefficients		,78	
KMO		,81	
Bartlet's Test	Chi-square: 870,242; df: 78; p<0.01		

Note: *Item-test correlations are given in parentheses

As it is displayed in Table 3.5, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was calculated as 0.81, which was well above the commonly recommended value of 0.60, and Bartlett's test of sphericity was found significant (X^2 (78) = 870.24, p<.01).

The result of principal component analysis technique revealed a three-factor solution as determined by Eigen values greater than 1 resulted from factor analysis, explaining 51% of the total variance. The results of the item analysis applied revealed that 13 of the items correlated above 0.30 with other items, suggesting reasonable factorability. The remaining 4 items were omitted as they were correlated

weakly; below 0.30 with other items. As Varimax rotation solution, 13 items out of 17 were rotated under 3 factors. Factor loads of the items ranged from 0. 45 to 0.78. Factor 1 included 7 items related to "considering student characteristics in choosing strategies". Factor 2 included 3 items related to "independent learning strategies" and factor 3 also included 3 items related to "traditional teaching methods / techniques".

The results of the inter-item reliability analysis of the inventory revealed 0.78 Alpha coefficients for the instructional strategies scale. The Cronbach Alpha internal consistency values for the three sub scales ranged from 0.74 to 0.80.

Distribution of Power Scale. After that, the factorability of the 8 items in the distribution of power scale was examined. The factor analysis of the scale including extraction principal component, Varimax rotation and Cronbach Alpha coefficients are displayed in Table 3.6.

Table 3.6

The results of factor analysis for the distribution of power scale

	Factor loads and *Item-test correlations		
Items	Factor 1	Factor 2	Factor 3
DP29	,665 (,59)		
DP47	,617 (,56)		
DP68	,731 (,61)		
DP72	,628 (,65)		
DP63		,850 (,58)	
DP65		,841 (,57)	
DP20			,807 (,51)
DP61			,765 (,50)
Eigen Value	2,111	1,477	1,100
Variance Explanation Rate	26,382	18,468	13,754
Cronbach Alpha coefficients	,79	,73	,70
Total Variance Explained		,59	
Total Cronbach Alpha coefficients		,66	
KMO		,62	
Bartlet's Test	Chi-square: 299,488; df: 28 ; p<0.01		

Note: *Item test correlations are given in parentheses

As the table 3.6 reveals, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was calculated as 0.62, slightly above the commonly recommended value of 0.60, and Barlett's test of sphericity was found significant (X^2 (28) = 299.48, p<.01).

The result of principal component analysis technique revealed a three-factor solution as determined by Eigen values greater than 1 resulted from factor analysis, explaining 59% of the total variance. The results of the item analysis applied revealed that all 8 of the items correlated above 0.30 with other items, suggesting reasonable factorability. As Varimax rotation solution, 8 items were rotated under 3 factors. Factor loads of the items ranged from 0.66 to 0.85. Factor 1 included 4 items

related to “participatory approach”, factor 2 included 2 items related to “authoritarian approach” and factor 2 also included 3 items “guiding approach”.

The results of the inter-item reliability analysis of the inventory revealed 0.66 Alpha coefficients for the scale. The Cronbach Alpha internal consistency values for the three sub scales ranged from 0.70 to 0.79.

Teacher and Student Roles Scale. For the teacher and student roles scale, the factorability of the 18 items was examined. The factor analysis of student and teacher roles scale including extraction principal component, Varimax rotation and Cronbach Alpha coefficients are displayed in Table 3.7 below.

Table 3.7

The results of factor analysis for the teacher and student roles scale

	Factor loads and *Item-test correlations		
Items	Factor 1	Factor 2	Factor 3
R34	,589 (,47)		
R43	,746 (,55)		
R48	,628 (,48)		
R56	,741 (,48)		
R69	,581 (,44)		
R16		,558 (,38)	
R39		,788 (,59)	
R46		,767 (,52)	
R62		,806 (,59)	
R6			,685 (,38)
R8			,744 (,55)
R17			,654 (,51)
R21			,567 (,49)
Eigen Value	3,555	2,227	1,078
Variance Explanation Rate	27,346	17,132	8,296
Cronbach Alpha coefficients	,73	,73	,70
Total Variance Explained		,53	
Total Cronbach alpha coefficients		,70	
KMO		,80	
Bartlet's Test	Chi-square: 931,646; df: 78 ; p<0.01		

Note: *Item test correlations are given in parentheses

As it can be seen in Table 3.7, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was calculated as 0.80, which was above the commonly recommended value of 0.60, and Bartlett's test of sphericity was significant (X^2 (78) = 931.65, p<.01).

The result of principal component analysis technique displayed a three-factor solution as determined by Eigen values greater than 1 resulted from factor analysis, explaining 53% of the total variance. The results of the item analysis applied showed that 13 of the items correlated above 0.30 with other items, suggesting reasonable

factorability. 3 items were eliminated because they were correlated weakly; below 0.30 with other items in the scale. As Varimax rotation solution, 13 items out of 16 were rotated under 3 factors. Factor loads of the items were ranged from 0. 45 and 0.81. Factor 1 included 5 items related to "student roles", factor 2 included 4 items related to "traditional teacher roles" and factor 3 also included 4 items regarding "student-centred teacher roles".

The results of the inter-item reliability analysis of the inventory revealed 0.70 Alpha coefficients for the scale. The Cronbach Alpha internal consistency values for the three sub scales ranged from 0.70 to 0.73.

Assessment Scale. Finally, the factorability of the 16 items in the assessment scale was examined. The factor analysis of the scale including extraction principal component, Varimax rotation and Cronbach Alpha coefficients are displayed in Table 3.8.

Table 3.8

The results of factor analysis for the assessment scale

Items	Factor loads and *Item-test correlations	
	Factor 1	Factor 2
A28	,555 (,48)	
A32	,750 (,68)	
A38	,532 (,60)	
A55	,756 (,66)	
A57	,666 (,65)	
A53		,784 (,68)
A54		,723 (,66)
A67		,537 (,68)
A71		,679 (,63)
Eigen Value	3,077	1,278
Variance Explanation Rate	34,190	14,197
Cronbach Alpha coefficients	,81	,83
Total Variance Explained	,49	
Total Cronbach Alpha coefficients	,83	
KMO	,80	
Bartlet's Test	Chi-square: 537,599; df: 36 ; p<0.01	

Note: *Item test correlations are given in parentheses

As it is displayed in the table, regarding the factor analysis of the last scale which is assessment, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was calculated as 0.80, which was well above the commonly recommended value of 0.60, and Bartlett's test of sphericity was found significant (X^2 (36) = 537.59, p<.01).

The result of principal component analysis technique demonstrated a two-factor solution as determined by Eigen values greater than 1 resulted from factor analysis, explaining 49% of the total variance. The results of the item analysis applied showed that 9 of the items correlated above 0.30 with other items, suggesting reasonable factorability. 7 items were taken out because they were correlated weakly; below 0.30 with other items. As Varimax rotation solution, 9 items out of 16 were rotated

under 2 factors. Factor loads of the items ranged from 0. 53 to 0.78. Factor 1 consisted of 5 items related to "alternative assessment methods", and factor 2 consisted of 4 items related to "providing feedback".

The results of the inter-item reliability analysis of the inventory revealed 0.83 Alpha coefficients for the assessment scale. The Cronbach Alpha internal consistency values for the two sub scales were 0.81 to 0.83.

According to the results, the *motivation* and *assessment* scales had a two-factor solution whereas the *instructional strategies, distribution of power* and *teacher and student roles* had a three-factor solution (Appendix A). The total variance explained for the scales ranged from 0.49 % to 0.59 % and the Cronbach Alpha internal consistency values from 0.70 to 0.83 exceeding the minimum alpha of 0.6 (Hair et al., 2009). Based on the results of the analysis, it can be concluded that the the five scales were proven to be a valid and a reliable to be used in this study. The final version of the SCLI (Appendix B) consisted of 51 items on a 6-point Likert Scale ranging from 0 to 5 where (0) refers to never, (1) almost never, (2) seldom, (3) frequently, (4) almost always and (5) always. 42 of the items were in the affirmative and the remaining in the negative. The negative items were scored reversely in data analysis.

3.3.2 Student-Centred Learning Interview Form (SCLIF)

SCL Interview Form (SCLIF) was prepared as a semi-structured interview to complement and elaborate the results obtained from the SCLI. SCLIF consisted of open-ended questions. The questions were used in order to obtain in-depth answers

regarding teachers' use of SCL in classroom teaching and learning and also the barriers that hinder the use of SCL in general high schools.

The questions on the SCLIF (Appendix C) were prepared in parallel to items used in SCLI which are based on the five main components of SCL including motivation, instructional strategies, teacher and student roles, distribution of power and assessment. In addition to that, the SCLIF also contained questions aimed to identify the barriers that hinder the effective use of SCL in general high schools. All the questions were prepared by the researcher. The researcher made use of a list of general questions in order to make the interviewing systematic; however, she probed and explored various other sub-questions as well.

After the administration of SCLI to high school teachers, one-to-one interviews were conducted with teachers that formed the qualitative component of the study. In order to ensure the reliability and validity of the results obtained from SCLIF, the researcher addressed some practical standards as proposed by Miles and Huberman (1994). There has been a long debate regarding the suitability of the two concepts; reliability and validity for qualitative studies (Bryman, 2001; Cohen et al., 2007; Merriam, 1998; Miles and Huberman, 1994; Patton, 2002; Silverman, 1997). As the literature contains alternative concepts to better suit the nature of qualitative studies, the researcher decided to use traditional concepts together with their alternatives (Miles and Huberman, 1994) not to cause any misunderstandings. Below are measures taken by the researcher:

External Validity/Transferability/Fittingness. After the preparation of the questions for each component of SCL, expert opinion was received in order to ensure the validity of the SCLIF. Initially, 25 general questions; 4 for the motivation, 4 for the instructional strategies, 4 for the teacher and student roles, 5 for distribution of power, 5 for the assessment component, and 3 for identifying the barriers were prepared. The questions in the form were modified based on the feedback received from the experts.

After getting expert opinion, pilot interviews (Silverman, 1993) were employed with 5 high school teachers. Pilot interviews enabled the researcher to practice her questioning skills as well as to find out whether the questions asked were capable of gathering the kind of data the researcher intended to collect. After the pilot interviews, certain amendments were made to the questions.

Internal Validity/Credibility/Authenticity. In order to maximise internal validity/ credibility/authenticity, the researcher employed certain measures that included 'empathy', 'unconditional positive regard' and 'congruence' (Cooper and McIntyre, 1996) during the administration of the interviews. With respect to the 'empathy', the researcher showed the teachers that she could emphathise with their opinions and that she understood and accepted their expressed opinions. Regarding 'unconditional positive regard', the researcher tried to make teachers feel comfortable and unthreatened during the interviews. All the interviews were employed at schools. The meeting rooms were allocated for the interviews and the entrance to these rooms were restricted during the interviews. The researcher also showed interest in their opinions through using verbal and nonverbal cues. For 'congruence' the researcher

asked for clarifications of inconsistencies in teachers' opinions in order to motivate them to give honest answers. The researcher also used 'repeat probing' (Cooper and McIntyre, 1996) and invited teachers to clarify and elaborate their opinions when they failed to do so.

Objectivity/Confirmability. Researcher bias is one of the major threats that affect the objectivity/confirmability of the data collected. The main sources of bias that may contaminate the results are 'personal bias' and the other is 'the need for consistency' (Miles and Huberman, 1994). In order to increase the objectivity/confirmability, the reseracher tried not to manipulate the teachers during the interviews. The researcher tried to guide the teachers when necessary and also be distant and objective without trying to impose her ideas on the teachers. The researcher also summarized the main issues raised during the interviews asking for confirmation from the teachers.

The researcher also kept a detailed record of the methods and procedures of the study to be followed as an 'audit trail' (Bryman, 2004; Cohen et al., 2007; Merriam, 1998; Miles and Huberman, 1994). The audit trail enabled the researcher to address the issue of confirmability of results with respect to the process and the product of the study. Therefore, the researcher recorded the whole process including how data were collected, categories were formed and conclusions were drawn. Then the researcher asked an expert to comment on the stages of the process ensuring whether the results were consistent with the data collected. The results were found to be consistent with the data collected in the study.

Reliability/Dependability/Auditability. With respect to increasing the reliability/ dependability/ auditability of the study, 'getting feedback from the informants' (Miles and Huberman, 1994) was carried out. As the findings began to take shape, the researcher checked it out with the data gathered from other participants usually called 'confidants' (Miles and Huberman, 1994). As advised by Cohen et al. (2007), the researcher asked the same questions in the same order to all participants so as to increase the comparability of the responses obtained from the participants. The obtained findings showed meaningful parallelism across informants.

'Choosing a sample which was a good representative of the entire population' (Miles and Huberman, 1994) was used. The researcher used purposive sampling method in order to ensure that the sample contained full-time teachers teaching various subjects with various teaching experience and pedagogical knowledge across all general high schools. The researcher did not involve any outliers such as part time teachers and teachers teaching in middle schools in the study.

'Coding checks' (Cohen et al., 2007; Miles and Huberman, 1994) were also made in order to ensure whether there was adequate agreement between two different coders in terms of codes and themes generated from the same set of data. Therefore, after coding the data obtained from the interviews, the transcriptions were given to an outsider who was an expert in qualitative data analysis to be coded seperately. Finally the codes were compared. The researcher also made use of the reliability formula as proposed by Miles and Huberman (1994, p.64) to calculate the intercoder agreement between coders for each component investigated. The formula is given below:

$$\text{Reliability} = \frac{\text{number of agreements}}{\text{total number of agreements + disagreements}}$$

The intercoder agreement was found to be in the 90% range for each component of SCL and also for the barriers that hinder the effective use of SCL in high schools in North Cyprus.

3.4 Ethical Considerations

Ethical issues that include privacy, confidentiality and anonymity were given utmost importance throughout the study. Before gathering data, consent was obtained from all the participants who agreed to take part in the study. Moreover, written consent (Appendix E) was taken from the teachers who accepted to be interviewed. The participants were also informed that taking part in the study was voluntary and that they could withdraw at any time.

All participants were informed of the purpose of the study and the data collection tools namely, the SCLI and the SCLIF. All participants were assured that the information they provided would be kept confidential and would only be used in the present study.

The data collection tools that consisted of SCLI and the SCLIF did not require teachers to reveal their names or other personal identifiers. The participants completed the SCLI anonymously. The SCLI did not contain any identifying elements of individual teachers participated in the study. Thus, it was not possible to determine which teachers participated in the study and how they responded. With respect to the interviews with teachers, all the interviews were recorded. When

reporting data, each teacher was assigned a pseudonym so that no information would be given regarding which teacher provided which data. The study protected the anonymity of the teachers throughout the research and it did not list, use in any data analysis or report in any form the names and the identities of the teachers.

3.5 Data Collection Procedures

The data for the current study were gathered from teachers teaching in 11 general high schools through the administration of SCLI and the SCLIF during the spring semester (between February 1 and May 30) of 2010-2011 academic year. Before the administration of the SCLI and SCLIF, necessary permission was granted from the Ministry of National Education (Appendix D).

For the administration of SCLI, the researcher aimed to reach all high school teachers. Therefore, enough number of copies of the SCLI were printed and distributed to all teachers teaching in 11 different schools. Before the administration of the SCLI, the teachers were informed about the purpose of the study by the researcher. The volunteered teachers were invited to the staff room and were given the necessary information regarding the aim of the SCLI. The teachers were also told that their participation in the study was of crucial importance in examining the extent to which SCL is implemented in classroom teaching and learning.

Out of 430 high school teachers, 370 of them volunteered to participate in the administration of SCLI. The inventory was administered in staff rooms of schools and its completion took about 30 to 40 minutes. After the collection of data, 61 of the inventories returned were disregarded because of missing data. In total, 309 of the

inventories were found to be valid to be used in the study. Due to small size of the population, it was decided to do the piloting and the actual study on the same data.

After the administration of the SCLI, semi-structured interviews were employed with teachers teaching in general high schools. The SCLIF which had been developed by the researcher was used in the interviews. In total, 33 teachers, approximately three teachers from each general high school, were interviewed. Before the administration of the interviews, all teachers were informed about the purpose of the study and their consent was sought. All of them were asked to sign a consent form (Appendix E). The interviews took approximately 40 minutes and all the interviews were tape-recorded. The interviews took place in an office allocated for this purpose. All the participants were informed about the presence of the recording machine.

3.6 Data Analysis

The data analysis occurred both in the quantitative (descriptive and inferential numeric analysis) and the qualitative (description and thematic analysis) designs. Since sequential explanatory design (Creswell, 2003) was used in this study both quantitative and qualitative data were collected and analysed separately. The findings obtained were triangulated at the end of the study.

Quantitative data that were collected via the use of SCLI were analysed by using statistical tests on the SPSS program. Before the analysis, all the forms were checked for the missing data. Out of 370 returned inventories, 309 of them were found to be valid to be used in the study. Therefore, in total 309 inventories were used for data analysis. Before transferring data to SPSS, firstly all the inventories were numbered from 1 to 309. The SCLI consisted of 51 items on 6-point Likert scale in which 42 of the items were in the affirmative and the remaining in the negative. The items in the

affirmative were coded as Always – 5, Almost always – 4, Frequently – 3, Seldom - 2, Almost never – 1 and never – 0 and the negative items were coded reversely before the data analysis. Finally, all the data were transferred to SPSS 15.0 version to be analyzed. In order to be able to find out teachers' perceived use of SCL in general high schools, descriptive statistics were applied and means and standard deviations for each scale were calculated. Regarding how high school teachers' implementation of SCL varies with respect to certain independent variables including gender, subject area, teaching experience and pedagogical knowledge, t-test and one-way ANOVA tests were administered. T-test was used to find out whether teachers' use of SCL varies with respect to gender and pedagogical knowledge. Regarding the subject area and teaching experience, one-way ANOVA was administered.

The data gathered from the SCLIF, on the other hand, were analysed through the use of content analysis. The qualitative data analysis (Miles and Huberman, 1994) consisted of three stages: 'data reduction', 'data display' and 'conclusion drawing/verification'. It was decided to do manual coding as this would enable the researcher to take note of both implicit and explicit messages giving her more control and ownership over analysis process.

The analysis started with the process of transcribing the recordings. All the recordings were fully transcribed by the researcher. After transcribing all the interviews, the researcher started reading and coding the transcriptions. This was done for all the informants participated in the study. Then, the researcher prepared a checklist matrix (Appendix F) based on the research questions which had been prepared in line with the research questions. As Miles and Huberman (1994, p. 109)

stated "…a checklist format itself does a good deal to make data collection more systematic, enable verification, encourage comparability, and permit simple quantification where you [the researcher] think it is appropriate".

Initially, apriori codes, adopted from the SCLI representing the main components of SCL, were used to form a basic outline for preliminary categorisation. The apriori codes for the motivation component include "learning environment", "intrinsic motivators", "decision making process", "choice and control" and "motivation level". The apriori codes for the instructional strategies component consist of "authentic tasks", "individual differences", "student-centred strategies", "groupwork and pairwork", "lecturing", "teaching methods" and "individual work". Distribution of power component consists of "participatory approach", "authoritarian approach" and "guiding approach" as apriori codes. The codes for the teacher and student roles are "self-learning", "cooperation", "autonomy", "constructing knowledge", "cooperative tasks", "teacher as an authority", "knowledge transmission", "responsibility of learning", "teacher as a facilitator" and "teacher as a guide". Finally the apriori codes for the assessment component include "portfolios" "self-assessment", "peer assessment", "formative assessment", immediate feedback" and "constructive feedback". In addition to apriori codes, empirical codes were also generated inductively. Following coding, categories were developed for each component of the SCL. Pertaining to the data gathered to explore the barriers that hinder the use of SCL in high schools, empirical codes were generated.

During the analysis process, the researcher entered all the codes, both apriori and empirical, together with quotes in matrices and she did this for each informant being

interviewed. Hence, the cell entries of the matrices contained codes and also direct quotes from the transcripts. After that, the researcher analysed all the matrices in order to form a general idea of the implementation of each component of SCL and also the barriers that hinder the use of SCL in classroom teaching and learning for each informant. The analysis tactic used here was 'noting patterns or themes' (Miles and Huberman, 1994). Besides this tactic, the researcher also made use of the following tactics during drawing and verifying conclusions: noting patterns/themes, clustering/categorizing, counting, making contrast/ comparisons and partitioning variables (Miles and Huberman, 1994). The researcher also used direct quotations from the transcripts in presenting the findings drawn from the data.

Chapter 4

RESULTS AND DISCUSSION

In this chapter, the results emerged from data gathered via the use of Student-Centred Learning Inventory (SCLI) and Student-Centred Learning Interview Form (SCLIF) and their interpretations are presented. The results and the interpretations are presented in order of the research questions.

4.1 Teachers' Use of SCL in Classroom Teaching and Learning

In the first research question, it was aimed to explore the extent to which SCL is implemented in classroom teaching and learning based on teachers' perceptions and opinions with respect to the main components of the SCL, namely motivation, instructional strategies, distribution of power, teacher and student roles and assessment. The data collected via the use of SCLI and SCLIF were analysed to answer the first question. Teachers' perceptions of their use of SCL in classroom teaching and learning were assessed from the data gathered through the use of SCLI and teachers' opinions were further explored from in-depth data gathered through SCLIF.

Regarding the analysis of the data collected from the SCLI, the frequency level of each component and its factors that were reported to be used in the SCLI were examined. This was achieved through the calculation of descriptive statistics that included the means and standard deviations. The data obtained from SCLIF, on the

other hand, were analysed through content analysis in which emerging categories were identified. The results obtained from the analysis of the data collected through SCLI and SCLIF were discussed and triangulated for each component of SCL.

4.1.1 Motivation

In order to explore the extent to which SCL is used in classrooms, firstly the use of the motivation component of SCL by the teachers was examined. For this purpose, means and standard deviations regarding teachers' perceptions of their use of the motivation component including its two factors: "creating motivating conditions" and "motivating students through involving them in decision making" were calculated. In addition to that, the teachers' opinions of their use of the motivation component gathered through in-depth interviews were analysed and evaluated. The analysis of the data as well as the findings obtained is discussed below. The results obtained from the data analysis regarding motivation component are presented in Table 4.1.

Table 4.1

Statistical values regarding the motivation component and its factors

Motivation	**Min**	**Max**	**M**	**95% CI**	**SD**	**Frequency**
Creating motivating conditions	11.00	30.00	23.19	[22.76, 23.61]	3.79	Moderately high
Motivating students through involving them in decision making	.00	10.00	6.15	[5.90, 6.38]	2.15	Heterogeneous
Motivation Total	16.00	40.00	29.33	[28.77, 29.89]	5.00	Moderately high

As it is seen in Table 4.1, the mean of the *motivation* component was calculated as 29.33 and the standard deviation 5.00. The minimum and the maximum scores obtained were 16.00 and 40.00. Considering theses scores, the mean is at a

moderately high level. The standard deviation of the scale can be considered low for the obtained range of scores. The results indicated the homogeneity of the sample implementing *motivation* component of the SCL at a moderately high level. For its factor of *creating motivating conditions,* the mean was found 23.19 and the standard deviation 3.79. Considering the minimum (11.00) and the maximum (30.00) scores, the mean can be considered as rather high. Moreover, the standard deviation was found to be rather low for the range of scores obtained. These findings demonstrated low variability among teachers in their implementation of *creating motivating conditions*. This indicated the homogeneity of the sample suggesting strong agreement among teachers. Considering these results, it can be said that teachers create motivating conditions at a moderately high level. With respect to the factor of *motivating students through involving them in decision making process*, the mean was calculated as 6.15 and the standard deviation 2.15. Considering the minimum (.00) and the maximum (10.00) scores, it can be said that the mean was at a moderate level. Similarly, the standard deviation is rather high for the range of scores obtained. This showed the heterogeneity of the sample revealing variability among teachers in motivating students through involving them in decision making process.

According to the data gathered from SCLI, the first component of SCL, *motivation,* received a moderately high level of usage. The results indicated the homogeneity of the teachers with low variability. Similar to the *motivation* component, c*reating motivating conditions* factor was reported to be used at a moderately high level. This factor consisted of items such as considering students' needs, abilities and interests and also motivation level in designing classroom activities, valuing all students' opinions in class, creating supportive, friendly and relaxed learning environment for

students, encouraging students to motivate themselves in the teaching and learning process and getting to know students at a personal level. The results indicated low variability with strong agreement among teachers. On the other hand, the results for the factor of *motivating students through involving them in decision making process* indicated the heterogeneity of the teachers showing variability regarding the frequency of its use. This factor included the items such as involving students in decision making process and also providing students with choices.

In addition to teachers' perceptions, their opinions on the use of the motivation component were gathered and analysed through content analysis. With respect to the content analysis of the motivation component; "creating friendly and relaxing learning atmosphere in class", "using reward and punishment", "making use of exams", "using various strategies" categories emerged from the data. The following motivational strategies, identified as categories, were reported to be used by the teachers in classroom teaching and learning:

Creating friendly and relaxing learning atmosphere in class. Concerning the motivation of students, most teachers stated that there should be a friendly and relaxing learning environment in class in which students are free to express their opinions. Majority of the teachers (28) remarked that they create supporting, friendly and relaxing environments for their students so that their students do not hesitate to express their opinions and feelings in class. Some of the teachers remarked that they usually approach their students as a friend devoting time to talk about students' hobbies and interests, tell jokes and chat about daily events in class. Derin, a language teacher, stated how she motivates her students:

> I don't like very strict classrooms; if I teach for 10 minutes then I usually give a break. We either talk about the topic we are covering or tell jokes. This makes them relax. I believe that we should create environments for a friendly chat. There should be discipline in class but students shouldn't be afraid of or be shy to express their opinions.

Using reward and punishment. There is a general tendency among teachers to use "reward" and "punishment" in order to motivate their students in the teaching and learning process. This is usually in the form of assigning + or - grade to students. Almost all teachers stressed that they use "reward" and "punishment" in order to motivate students to do homework, come to class prepared and behave well in class. Majority of the teachers stated that they prefer to use 'rewards' rather than 'punishment' as they believe that rewards better serve the aim of motivating students. Most commonly used 'rewards' include assigning extra grades and using verbal praises such as 'very good' and 'well done'. The data obtained from the interviews also indicated that although most teachers considered "reward" and "punishment" to be of particular help some teachers also stated that this may also be ineffective for some students.

Making use of exams. Majority of the teachers (25) remarked that exams are a motivating factor for the students. As teachers argued when students are told that a topic they are covering in class would be asked in the exams they pay more attention to it. Therefore, most teachers use exams as a tool to increase the motivation level of their students. Nazlı, a philosophy teacher, stated how she tried to handle the issue of motivation in her lesson:

> It's very difficult to trigger their motivation. The only way is to use bribery. I use exams. I said that I will ask that topic in the exam and it works. If there is no grade in return, nothing works.

Using various strategies. The teachers also stressed that they use various strategies to motivate their students. The most commonly mentioned strategies include personalisation, giving examples from daily life, asking questions, using materials and labs and relating topics to daily life. The data gathered from the interviews revealed that teachers make use of different strategies to motivate their students in class. Su, teaching Turkish language and literature, addressed the issue of motivation by giving the following example:

> I know my students at a personal level; I know their interests and likes. For example, I know that most of them like watching action films so I make them talk about recent films they watched. This makes them gain self-confidence increasing their motivation.

Regarding involving students in decision making, majority of teachers remarked that they make all decisions in class not considering students opinions. Only few teachers stated that they sometimes provide students with options in the teaching and learning process.

With respect to the data gathered, the first component of SCL, *motivation* was reported to be used at a moderately high level by the teachers. *Creating motivating conditions,* one of the factors of motivation, also received a moderately high level of usage. These results indicated that teachers consider students' needs, abilities and interests as well as the motivation level in designing classroom activities, they create supportive, friendly and relaxed learning environment for students, they value their students' opinions in class, they get to know their students at a personal level and they stimulate intrinsic motivation in class. The data gathered from the interviews to a greater extent support the findings as almost all teachers stated that they create supporting, friendly and relaxing teaching and learning environment in class

believing that students should feel free to express their thoughts and feelings in class. The data also revealed that teachers try to stimulate intrinsic motivation through the use of various strategies that include personalisation, giving examples from daily life, asking questions, using materials and labs and relating topics to daily life.

On the other hand, the data obtained also revealed that besides using internal motivators teachers also rely heavily on external motivators in the teaching and learning process. Almost all teachers (30) remarked that they mainly use 'reward' and 'punishment' which mainly refers to assigning + or - grade to students. 'Reward' and 'punishment' are used to encourage students to do homework regularly, participate in class activities and obey classroom rules. As it is stated in the literature (Blumberg, 2009; Brandes and Ginnis; 1986; Philips, 2005; Santrock, 2001; Ryan and Deci, 2000; Weimer, 2002), SCL highlights the importance of intrinsic motivation and does not rely on extrinsic motivators in the teaching and learning process. Extrinsic motivators may be effective in making students do the tasks; however, students do the tasks just for the sake of getting extra points and not for learning (Weimer, 2002). As Doyle (2008) stresses, the use of rewards inhibits student learning making students' focus on reward rather than their learning. Weimer (2002) further states that extrinsic motivators only seem to work just for a short period of time and they are far from creating intellectually mature, responsible and motivated students.

The results also indicated that teachers use exams as a tool to make students be more involved in class activities. This finding is in line with literature as Weimer (2002) remarks, today most teachers tend to rely on extrinsic motivators to motivate their

students and get them involved in class activities. Most commonly used extrinsic motivators include regular quizzes, extra credit and bonus points. The literature also demonstrates that high stakes tests lead to less intrinsic motivation to learn and lower level of critical thinking preventing students to become lifelong learners (Blumberg, 2009; Brandes and Ginnis; 1986; Philips, 2005; Santrock, 2001; Ryan and Deci, 2000; Weimer, 2002).

With respect to the factor of *motivating students through involving them in decision making process,* the data obtained from SCLI revealed that the teachers are heterogeneous in nature, meaning that there is variability among them in motivating their students through involving them in the decision making process. Based on this finding, it can be said that some teachers involve students in the decision making process and also provide their students with choices whereas some do not. The data obtained from the interviews, on other hand, revealed that only few teachers (5) involve students in decision making process. The teachers stated that they rarely provide students with choices in some classroom activities, deadlines and type of homework to be assigned. The current research indicates that students who can self-regulate their own learning when they are given choice and opportunity to control some aspects of their learning become more motivated students (Blumberg, 2009; Brandes and Ginnis; 1986; Philips, 2005; Santrock, 2001; Ryan and Deci, 2000; Weimer, 2002). However, the results of this study demonstrated that students are not given this opportunity in most classrooms in high schools.

In light of the data gathered, it can be said that the motivation component of the SCL is not implemented at a sufficient level in classroom teaching and learning in high

schools. The findings clearly indicated that although teachers use some intrinsic motivators, extrinsic motivators, mainly the use of "reward" and "punishment" are very common in the teaching and learning process. SCL highlights the importance of intrinsic motivation and does not make use of extrinsic motivators in the teaching and learning process distracting students' attention from learning and making them focus on the reward. The findings also revealed that most teachers use exams as a tool to increase the motivation level of their students which lead to less intrinsic motivation to learn and lower level of critical thinking preventing students to become autonomous learners. Moreover, regarding distribution of power, the findings showed that only few teachers provide students with choice and control in their learning which is an important factor in increasing the motivation of students.

4.1.2 Instructional strategies

In order to find out the extent to which the instructional component of SCL is implemented in high schools, firstly the means and standard deviations for the instructional strategies component that consisted of three factors: "considering student characteristics in choosing strategies", "independent learning strategies" and "traditional teaching methods/techniques" were calculated. In addition to that, teachers' opinions of their use of the instructional strategies component gathered through in-depth interviews were analysed and evaluated. The analysis of the data as well as the findings obtained is discussed below. The results obtained from the data analysis regarding instructional strategies component are presented in Table 4.2.

Table 4.2

Statistical values regarding the instructional strategies component and its factors

Instructional strategies	**Min**	**Max**	**M**	**95% CI**	**SD**	**Frequency**
Considering student characteristics in choosing strategies	11.00	35.00	25.22	[24.69, 25.76]	4.73	High
Independent learning strategies	2.00	15.00	10.87	[10.59, 11.15]	2.49	High
Traditional teaching methods/ techniques	.00	15.00	7.63	[7.30, 7.96]	2.96	Heterogeneous
Instructional strategies Total	22.00	62.00	43.73	[42.93, 44.53]	7.18	Moderately high

As it is displayed in Table 4.2, regarding the *instructional strategies*, the mean was calculated as 43.73 and the standard deviation was found 7.18. The minimum score obtained from the component was 22 and the maximum was 62. Considering these scores, the mean obtained for the scale is at a moderately high level. The standard deviation for the scale can be considered rather moderate for the obtained range of scores. The results revealed the homogeneity of the sample implementing student-centred instructional strategies at a moderately high level.

The mean for the factor of *considering student characteristics in choosing strategies* was calculated as 25.22 and the standard deviation 4.73. Considering the minimum (11.00) and the maximum (35.00) scores obtained, the calculated mean was found to be at a high level. The standard deviation was considered as rather low for the range of scores obtained. The findings demonstrated low variability regarding considering student characteristics in choosing strategies. This shows the homogeneity of the sample. Considering these findings, it can be concluded that teachers consider student characteristics in choosing strategies at a high level by the teachers.

With respect to the factor of *independent learning strategies,* the mean was found as 10.87 and the standard deviation 2.49. Based on the minimum (2.00) and the maximum (35.00) scores, it can be said that the calculated mean is at a high level. Similarly, the standard deviation can be considered as rather low for the range of scores obtained. The findings demonstrated low variability regarding the use of independent *learning strategies*. This indicated the homogeneity of the sample. Based on these findings, it can be said that independent learning strategies are being used by the teachers at a high level.

The mean of the last factor *traditional teaching methods/techniques* was calculated as 7.63 and the standard deviation 2.96. Considering the minimum (.00) and the maximum (15.00) scores obtained for the scale, it can be concluded that the obtained mean was at a moderate level. Based on the range of scores, the standard deviation can also be considered as rather low. The results revealed a variability regarding the implementation of *traditional teaching methods/techniques* by high school teachers. This showed the heterogeneity of the sample. Based on the obtained findings, it can be concluded that the teachers have different perceptions regarding the use of traditional teaching methods/techniques. This means that some teachers perceive themselves as using these methods/techniques whereas some do not.

Similar to the motivation component, the *instructional strategies* component of the SCL was also reported to be used at a moderately high level. The results revealed the homogeneity of the teachers implementing student-centred instructional strategies at a moderately high level. The two factors, c*onsidering student characteristics in choosing strategies* and *independent learning strategies* received a high level of

usage. *Considering student characteristics in choosing strategies* factor includes items related to using authentic tasks and problems, considering student prior knowledge, needs and abilities in choosing strategies and using student-centred teaching methods. *Independent learning strategies* factor contains items about helping students relate new learning to their prior experiences, giving students opportunity to learn at their own pace and encouraging students to be autonomous learners who are responsible for their own learning. Unlike these two factors, the reported frequency level for the factor of *traditional teaching methods/techniques* was moderate. The obtained results revealed a variability concerning the implementation of *traditional teaching methods/techniques* by high school teachers. Traditional teaching methods/techniques factor includes the use of the same teaching method, lecturing and also encouraging individual learning rather than team work.

In addition to teachers' perceptions, their opinions on the use of the instructional strategies component were gathered and analysed through content analysis. The categories emerged are the "use of traditional teaching and learning methods/techniques" and "use of student-centred teaching and learning methods/techniques". The analysis of the data as well as the findings obtained, are discussed below.

Use of traditional teaching and learning methods/techniques. Traditional teaching methods and techniques were reported to be used extensively in all subjects. As teachers stated, they mainly use lectures, question and answer, giving examples and whole class discussion in the teaching and learning process. Almost all teachers (31) remarked that they rely on lectures as the most appropriate teaching method to be

used in presenting subject matter to their students. An English language teacher, Berk, talked about the kind of methods and techniques he usually uses in a typical 40-minute lesson:

> At the beginning of the lesson, I definitely revise the previous topic. I write the rules on the board. Then if the topic is suitable, because sometimes it's not, I ask some warm-up questions about the topic. Then I lecture and finally I finish by asking some comprehension questions.

Most teachers (29) also stated that they prefer students to work individually rather than working as a team in groups in class activities. Homework, on the other hand, is assigned regularly to individual students with the aim of reinforcing previously covered topics in class. Most teachers stated that they give students daily homework trying not to give too much at a time as most students tend not to do homework.

Use of student-centred teaching and learning methods/techniques. Student-centred methods are not preferred as they are considered as very time-consuming and difficult to be done in class. Only few teachers (6) mentioned about using discovery and cooperative learning methods highlighting the fact that they rarely use them in their lessons. As Can, a physics teacher, said:

> The teachers should transfer the necessary knowledge to students. You can't just expect students to find things out for themselves. Making use of discovery learning is difficult and time consuming. The teacher should present the main topic first and then ask some questions to students.

There was absolute unanimity among teachers' opinions that student-centred methods are time consuming and difficult to be used in the classroom. Moreover, teachers do not allocate time for pair and group work activities because of time

constraints. Significant number of teachers also remarked that they do not prefer to use student-centred teaching methods because they are not very effective in preparing students to nationwide exams which consist of multiple choice questions. Teachers stated that they needed to prepare their students to exams and thus they do not have time for student-centred activities. There are also term projects which are given only at the end of the semester. However, as stated by some teachers, group projects are not very effective as not all students contribute equally. Cansu, a history teacher, expressed her ideas on the issue accordingly:

> Group projects are problematic, whenever I put students in groups and assign them a task to be done outside the class, unfortunately only one or two of them do it…others just do nothing. So I try to give individual projects so that they have to do research to learn the topic.

The findings obtained from the inventory revealed that *the instructional strategies* component was used at a moderately high level. The factors of *considering student characteristics in choosing strategies* and *independent learning strategies* received a high level of usage by the teachers. Considering student characteristics in choosing strategies factor includes the items related to "using authentic tasks and problems", "considering student prior knowledge, needs and abilities in choosing strategies", "using student-centred teaching methods" and "encouraging student interaction with each other through designing group work activities". Similarly, teachers perceive themselves as encouraging students' use of independent learning strategies at a high level. The independent learning strategies factor contains items about "helping students relate new learning to their prior experiences", "giving students opportunity to learn at their own pace" and "encouraging students to be autonomous learners who are responsible for their own learning". These findings revealed that teachers

perceive themselves as implementing student-centred instructional strategies at a high level.

The findings for the instructional strategies component revealed that teachers perceive themselves as implementing student-centred instructional strategies at a high level. This finding contradicts with previous research as the literature provides evidence that lecture has been the dominant method of instruction (Blumberg, 2009; Brandes and Ginnis, 1986; Ellington, 1996; Hardman et al., 2008; Hockings, 2009; Lea et al., 2003; McCombs and Miller, 2007; McGrath, 2008; Sablonniere et al., 2009; Saito et al., 2008; Schweisfurth, 2011; Stes et al. 2007; Weimer, 2002). The results obtained from in-depth interviews also contradict with these findings. Although the student-centred instructional strategies were reported to be used at a moderately high level, the interviews with teachers demonstrated that traditional teacher-centred methods/techniques are used extensively in classroom practices in high schools. Lectures, question and answer, individual work, whole class discussion and homework were found to be the most popular strategies used by the teachers. In the interviews, the teachers remarked that they use lectures as the main method of instruction. Only few teachers stated that they use student-centred teaching and learning methods in their classrooms. Student-centred methods/techniques are not preferred to be used as they are considered as time consuming and difficult to be used in classroom practices.

With respect to the use of the *traditional teaching methods/techniques* factor, the results obtained from the inventory demonstrated that the frequency level of the use of traditional methods/techniques shows differences from teacher to teacher. The

traditional teaching methods/techniques factor includes “the use of the same teaching method, lecturing and also encouraging individual learning rather than team work”. According to the in-depth data obtained from the interviews, almost all teachers stated that they use traditional teaching methods/techniques in the teaching and learning process. This result is consistent with studies conducted both in developing and developed countries indicating that traditional methods / techniques still dominate classroom teaching and learning (Chiu and Whitebread, 2011; Eberly et al., 2001; Hardman et al., 2008; Hoyt and Perera, 2000; Lammers and Murphy, 2002; Liu et al., 2005; Mohammed and Harlech-Jones, 2008; Mtika and Gates, 2010; Murphy, 2006; Mustafa and Cullingford, 2008; Nunn, 1996; O’Sullivan, 2004; Saito et al., 2008; Schweisfurth, 2011).

Regarding the use of instructional strategies, there were contradictory results. In-depth data demonstrated that student-centred teaching methods and techniques are not implemented in classroom teaching and learning for some reasons. One of the reasons was that student-centred methods and techniques were considered to be time consuming and not very effective in preparing students to exams. As reported by the teachers, lecturing is the most widely used teaching method in high schools. Significant number of teachers stated that they use lecturing as the main method of instruction. The data gathered from the in-depth interviews indicated that traditional methods and techniques that include lectures, question and answer and individual work are being used extensively in classroom practices. However, SCL does not rely on only one teaching or learning method emphasizing a variety of different methods and techniques. The most commonly used methods and techniques in SCL are problem-based learning, project-based learning, task-based learning, discovery

learning, open-ended problems, role plays, field work and case method. However, the in-depth data indicated that only very few teachers use only few of these methods and techniques in their classrooms.

4.1.3 Distribution of power

In order to explore the extent to which teachers perceive themselves as using the distribution of power component of SCL including its factors: "participatory approach", "authoritarian approach" and "guiding approach", firstly the means and standard deviations were calculated. In addition to that, in-depth data gathered on teachers' opinions on their use of the distribution of power component were analysed through content analysis. The analysis of the data as well as the findings obtained is discussed below. The results of the data analysis regarding distribution of power component are given in Table 4.3.

Table 4.3

Statistical values regarding the distribution of power component and its factors

Distribution of power	**Min**	**Max**	**M**	**95% CI**	**SD**	**Frequency**
Participatory approach	.00	20.00	9.79	[9.37, 10.21]	3.76	Heterogeneous
Authoritarian approach	.00	10.00	4.40	[4.12, 4.68]	2.51	Heterogeneous
Guiding approach	1.00	10.00	7.01	[6.83, 7.20]	1.66	High
Distribution of power Total	5.00	38.00	21.20	[20.62, 21.78]	5.20	Moderate

As can be seen in Table 4.3, the mean of the *distribution of power* component was calculated as 21.20 and the standard deviation was found 5.20. The minimum and maximum scores that were obtained from the scale were 5.00 and 38.00. Considering these scores, the mean obtained for the scale is not at a high level. However, the standard deviation for the scale can be considered low for the obtained range of

scores. The results revealed the homogeneity of the sample distributing power at a moderate level.

Regarding the factor of *participatory approach,* the mean was calculated as 9.79 and the standard deviation 3.76. Based on the minimum and maximum scores which were .00 and 20.00, the mean can be considered as moderately low. Similarly, the standard deviation was found to be rather high for the range of scores obtained. This showed the heterogeneity of the teachers in the sample. The findings demonstrated variability related to the use of *participatory approach* in classroom teaching and learning.

With respect to the *authoritarian approach* factor, the mean was calculated as 4.39 and standard deviation 2.50. The minimum (.00) and the maximum (10.00) scores that can be obtained from the subscale revealed that the mean is not that high. Moreover, the standard deviation calculated is considered as high for the obtained range of scores. These results revealed high variability in the implementation of *authoritarian approach* by the teachers. In other words, the findings demonstrated heterogeneity regarding the characteristics of the sample.

For the final factor *guiding approach*, the mean was 7.01 and the standard deviation was 1.66.The minimum (1.00) and the maximum (10.00) scores obtained from the subscale demonstrated that the mean is at a very high level. Similarly, the standard deviation is low considering the range of scores obtained from the subscale. The obtained scores indicated low variability among teachers in their use of the *guiding approach*. This indicated the homogeneity of the sample suggesting strong

agreement among teachers. Based on these results, it can be concluded that the *guiding approach* is being used at a high level.

Component three of SCL, *distribution of power*, is the least frequently used component of all. This component was reported to be used at a moderate frequency level. With respect to the two factors, *participatory approach* and the *authoritarian approach,* there was variability regarding the reported frequency levels. *Participatory approach* factor is directly related to the distribution of power between teacher and students and it includes items related to involving students in decision making process and also providing students with choices. The factor of a*uthoritarian approach* consists of two items which are "I determine the educational objectives for each of my students" and "I decide on the kind of activities that take place in class". Unlike these two factors, the *guiding approach* factor received a high level of usage. The obtained scores indicated low variability with strong agreement among teachers. This factor is related to considering individual differences in classroom and encouraging autonomy.

Regarding the implementation of distribution of power component of SCL, in addition to teachers' perceptions discussed above, their opinions were gathered and analysed through the use of content analysis. The categories emerged from the content analysis include "teacher as decision maker" and "providing students with choices". The categories obtained are reported and discussed below:

Teacher as decision-maker. Majority of teachers stated (29) that they do not involve students in decision making process. The data gathered from interviews

demonstrated that teachers are the only decision makers in all stages of teaching and learning process including planning, instruction and assessment. Only some teachers (13) mentioned about getting students' ideas in setting up classroom rules at the beginning of the semester. Some teachers remarked (21) that they do not involve students in decision making because they are too young to make the right decisions. Only few teachers (4) asserted that they sometimes try to negotiate some issues with students, yet they are the ones who make the final decision at the end. Yamaç, a maths teacher, responded to this issue talking about the unwillingness of students in making suggestions and comments in classroom practises in the following way:

> I sometimes ask my students' opinions regarding classroom activities and tasks. I do that before the exams. I ask them to make suggestions. Sometimes they want to do more exam preparation. They want more practice so I bring more questions to class. Usually they are not willing to make any comments on anything. They tend to remain silent most of the time.

Providing students with choices. Some of the teachers stated that they rarely provide students with choices in classroom practices in some classroom activities, deadlines and type of homework to be assigned. However, they also emphasized that they make the final decision in almost all cases.

According to the data analysis, *distribution of power* component of SCL is perceived to be the least frequently used component of SCL in classroom teaching and learning. The results revealed that teachers perceive themselves as distributing power at a moderate level. This is the only component of SCL which is perceived to be implemented at a moderate level. Regarding the use of the *participatory approach* factor, the teachers are rather heterogeneous in nature indicating that there is variety among teachers in their use of this approach. The participatory approach factor is

directly related to the distribution of power between teacher and students and it includes items related to involving students in the decision making process in different stages of instruction from planning to assessment and also providing students choices in the teaching and learning process. This finding matches with the results of motivating students through involving them in the decision making process factor within the motivation component of SCL. These results clearly showed that some teachers may have problems regarding the use of distribution of power component of SCL, which may indicate that students of those teachers do not have much say in the teaching and learning process and nearly all decisions are taken by the teachers.

For the *authoritarian approach*, the results obtained showed that teachers have different perceptions regarding the use of this approach. The results indicated variability in the perceived implementation of this approach by the teachers. The authoritarian approach consists of two items which are "I determine the educational objectives for each of my students" and "I decide on the kind of activities that take place in class". Based on these results, it can be said that at least some of the teachers may not involve their students in the decision making process in classroom teaching and learning and prefer to be in control for some reasons. The data collected through the use of interviews support the data obtained from the inventory. In the interviews, significant number of the teachers clearly reported that they do not involve students in decision making process dominating the whole teaching and learning process. Some teachers sometimes provide students with choices, yet they generally say the final word. Estes (2004) also found similar results in her study in which she investigated the implementation of experiental programs focusing on power

relationships between teachers and students. The results demonstrated that the teachers often assume authority in most activities. In another study, Cullen and Harris (2009) assessed the degree of student-centredness through a systematic review of course syllabi. The results indicated that the syllabi received low ratings regarding the extent that power and control were shared with students.Similarly, Yang et al. (2008) reported that only 45% of secondary school science teachers in Taiwan considered student involvement in planning instruction as a constituent of SCL. Based on related research articles, Schweisfurth (2011) also states that shift to SCL is rather demanding for teachers due to its nature of teacher-learner relationships.

With respect to the guiding approach, the findings contradict with each other within the same component as the data showed that teachers perceive themselves as a guide rather than an authority figure in class. Teachers reported that they use the guiding approach at a high level. This finding also contradicts with in-depth data obtained from the interviews which clearly indicated that teachers dominate the teaching and learning process in which decisions taken by the teacher are imposed on students. This findings demonstrated that although teachers perceive themselves as a guide in the classroom practices, they do not share power with their students acting as an authority figure in class.

The findings clearly revealed that the distribution of power component of SCL is not implemented by the teachers. The data showed that most teachers are the exact authorities making all the decisions in the teaching and learning process. Moreover, significant number of teachers do not involve students in decision making process. Only some teachers stated that they sometimes provide students with choices yet

they are the ones who say the final word. The results also demonstrated that students are not trusted to be involved in the decision making process. However as stated in the literature, in SCL teacher and students are partners in the teaching and learning process negotiating all the decisions together (Brandes and Ginnis, 1986). Although it is still the teacher who makes the key decisions, students' ideas are also taken into consideration in all decisions made by the teacher. Teacher trusts students in decision making process encouraging students to take responsibility for their own learning and face the consequences of their decisions and actions.

4.1.4 Teacher and student roles

In order to examine the extent to which teacher and student roles component of SCL are performed in high schools, firstly the means and standard deviations for the teacher and student roles component including its factors "student-centred student roles", "traditional teacher roles" and "student-centred teacher roles", were calculated. In addition to that, in-depth data with respect to teachers' opinions on teacher and student roles were gathered and analysed through content analysis. The analysis of the data as well as the findings obtained is discussed below. The results obtained from the data analysis regarding teacher and student roles component are shown in Table 4.4.

Table 4.4

Statistical values regarding the teacher and student roles component and its factors

Teacher and student roles	Min	Max	M	95% CI	SD	Frequency
Student-centred student roles	7.00	25.00	16.94	[16.53, 17.35]	3.64	Moderately high
Traditional teacher roles	.00	20.00	7.01	[6.58, 7.44]	3.82	Heterogeneous
Student-centred teacher roles	8.00	20.00	14.82	[14.49, 15.15]	2.94	Moderately high
Teacher and student roles Total	16.00	57.00	38.78	[38.04, 39.51]	6.57	Moderately high

As it is displayed in Table 4.4, for the factor of *the teacher and student roles*, the mean was calculated as 38.78 and the standard deviation was found 5.67. The minimum and the maximum scores that were obtained from the scale were 16.00 and 57.00. Considering the maximum score, the mean obtained for the scale is at a moderately high level. However, the standard deviation for the scale can be considered low for the obtained range of scores. The results revealed the homogeneity of the sample performing teacher and student roles at a moderately high level.

Regarding the factor of *student-centred student roles*, the mean was calculated as 16.94 and the standard deviation 3.64. Based on the minimum and maximum scores which were calculated as 7.00 and 25.00, the mean can be considered at a moderately high level. Similarly, the standard deviation was found to be rather low for the range of scores obtained. The findings demonstrated low variability regarding teachers' perceptions of the implementation of student-centred student roles in classroom teaching and learning. This showed the homogeneity of the teachers in the sample. Based on these findings, it can be said that the teachers perceive the roles of students' as student-centred at a moderately high level.

With respect to the *traditional teacher roles* factor, the mean was calculated as 7.01 and standard deviation 3.82.The minimum (.00) and the maximum (20.00) scores that can be obtained from the subscale reveals that the mean is low. Moreover, the standard deviation calculated is considered as high for the obtained range of scores. These results revealed variability in the sample. In other words, the findings

demonstrated heterogeneity regarding the characteristics of the teacher in implementing traditional teacher roles.

For the *student-centred teacher roles* factor, the mean was 14.82 and the standard deviation was 2.94. The minimum (8.00) and the maximum (20.00) scores obtained from the subscale demonstrate that the mean is at a moderately high level. Similarly, the standard deviation is low considering the range of scores obtained from the subscale. The obtained scores indicate low variability among teachers in performing student-centred teacher roles. This indicated the homogeneity of the sample suggesting strong agreement among teachers. Based on these results, it can be concluded that, the student-centred teacher roles are being performed at a moderately high level.

According to the data analysis the fourth component of SCL, *the teacher and student roles* was reported to be used at a moderately high level. The results revealed the homogeneity of the teachers performing teacher and student roles at a moderately high level. Both student-centred student and teacher roles factors received a moderately high level of usage. Student-centred student roles include items such as encouraging autonomous, cooperative, collaborative, and constructivist learning, and the student-centred teacher roles contain items related to teacher being a guide who provide help and support to students in the teaching and learning process. Unlike these two factors, the results revealed variability in the reported usage level of the factor of *traditional teacher roles*. The findings demonstrated heterogeneity of teachers in performing traditional teacher roles. The items within this factor includes "I act as an authority figure in class", "I am responsible for what my students learn

and how they learn", "I provide my students all the necessary knowledge" and "I am responsible for providing my students all the skills and knowledge they need".

Regarding teacher and student roles component of SCL, in addition to teachers' perceptions, their opinions were also gathered and analysed through content analysis. The categories emerged from content analysis consisted of "traditional teacher roles", "student-centred teacher roles", traditional student roles" and "student-centred student roles". The categories obtained from content analysis are presented and discussed below:

Traditional teacher roles. The data gathered revealed that teachers have traditional conceptions of teacher roles. There was absolute unanimity among the teachers' views that the foremost role of the teacher is to transfer his or her knowledge to students. When teachers were asked to point out the main roles teachers should have in the teaching and learning, they reported that an effective teacher should be good at transmitting his/her knowledge to students, an expert in the field, the main source of information, a good role model and authority. They also stated that teachers should assign regular homework, prepare students to exams, bring extra materials to class, assess student performance and grade papers. Majority of the teachers (31) also stated that it is the teacher's responsibility to motivate students in the teaching and learning process. As Doruk, an English language teacher, stated:

> An effective teacher is the one who is good at transferring his/her knowledge to students. If you cannot do that you have problems. When presenting topics you should consider students as not knowing anything about the topic because sometimes you may create some gaps between topics. Teacher should give lots of examples and from daily life as well.

Doruk's statement also showed that he did not consider students' prior knowledge in the teaching and learning process. Some of the comments made by other teachers also demonstrated that students are regarded as empty vessels that do not have any background knowledge on subject taught, an argument rejected by SCL but embraced by participating teachers.

Student-centred teacher roles. As well as traditional teacher roles reported, significant number of teachers (17) also remarked that teachers should be a guide supporting student learning in the teaching and learning process. Selin, a chemistry teacher, expressed her ideas regarding teacher roles in the following way:

> The teacher should be a guide; he or she should keep up with recent approaches. To what extent he or she can use them is another question but he or she can organize variety of activities, ask variety of questions both in exams and in class...it's important to guide students, my only duty is not to teach for 40 minutes but to be a good role model as well.

Susan talked about being a guide and having variety in terms of activities and questions used in classroom practices.

Traditional student roles. When teachers were asked to talk about student roles, there was a general tendency among teachers that students should listen to the teacher carefully, take lecture notes, read the textbook and other notes, come to class prepared, take tests and quizzes, do homework regularly and study hard for exams. Su, a Turkish language and literature teacher, summarized her expectations from the students in the following way:

> I want my students to be active listeners in class; they should both participate and listen. They should come to class prepared and they

> should study daily. Some students talk a lot and want to replace you. I try to prevent that, there are both high and low achieving students in class. I try to bring all of them to the same level.

Student-centred student roles. Some teachers also identified that students should possess student-centred roles that include being willing to do research outside the class, learning how-to-learn skills and not being dependent on the teacher in the teaching and learning process, collaborating with other students and sharing knowledge in class. Deren, a history teacher, remarked that:

> Students should be willing to do research, willing to learn on their own. However, only few of them are like that, only few do research on the internet and then they come and share what they've learned with the class the next day.

While Deren was talking about student-centred roles for students, she also stressed the fact that only few of students perform those roles.

The results of the analysis demonstrated that the *teacher and student roles* component of SCL was reported to be used at a moderately high level by the teachers. Relative to the factor of *student-centred student roles*, the teachers perceive themselves as encouraging their students to adopt student-centred roles at a moderately high level. Student-centred student roles include items such as encouraging autonomous, cooperative, collaborative and constructivist learning. However, the analysis of in-depth data gathered from the interviews contradict with this finding as when teachers were asked to comment on student roles and responsibilities in the teaching and learning process they mainly talked about traditional student roles that include listening to the teacher carefully, taking lecture notes, reading and studying course book, making necessary revisions in class, doing

regular homework and studying hard for exams. Only few teachers mentioned student-centred roles and responsibilities such as doing research and working collaboratively with their peers.

Regarding the factor of *performing traditional teacher roles,* the results demonstrated variability in teachers. It showed different frequency levels in the use of traditional teacher roles. This finding also highlighted the fact that some teachers perform traditional authoritarian teacher roles in their classrooms. The items within this factor include "I act as an authority figure in class", "I am responsible for what my students learn and how they learn", "I provide my students all the necessary knowledge" and "I am responsible for providing my students all the skills and knowledge they need". The data gathered from in-depth interviews with teachers revealed that teachers have traditional conceptions of teacher roles and responsibilities. When teachers were asked about their beliefs regarding teacher roles and responsibilities, significant number of them asserted that teachers should be the main source of information responsible for conveying his/her knowledge to students. They also stressed that teachers should be the authority in class. Based on the findings obtained, it can be said that the way teachers approach to teacher and student roles and responsibilities are in line with teacher-centred approach. This may indicate that most teachers are not aware of the effectiveness of SCL and/or they lack the knowledge and competency to perform student-centred teacher roles in classroom practices.

For *student-centred teacher roles*, there were discrepancies between data collected. The data obtained from the scale showed that teachers perform these roles that

include teacher being a guide providing help and support to students in the teaching and learning process at a moderately high level. However, data obtained from the interviews revealed that only few teachers perform student-centred teacher roles. Similarly, the interview findings also demonstrated that most teachers expect students to have traditional roles and responsibilities.

The results obtained showed inconsistencies regarding teachers' perceptions and opinions towards teacher and student roles in teaching and learning. The data obtained based on teachers' perceptions revealed that both student-centred teacher and student roles are being performed at a moderately high level. The same data also indicated that there are also teachers who perform traditional teacher roles. However, in-depth data collected from the interviews clearly demonstrated that most teachers and students mainly possess traditional roles and responsibilities. This finding may indicate that teachers were not very sure and clear about teacher and student roles and responsibilities in the teaching and learning process. It may be the case that some teachers perform both traditional and student-centred roles as when they were asked about their roles and responsibilities, significant number of them mainly reported traditional roles that include being the primary source of knowledge responsible for transmitting knowledge to students. However, apart from that, most teachers also stated that a teacher should be a guide in the learning process. The findings may also demonstrate that some teachers were not very clear about teacher roles in SCL and interpreting the word "guide" in a different way. As stated in the literature, it is important for the teachers to have the necessary knowledge and skills in order to be able to fulfil their roles effectively and efficiently. SCL implies different roles for both teachers and students. In SCL, teacher is not the only source of information

responsible for knowledge transmission instead he or she has multiple roles to fulfil such as the role of a facilitator, guide, navigator and a co-learner in the process of teaching and learning.

4.1.5 Assessment

In order to find out teachers' perceptions of their use of the assessment component of SCL, firstly the means and standard deviations for the assessment component including its two factors: "alternative assessment methods" and "providing feedback" were calculated. Besides, in-depth data on teachers' opinions on their use of the assessment component were collected and analysed through content analysis. The analysis of the data as well as the findings obtained is discussed below.

The results obtained from the data analysis regarding teacher and student roles component are presented in Table 4.5.

Table 4.5

Statistical values regarding the assessment component and its factors

Assessment	Min	Max	M	95% CI	SD	Frequency
Alternative assessment methods	.00	25.00	15.10	[14.60, 15.60]	4.50	Heterogeneous
Providing feedback	4.00	20.00	14.24	[13.90, 14.57]	3.02	Heterogeneous
Assessment Total	12.00	45.00	29.34	[28.63, 30.04]	6.29	Heterogeneous

As it is shown in Table 4.5, the mean for the *assessment* component was calculated as 29.34 and the standard deviation was found 6.29. Considering the minimum (12.00) and the maximum (45.00) scores obtained for the scale, it can be concluded that the obtained mean was at a moderately high level. Based on the range of scores, the standard deviation can also be considered as rather high. The results revealed variability regarding the implementation of *assessment* component by high school

teachers. This showed the heterogeneity of the sample revealing variety in the use of assessment component of SCL.

The mean for the factor of *alternative assessment methods* was calculated as 15.10 and the standard deviation was found 4.50. Considering the minimum (.00) and the maximum (25.00) scores, the calculated mean was found to be at a moderately high level. The standard deviation was considered as rather high for the range of scores obtained. The findings demonstrated variability related to the use of alternative assessment methods in classroom teaching and learning. This showed the heterogeneity of the sample.

With respect to the factor of *providing feedback*, the mean was found as 14.24 and the standard deviation 3.02. Based on the minimum (4.00) and the maximum (20.00) scores, it can be said that the calculated mean is at a high level. Similarly, the standard deviation can be considered as rather low for the range of scores obtained. The findings indicated variability regarding *providing feedback* in classroom teaching and learning.

About the use of the final component of SCL, *assessment*, there was variability in the reported frequency level. Similar to the assessment component, the two factors *alternative assessment methods* and *providing feedback* factors were reported to be used at different frequency levels. The factor of *alternative assessment methods* include items regarding the use of portfolio, self and peer assessment and the *providing feedback* factor contains items about giving immediate and constructive feedback.

Regarding the assessment component, in addition to teachers' perceptions of their use of the assessment component, their opinions were also gathered and analysed through content analyses. The categories emerged from content analysis included "traditional assessment methods", "alternative assessment methods" and "self and peer assessment". The categories emerged are presented and discussed below:

Traditional assessment methods. The data gathered from in-depth interviews clearly demonstrated that teachers are stuck to traditional assessment methods in evaluating student achievement in high schools. The most widely used methods include written tests and homework. As teachers argued, student achievement in high schools is mainly based on their performance in written tests that consist of a midterm and a final exam administered per semester. The content of these tests mostly comprised of multiple choice tests. Cenk, a physics teacher, also commented on the type of questions he asks in the exams:

> In the midterm exam I usually ask open ended questions but in the final I mostly use questions previously asked in the university entrance exam. My aim is to prepare students to this exam. Only few students could go to private tutoring institutions.

Since the university entrance exam is purely in multiple choice format, teachers also feel obliged to prepare their students to this exam. In assigning a total grade to students, the midterm grade is multiplied by two and the final by three. Teachers also assign homework grade to students which is multiplied by one. Then the sum of all that students obtains from midterm, final and homework is divided by six. As reported by all teachers, this is the common procedure used in all high schools. Homework grade includes homework done as well as student behaviour in class.

Melis, Turkish language and literature teacher, explained what she included in homework grade:

> The grade I assign for homework includes the term project, homework assigned throughout the semester and student participation in class.

Some teachers also mentioned giving term projects to students that mainly refers to doing research on a topic.

The in-depth data also revealed that there is a focus on the product rather than the process of learning. An English teacher, Yasemin, criticized the assessment system recommending focusing both on product and process. She suggested assessing student performance throughout a semester:

> We definitely need to change the assessment system. We evaluate student progress based on their exam grades. That's why students do not want to take part in class activities. They don't get any credit for that.

Yasemin criticised the general assessment system used in schools talking about the negative backwash effect of tests on the teaching process. She stated that students do not want to take part in class activities as a result of the assessment system used in schools.

Alternative assessment methods. Based on the interviews with teachers, alternative assessment methods such as portfolios, research projects, and performance evaluation are not employed to assess student learning. As teachers emphasised, according to the regulations in Cyprus Turkish education system, they need to administer two written exams: a midterm and a final per semester. Teachers believed

that they need to prepare students to the university exam which consists of multiple choice tests and thus they tend to ask multiple choice questions in the exams. Some teachers mentioned about giving term projects which are mostly done individually.

Self and peer assessment. With respect to the use of self and peer assessment used, only very few teachers mentioned about using them. Melis, Turkish language and literature teacher, mentioned about the presence of self-assessment tasks in course books. She remarked her opinions as follows:

> There are self-evaluation tasks at the end of each unit asking students to evaluate their progress. There are also self-evaluation criteria for homework ...I don't think they are very effective, I believe that exams better serve the aim of highlighting student weaknesses and strengths.

As she explained, she thinks that exams better serve the aim of highlighting student progress in the teaching and learning process rather than self-assessment tasks in course books.

Finally, with respect to the *assessment* component of SCL, the results obtained from the inventory showed variability within the teachers. It demonstrated that teachers have different perceptions of the frequency level with which they use the assessment component. The factors which are about *alternative assessment methods* including items regarding the use of portfolio, self and peer assessment, group work, and *providing feedback* that contains items about giving immediate and constructive feedback, commenting on students' weaknesses and strengths on a regular basis and helping students diagnose the gap between their goals and their present performance are perceived to be used at different frequency levels by the teachers. Although the

data revealed heterogeneity among teachers, the data collected from the interviews demonstrated that the assessment component of SCL is not implemented at all. The in-depth data obtained showed that student learning is mostly evaluated through paper and pencil tests through midterm and final exams. Homework and also student behaviour in class is considered but not regarded as very important when it comes to assigning a grade to students. Alternative assessment methods such as portfolio, projects and performance evaluation that focus on the process rather than product are not included in the assessment system. Moreover, the self and peer assessment, an important ingredient of student-centred assessment, are not used in classrooms at all. The obtained findings are in line with the study conducted by Eberly et al. (2001) where they examined a total of 145 syllabi in 100 general education courses. According to the results of their study, traditional assessment methods, mostly multiple choice tests were found to dominate with very little inclusion of alternative assessment methods such as projects and presentations. Therefore, in the light of the data collected, it can be said that the assessment component of SCL is not implemented in the process of teaching and learning in high schools.

4.1.6 Discussion

The aim of the first research question of this study was to explore the extent to which SCL is implemented in high schools in North Cyprus with respect to five main components of SCL that include motivation, instructional strategies, distribution of power, teacher and student roles and assessment. The data gathered through the use of SCLI and SCLIF based on teachers' perceptions of and opinions revealed inconsistencies regarding the use of SCL in classroom practices. Although teachers perceive themselves as implementing *motivation, instructional strategies,* and *teacher and student roles* at a high level, the in-depth data collected through semi-

structured interviews clearly demonstrated that SCL is not implemented at a sufficient level in many aspects regarding all components of SCL in classroom teaching and learning. It may be the case that some teachers are not very clear or aware of the kind of approach used in high schools. This may also indicate that at least some teachers are not clear about what SCL is and how it can be applied in practice.

Regarding the *motivation* component, the teachers perceive themselves as implementing this component at a high level. Two data collected from the motivation scale and interviews showed that although teachers use some intrinsic motivators such as considering students' needs, abilities and interests as well as the motivation level in designing classroom activities, creating supportive, friendly and relaxed learning environment for students, valuing students' opinions in class, getting to know their students at a personal level, giving examples from daily life, asking questions, using materials and labs and relating topics to daily life, extrinsic motivators mainly the use of "reward" and "punishment" are very common in the teaching and learning process. The findings also revealed that most teachers use exams as a tool to increase the motivation level of their students which lead to less intrinsic motivation to learn and lower level of critical thinking preventing students to become autonomous learners. Moreover, regarding distribution of power, the findings showed that only few teachers provide students with choice and control in their learning which is an important factor in increasing the motivation of students.

Regarding the use of *instructional strategies,* there were contradictory results. Although teachers consider themselves as implementing SCL strategies at a high

level, in-depth data demonstrated that student-centred teaching methods and techniques are not implemented in classroom teaching and learning mainly because they are considered to be time consuming and not very effective in preparing students to exams. The findings also indicated that traditional methods and techniques that include lectures, question and answer and individual work are being used extensively in classroom practices. Only few teachers were found to use SCL methods and techniques such as project-based learning and discovery learning in their classrooms.

Distribution of power is the least frequently implemented component of all. This component is perceived to be used at a moderate level whereas in-depth data revealed that teachers do not share power in classroom practices. Teachers are the exact authorities making all the decisions in the teaching and learning process. Moreover, significant number of teachers do not involve students in decision making process. Only some teachers sometimes provide students with choices, yet they are the ones who say the final word. Students are not trusted to be involved in the decision making process. The results indicated that there is no fair power distribution between teacher and students.

The results were inconsistent regarding teachers' perceptions and opinions towards *teacher and student roles* in teaching and learning. According to teachers' perceptions, student-centred teacher and student roles are being performed at a moderately high level. However, the data also indicated that there are also teachers who perform traditional teacher roles. Similarly, interviews clearly demonstrated that teachers and students mainly possess traditional roles and responsibilities in the

teaching and learning process. This finding may indicate that teachers were not very sure and clear about teacher and student roles and responsibilities in the teaching and learning process. It may be the case that some teachers perform both traditional and student-centred roles as when they were asked about their roles and responsibilities, significant number of them mainly reported traditional roles that include being the primary source of information responsible for transmitting knowledge to students.

Finally, with respect to the *assessment* component of SCL, the results obtained from the inventory showed variability within the teachers indicating that teachers have different perceptions of the frequency level with which they use the assessment component. Although the data revealed heterogeneity among teachers, interviews demonstrated that the assessment component of SCL is not implemented at all. Student learning is mostly evaluated through paper and pencil tests through midterm and final exams. Homework and also student behaviour in class is considered but not regarded as very important indicators of learning. Alternative assessment methods such as portfolio, projects and performance evaluation that focus on the process rather than product are not included in the assessment system. Moreover, the self and peer assessment, an important ingredient of student-centred assessment, are not used in classrooms at all.

4.2 Teachers' Characteristics and their Perceived Use of SCL

In the second research question it was aimed to explore whether high school teachers' use of SCL varies depending on their characteristics that includes gender, subject taught, teaching experience and pedagogical knowledge. The results regarding each characteristic are presented below.

4.2.1 Gender and the use of SCL

First of all it was tried to explore the relationship between the use of SCL and the gender. For this purpose, firstly the mean scores and standard deviations obtained for each component, namely motivation, instructional strategies, teacher and student roles, distribution of power and assessment for both male and female teachers were calculated. Then, independent-samples *t* test was conducted to test whether high school teachers' use of SCL varies depending on their gender. The independent variable, gender, included two levels: male and female. The dependent variable, on the other hand, is the implementation of five main components of SCL. The results of the independent-samples *t* test for each scale are displayed in Table 4.6.

Table 4.6

Independent-samples t test results for differences in teachers' use of SCL depending on their gender

Scales of SCL	Gender	N	M	SD	T	*p*
Motivation						
Creating motivating conditions	Female	205	23,23	3,97	,172	,863
	Male	104	23,15	3,40		
Motivating students through involving them in decision making process	Female	205	6,17	2,050	,209	,835
	Male	104	6,12	2,34		
Motivation Total	Female	205	29,40	4,99	,220	,826
	Male	104	29,27	5,00		
Instructional Strategies						
Considering student characteristics in choosing strategies	Female	205	25,60	4,51	1,930	,054
	Male	104	24,50	5,11		
Independent learning strategies	Female	205	11,04	2,57	1,632	,104
	Male	104	10,55	2,32		
Traditional teaching methods/techniques	Female	205	7,43	2,81	-1,735	,084
	Male	104	8,05	3,22		
Instructional strategies Total	Female	205	44,08	6,92	1,120	,263
	Male	104	43,11	7,67		
Distribution of Power						
Participatory approach	Female	205	9,56	3,60	-1,523	,129
	Male	104	10,25	4,06		
Authoritarian approach	Female	205	4,42	2,55	,409	,683
	Male	104	4,30	2,39		
Guiding approach	Female	205	7,03	1,66	,266	,791
	Male	104	6,98	1,68		
Distribution of power Total	Female	205	21,02	5,11	-,818	,414
	Male	104	21,53	5,40		
Teacher and Student Roles						
Student-centred student roles	Female	205	16,85	3,65	-,640	,523
	Male	104	17,13	3,65		
Traditional teacher roles	Female	205	7,12	3,91	,834	,405
	Male	104	6,74	3,61		
Student-centred teacher roles	Female	205	14,91	2,91	,600	,549
	Male	104	14,70	2,99		
Teacher and Student Roles Total	Female	205	38,89	6,56	,396	,693
	Male	104	38,57	6,65		
Assessment						
Alternative assessment methods	Female	205	15,15	4,37	,162	,872
	Male	104	15,06	4,77		
Providing feedback	Female	205	14,44	2,96	1,618	,107
	Male	104	13,85	3,11		
Assessment Total	Female	205	29,59	6,16	,892	,373
	Male	104	28,91	6,54		

As shown in Table 4.6, all the test results for testing the difference between male and female teachers regarding their use of SCL were found to be statistically non-significant for all scales that include motivation $t(308) = .22$, $p = .83$, instructional strategies $t(308) = 1.12$, $p = .26$, distribution of power $t(308) = -.81$, $p = .41$, student and teacher roles $t(308) = .40$, $p = .69$ and assessment $t(308) = .89$, $p = .37$. As Table 4.6 reveals, the test results were also found to be non-significant for all factors within the scales. Therefore, these findings indicate that teachers' use of SCL does not vary depending on their gender. In other words, it can be said that all male and female teachers implement SCL at the same frequency level.

4.2.2 Subject taught and the use of SCL

In the second research question, it was also tried to explore the relationship between subject taught and the use of SCL regarding five main components of SCL that include motivation, instructional strategies, distribution of power, teacher and student roles and assessment. For this purpose, firstly the mean scores and standard deviations for teachers teaching different subject areas for each scale were calculated. Before, conducting one-way ANOVA to test whether high school teachers' use of SCL varies depending on subject area they teach, Levene test (Green and Salkind, 2005) was used to assess variance homogeneity, which is a precondition for parametric tests, including one-way ANOVA. The Levene test was used to test the assumption of variance homogeneity among teachers teaching four different subject areas. The independent variable, subject taught, included four levels: languages, science, social science and fine arts. The dependent variable, on the other hand, is the implementation of the five main component of SCL in classroom teaching and learning. The results of the tests for each scale are presented below.

a) Motivation

Regarding the motivation scale, firstly the results regarding the mean scores and standard deviations of teachers teaching different subject areas are presented in Table 4.7.

Table 4.7

The results of descriptive statistics regarding teachers' perceptions of their use of SCL depending on subject area taught for the motivation componen.

Motivation	Subject	N	M	SD	SE
Creating motivating conditions	Languages	54	23,33	4,05	,55
	Science	86	22,69	3,80	,41
	Social Science	135	23,38	3,82	,33
	Fine arts	34	23,47	3,23	,55
	Total	309	23,19	3,79	,21
Motivating students through involving them in decision making process	Languages	54	6,15	2,07	,28
	Science	86	5,87	2,19	,24
	Social Science	135	6,32	2,20	,19
	Fine arts	34	6,12	1,95	,33
	Total	309	6,14	2,15	,12
Motivation Total	Languages	54	29,48	5,04	,68
	Science	86	28,56	4,92	,53
	Social Science	135	29,70	5,24	,45
	Fine arts	34	29,59	4,11	,70
	Total	309	29,33	5,00	,28

As it is seen in Table 4.7, teachers teaching different subject areas have very close but different mean scores regarding the implementation of motivation component of SCL in classroom teaching and learning.

The results of the Levene test which were found to be non-significant for the motivation component $F(3, 305) = 1.48$, $p = .22$ including its two factors "creating motivating conditions" $F(3, 305) = .83$, $p = .48$ and "motivating students through involving them in decision making process" $F(3, 305) = .89$, $p = .45$ indicated that

the assumption of homogeneity of variance among four groups was not violated and thus, the results of one-way ANOVA can, therefore, be considered valid.

One-way ANOVA was conducted to find out the relationship whether there are significant differences in mean scores of teachers teaching different subject areas in their use of SCL regarding the motivation scale. The results of one-way ANOVA are displayed in Table 4.8.

Table 4.8

The results of one-way ANOVA for mean difference in teachers' use of SCL depending on subject area taught for the motivation component

Motivation		**SS**	***df***	**MS**	**F**	***p***
Creating motivating conditions	Between Groups	30.386	3	10.129	.703	.551
	Within Groups	4396.727	305	14.415		
	Total	4427.113	308			
Motivating students through involving them in decision making process	Between Groups	10.850	3	3.617	.783	.504
	Within Groups	1409.597	305	4.622		
	Total	1420.447	308			
Motivation Total	Between Groups	73.592	3	24.531	.980	.403
	Within Groups	7637.074	305	25.040		
	Total	7710.667	308			

As shown in Table 4.8, no significant difference was found in teachers' use of SCL regarding subject area they teach for the motivation component of SCL ($F(3,305)= .980$, $p = .403>.05$), including its factors "creating motivating conditions" ($F(3,305) = .703$, $p = .551>.05$) and "motivating students through involving them in decision-making process" ($F(3,305) = .783$, $p = .504>.05$). Therefore, the findings show that teachers' use of SCL does not vary depending on subject area they teach. Based on the results, it can be said that teachers teaching different subject areas implement the motivation component of the SCL at the same frequency level.

b) Instructional Strategies

With respect to the instructional strategies scale, firstly the results regarding the mean scores and standard deviations of teachers teaching different subject areas are presented in Table 4.9.

Table 4.9

The results of descriptive statistics regarding teachers' use of SCL depending on subject area taught for the instructional strategies component

Instructional Strategies	**Subject**	**N**	**M**	**SD**	**SE**
Considering student characteristics in choosing strategies	Languages	54	25,52	4,70	,64
	Science	86	24,45	4,67	,50
	Social Science	135	25,67	4,73	,41
	Fine arts	34	24,94	4,90	,84
	Total	309	25,23	4,73	,27
Independent learning strategies	Languages	54	11,09	2,59	,35
	Science	86	10,69	2,44	,26
	Social Science	135	10,98	2,41	,21
	Fine arts	34	10,59	2,83	,48
	Total	309	10,87	2,49	,14
Traditional teaching methods/techniques	Languages	54	7,37	2,62	,36
	Science	86	7,51	2,94	,32
	Social Science	135	7,73	3,01	,26
	Fine arts	34	7,94	3,36	,57
	Total	309	7,63	2,96	,17
Instructional strategies Total	Languages	54	43,98	6,54	,89
	Science	86	42,65	6,74	,73
	Social Science	135	44,38	7,27	,62
	Fine arts	34	43,47	8,69	1,49
	Total	309	43,73	7,18	,41

As it is displayed in Table 4.9, teachers teaching different subjects have very close but different mean scores regarding the use of instructional strategies component of SCL in classroom teaching and learning.

The Levene test results were reported to be non-significant for the instructional strategies component F(3, 305) = 1.76, p = .15 including its three factors "considering student characteristics in choosing strategies" F(3, 305) = .08, p = .97, "independent learning strategies" F(3, 305) = .92, p = .43, "traditional teaching methods/techniques" F(3, 305) = .85, p = .49. Therefore, the results showed that the assumption of variance homogeneity among four groups was not violated, indicating that the results of one--way ANOVA can be considered valid.

One-way ANOVA was conducted to find out whether there are significant differences in mean scores of teachers teaching different subject areas in their use of SCL regarding the instructional strategies scale. The results of one-way ANOVA are displayed in Table 4.10.

Table 4.10

The results of one-way ANOVA for mean difference in teachers' use of SCL depending on subject area taught for the instructional strategies component

Instructional Strategies		**SS**	***df***	**MS**	**F**	***p***
Considering student characteristics in choosing strategies	Between Groups	85,805	3	28.602	1.279	.282
	Within Groups	6820,337	305	22.362		
	Total	6906,142	308			
Independent learning strategies	Between Groups	9,849	3	3.283	.525	.665
	Within Groups	1906,229	305	6.250		
	Total	1916,078	308			
Traditional teaching methods/techniques	Between Groups	9,578	3	3.193	.362	.781
	Within Groups	2692,363	305	8.827		
	Total	2701,942	308			
Instructional strategies Total	Between Groups	163,748	3	54.583	1.060	.366
	Within Groups	15708,957	305	51.505		
	Total	15872,706	308			

As shown in Table 4.10, the test results are non-significant regarding subject area taught for the instructional strategies component of SCL F(3,305)= 1.060, p = .366>.05), including its factors "considering student characteristics in choosing strategies" F(3,305) = 1.279, p = .282>.05), "independent learning strategies" F(3,305) = .525, p = .665>.05) and "traditional teaching methods/techniques" F(3,305) = .362, p = .781>.05). Therefore, the findings show that teachers' use of SCL does not vary depending on subject area they teach. Based on the results, it can be said that teachers teaching different subject areas implement the instructional strategies component of the SCL at the same frequency level.

c) Distribution of power

Regarding the distribution of power, firstly the results including mean scores and standard deviations of teachers teaching different subject areas are presented in Table 4.11.

Table 4.11

The results of descriptive statistics regarding teachers' use of SCL depending on subject area taught for the distribution of power component

Distribution of power	Subject	N	M	SD	SE
Participatory approach	Languages	54	9.72	3.51	.48
	Science	86	8.98	3.54	.38
	Social Science	135	10.24	3.91	.34
	Fine arts	34	10.15	3.87	.66
	Total	309	9.79	3.76	.21
Authoritarian approach	Languages	54	4.24	2.08	.28
	Science	86	4.49	2.56	.27
	Social Science	135	4.63	2.61	.22
	Fine arts	34	3.50	2.48	.42
	Total	309	4.40	2.51	.14
Guiding approach	Languages	54	6.61	1.85	.25
	Science	86	6.86	1.52	.16
	Social Science	135	7.24	1.67	.14
	Fine arts	34	7.12	1.61	.28
	Total	309	7.01	1.66	.095
Distribution of power Total	Languages	54	20.57	4.80	.65
	Science	86	20.32	4.73	.51
	Social Science	135	22.12	5.50	.47
	Fine arts	34	20.76	5.38	.92
	Total	309	21.20	5.20	.29

As it is seen in the table 4.11, teachers teaching different subjects have very close but different mean scores regarding the distribution of power component of SCL.

The results of the Levene test were found to be non-significant for the distribution of power component $F(3, 305) = .56$, $p = .64$ and its three factors "participatory approach" $F(3, 305) = .56$, $p = .64$, "authoritarian approach" $F(3, 305) = 1.84$, $p = .39$, "guiding approach" $F(3, 305) = .68$, $p = .57$ showing that the assumption of variance homogeneity was not violated, so that the results of One-Way Analysis of Variance (one-way ANOVA) can be considered valid.

One-Way Analysis of Variance (one-way ANOVA) was conducted to find out whether there are significant differences between teachers teaching different subjects in their use of SCL regarding distribution of power. The results of one-way ANOVA are displayed in Table 4.12.

Table 4.12

The results of One-way ANOVA for difference in teachers' use of SCL depending on subject area taught for the distribution of power component

Distribution of Power		**SS**	***df***	**MS**	**F**	***p***
Participatory approach	Between Groups	89,342	3	29.781	2.129	.097
	Within Groups	4265,985	305	13.987		
	Total	4355,327	308			
Authoritarian approach	Between Groups	36,699	3	12.233	1.964	.119
	Within Groups	1899,340	305	6.227		
	Total	1936,039	308			
Guiding approach	Between Groups	18,327	3	6.109	2.230	.085
	Within Groups	835,622	305	2.740		
	Total	853,948	308			
Distribution of power Total	Between Groups	207,251	3	69.084	2.595	.053
	Within Groups	8120,309	305	26.624		
	Total	8327,560	308			

As it is given in Table 4.12, there is no significant difference in teachers' use of the SCL with respect to the subject taught for the distribution of power scale of SCL $F(3,305)= 2.595$, $p = .053>.05$), and similarly no significant differences were found for the use of participatory approach $F(3,305)= 2.129$, $p = .097>.05$), authoritarian approach $F(3,305)= 1.964$, $p = .119>.05$) and guiding approach $F(3,305)= 2.230$, $p = .085>.05$).). The findings reveal that teachers' use of SCL does not vary depending on subject area they teach. Based on the results, it can be said that teachers teaching different subject areas implement the distribution of power component of the SCL at the same frequency level.

d) Teacher and student roles

For the teacher and student roles scale, firstly the results including mean scores and standard deviations of teachers teaching different subjects areas for teacher and student roles are presented in Table 4.13.

Table 4.13

The results of descriptive statistics regarding teachers' use of SCL depending on subject area taught for the teacher and student roles component

Teacher and student roles	Subject	N	M	SD	SE
Student-centred student roles	Languages	54	17.30	3.59	,49
	Science	86	16.38	3.48	,37
	Social Science	135	17.26	3.66	,31
	Fine arts	34	16.53	3.98	,68
	Total	309	16.94	3.64	,21
Traditional teacher roles	Languages	54	7.39	3.15	,43
	Science	86	7.02	4.06	,44
	Social Science	135	7.07	3.94	,34
	Fine arts	34	6.18	3.72	.64
	Total	309	7.01	3.82	.22
Student-centred teacher roles	Languages	54	14.74	2.95	.40
	Science	86	14.29	2.80	.30
	Social Science	135	15.07	2.99	.26
	Fine arts	34	15.32	3.01	.52
	Total	309	14.82	2.94	.17
Teacher and student roles total	Languages	54	39.42	5.90	.80
	Science	86	37.67	6.439	.69
	Social Science	135	39.40	6.55	.56
	Fine arts	34	38.03	7.73	1.32
	Total	309	38.78	6.57	.74

As it can be seen in Table 4.13, teachers teaching different subjects have very close but different mean scores regarding teacher and student roles component of SCL in classroom teaching and learning.

The results of the Levene test were found to be non-significant for the teacher and student roles component $F(3, 305) = .83$, $p = .48$, including its three factors "student-

centred student roles" F(3, 305) = .68, p = .56, "traditional teacher roles" F(3, 305) = 1.82, p = .14 and "student-centred teacher roles" F(3, 305) = .39, p = .76. The findings indicate that the assumption of variance homogeneity was not violated so that the results of one-way ANOVA can be considered valid.

One-way ANOVA was conducted to find out whether there are significant differences in teachers' use of SCL relative to subject taught for teacher and student roles component. The results of one-way ANOVA are displayed in Table 4.14.

Table 4.14

The results of one-way ANOVA for mean difference in teachers' use of SCL depending on subject area taught for teacher and student roles

Teacher and student roles		**SS**	***df***	**MS**	**F**	***p***
Student-centred student roles	Between Groups	52,958	3	17.653	1.334	.263
	Within Groups	4035,993	305	13.233		
	Total	4088,951	308			
Traditional teacher roles	Between Groups	31,820	3	10.607	.724	.538
	Within Groups	4468,128	305	14.650		
	Total	4499,948	308			
Student-centred teacher roles	Between Groups	41,760	3	13.920	1.614	.186
	Within Groups	2630,803	305	8.626		
	Total	2672,563	308			
Teacher and student roles Total	Between Groups	194,322	3	64.774	1.508	.212
	Within Groups	13098,714	305	42.947		
	Total	13293,036	308			

As Table 4.14 displays, the results of one-way ANOVA were found to be non-significant regarding subject taught for teacher and student roles scale F(3,305)= 1.508, p = .212>.05), including its factors "student-centred student roles" F(3,305)= 1.334, p = .263>.05), "traditional teacher roles" F(3,305)= .724, p = .186>.05) and "student-centred teacher roles" F(3,305)= 1.614, p = .186>.05). The findings revealed that teachers' use of SCL does not vary depending on subject area they

teach. Therefore, it can be said that there is no difference in the frequency level of teachers teaching different subject areas in their use of teacher and student roles component of SCL.

e) Assessment

With respect to the assessment component, firstly, the results including mean scores and standard deviations of teachers teaching different subjects are given in Table 4.15.

Table 4.15

The results of descriptive statistics regarding teachers' use of SCL depending on subject taught for the assessment component

Assessment	**Subject**	**N**	**M**	**SD**	**SE**
Alternative assessment methods	Languages	54	15.72	3.98	.54
	Science	86	14.84	4.40	.47
	Social Science	135	15.27	4.79	.41
	Fine arts	34	14.09	4.31	.74
	Total	309	15.10	4.50	.26
Providing feedback	Languages	54	14.42	2.94	.40
	Science	86	13.81	3.17	.34
	Social Science	135	14.49	2.99	.26
	Fine arts	34	14.00	2.89	.50
	Total	309	14.24	3.025	.17
Assessment total	Languages	54	30.15	5.74	.78
	Science	86	28.65	6.25	.67
	Social Science	135	29.76	6.74	.58
	Fine arts	34	28.09	5.24	.90
	Total	309	29.34	6.29	.36

As it is seen in Table 4.15 teachers teaching different subjects have very close but different mean scores regarding assessment component of SCL.

The results of the Levene test were found to be non-significant for the assessment component $F(3, 305) = 2.48$, $p = .06$ including its two factors "alternative assessment methods" $F(3, 305) = 1.76$, $p = .15$ and "providing feedback" $F(3, 305) = .18$, $p = .91$

indicating that the assumption of equality of variance was not violated so that the results of one-way ANOVA can be considered valid.

Finally, one-way ANOVA was conducted to find out whether there are significant differences in teachers' use of SCL regarding the assessment component. The results of one-way ANOVA are displayed in Table 4.16.

Table 4.16

Results of one-way ANOVA for mean difference in teachers' use of SCL depending on subject taught for the assessment component

Assessment		**SS**	***df***	**MS**	**F**	***p***
Alternative assessment methods	Between Groups	65,741	3	21.914	1.081	.357
	Within Groups	6184,149	305	20.276		
	Total	6249,890	308			
Providing feedback	Between Groups	27,794	3	9.265	1.013	.387
	Within Groups	2789,960	305	9.147		
	Total	2817,754	308			
Assessment total	Between Groups	153,497	3	51.166	1.295	.276
	Within Groups	12051,500	305	39.513		
	Total	12204,997	308			

As it is seen in Table 4.16, the results of one-way ANOVA were non-significant regarding subject taught for the assessment component F(3,305)= 1.295, p = .276>.05), including its factors "alternative assessment methods" F(3,305)= 1.081, p = .357>.05) and "providing feedback" F(3,305)= 1.013, p = .387>.05). The findings revealed that teachers' use of SCL does not vary depending on subject area they teach. Therefore, it can be said that there is no difference in the frequency level of teachers in their use of assessment component of SCL regarding subject area they teach.

4.2.3 Teaching experience and the use of SCL

As part of the second research question, it was also tried to find out the relationship between teaching experience and the use of SCL regarding five main components of SCL that include motivation, instructional strategies, distribution of power, teacher and student roles and, assessment. For this purpose, firstly the mean scores and standard deviations of teachers with different years of teaching experience for each scale were calculated. Before, conducting one-way ANOVA to test whether high school teachers' use of SCL varies depending on their teaching experience, Levene test was administered to test variance homogeneity. The independent variable, teaching experience, included five levels that consist of years of teaching experience between 1 - 5, 6 - 10, 11-15, 16-20 and 20 and above. The dependent variable, on the other hand, is the use of five main components of SCL in classroom teaching and learning. The results of the tests for each scale are presented below.

a) Motivation

For the motivation scale, firstly the results regarding mean scores and standard deviations of teachers with different teaching experience were calculated. The results are given in Table 4.17.

Table 4.17

The results of descriptive statistics regarding teachers' use of SCL depending on teaching experience for the motivation component

Motivation	Teaching experience	N	M	SD	SE
Creating motivating conditions	1-5 years	67	23,73	3,70	,45
	6-10 years	74	23,28	4,00	,46
	11-15 years	66	22,27	3,80	,47
	16-20 years	57	23,17	3,90	,52
	20-above	45	23,58	3,30	,49
	Total	309	23,19	3,79	,21
Motivating students through involving them in decision making process	1-5 years	67	5,66	1,91	,23
	6-10 years	74	5,99	2,072	,24
	11-15 years	66	6,23	2,02	,25
	16-20 years	57	6,28	2,58	,34
	20-above	45	6,84	2,05	,31
	Total	309	6,14	2,15	,12
Motivation total	1-5 years	67	29,39	4,48	,55
	6-10 years	74	29,27	5,18	,60
	11-15 years	66	28,50	4,89	,60
	16-20 years	57	29,46	5,59	,74
	20-above	45	30,42	4,80	,71
	Total	309	29,33	5,00	,28

As it is shown in Table 4.17, teachers with different teaching experience have close but different mean scores regarding motivation component of SCL.

The results of the Levene test were reported to be non-significant both for the motivation component $F(4, 304) = 1.53$, $p = .19$ and its factors "creating motivating conditions" $F(4, 304) = .72$, $p = .58$ and "motivating students through involving them in decision making-process" $F(4, 304) = 1.72$, $p = .14$.

One-way ANOVA was conducted to find out whether there are significant differences in teachers' mean scores with respect to teaching experience for the motivation component. The results of one-way ANOVA are displayed in Table 4.18.

Table 4.18

The results of one-way ANOVA for mean difference in teachers' use of SCL depending on teaching experience for the motivation component

Motivation		**SS**	***Df***	**MS**	**F**	***p***
Creating motivating conditions	Between Groups	82,594	4	20,649	1,445	,219
	Within Groups	4344,519	304	14,291		
	Total	4427,113	308			
Motivating students through involving them in decision making process	Between Groups	41,345	4	10,336	2,278	,061
	Within Groups	1379,102	304	4,537		
	Total	1420,447	308			
Motivation total	Between Groups	100,543	4	25,136	1,004	,406
	Within Groups	7610,123	304	25,033		
	Total	7710,667	308			

As it is seen in Table 4.18, the results of one-way ANOVA were found to be non-significant for the motivation component of SCL F(4,304)= 1.004, p = .406>.05), including its factors "creating motivating conditions" (4,304)= 1.445, p = .219>.05) and "motivating students through involving them in decision making process" F(4,304)= 2.278, p = .061>.05).

b) Instructional Strategies

Regarding the instructional strategies component, firstly, the results with respect to the mean scores and standard deviations of teachers with different teaching experience were calculated. The results are given in Table 4.19.

Table 4.19

The results of descriptive statistics regarding teachers' use of SCL depending on teaching experience for the instructional strategies component

Instructional Strategies	Teaching Experience	N	M	SD	SE
Considering student characteristics in choosing strategies	1-5 years	67	26,34	4,35	,53
	6-10 years	74	25,67	4,71	,55
	11-15 years	66	24,03	4,54	,56
	16-20 years	57	24,79	4,99	,66
	20-above	45	25,13	5,00	,74
	Total	309	25,23	4,73	,27
Independent learning strategies	1-5 years	67	10,39	2,90	,35
	6-10 years	74	10,86	2,44	,28
	11-15 years	66	11,04	2,43	,30
	16-20 years	57	10,89	2,47	,33
	20-above	45	11,33	1,98	,29
	Total	309	10,87	2,49	,14
Traditional teaching methods/techniques	1-5 years	67	8,00	3,39	,41
	6-10 years	74	7,85	2,71	,31
	11-15 years	66	7,38	2,56	,31
	16-20 years	57	7,56	3,07	,41
	20-above	45	7,18	3,11	,46
	Total	309	7,63	2,96	,17
Instructional strategies total	1-5 years	67	44,73	7,86	,96
	6-10 years	74	44,39	7,23	,84
	11-15 years	66	42,45	7,05	,87
	16-20 years	57	43,24	7,16	,95
	20-above	45	43,64	6,12	,91
	Total	309	43,73	7,18	,41

As it is seen in Table 4.17, teachers with different teaching experience have close but different mean scores regarding instructional strategies component of SCL.

The results of Levene test were reported to be non-significant for the instructional strategies component $F(4, 304) = .45$, $p = .77$ including its three factors "considering student characteristics in choosing strategies" $F(4, 304) = .54$, $p = .70$, "independent learning strategies" $F(4, 304) = 2.04$, $p = .09$ and "traditional teaching methods/ techniques" $F(4, 304) = 2.09$, $p = .08$.

One-way ANOVA was conducted to find out whether there are significant differences in mean scores of teachers' with respect to teaching experience for the instructional strategies component. The results of one-way ANOVA are displayed in Table 4.20.

Table 4.20

The results of one-way ANOVA for mean difference in teachers' use of SCL depending on teaching experience for the instructional strategies component

Instructional strategies		**SS**	***df***	**MS**	**F**	***p***
Considering student characteristics in choosing strategies	Between Groups	204,209	4	51,052	2,316	,057
	Within Groups	6701,934	304	22,046		
	Total	6906,142	308			
Independent learning strategies	Between Groups	27,287	4	6,822	1,098	,358
	Within Groups	1888,791	304	6,213		
	Total	1916,078	308			
Traditional teaching methods/techniques	Between Groups	26,434	4	6,608	,751	,558
	Within Groups	2675,508	304	8,801		
	Total	2701,942	308			
Instructional strategies total	Between Groups	220,670	4	55,168	1,071	,371
	Within Groups	15652,035	304	51,487		
	Total	15872,706	308			

As shown in the Table 4.20, the test results are non-significant regarding teaching experience for the instructional strategies component of SCL $F(4,304)= 1.071$, $p = .371>.05$) including its factors "considering student characteristics in choosing strategies" $F(4,304) = 3.216$, $p = .057>.05$), "independent learning strategies" $F(4,304) = 1.098$, $p = .358>.05$) and "traditional teaching methods/techniques" $F(4,304) = .751$, $p = .558>.05$).

c) Distribution of Power

Regarding the distribution of power component of SCL, firstly the results regarding the mean scores and standard deviations of teachers with different teaching experience were calculated. The results are given in Table 4.21.

Table 4.21

The results of descriptive statistics regarding teachers' use of SCL depending on teaching experience for the distribution of power component

Distribution of power	Teaching experience	N	M	SD	SE
Participatory approach	1-5 years	67	9,57	3,94	,48
	6-10 years	74	9,34	3,48	,40
	11-15 years	66	9,62	3,87	,48
	16-20 years	57	9,65	3,94	,52
	20-above	45	11,29	3,31	,49
	Total	309	9,79	3,76	,21
Authoritarian approach	1-5 years	67	4,37	2,53	,31
	6-10 years	74	5,19	2,59	,30
	11-15 years	66	4,20	2,45	,30
	16-20 years	57	3,63	2,32	,31
	20-above	45	4,40	2,39	,35
	Total	309	4,40	2,51	,14
Guiding approach	1-5 years	67	7,27	1,62	,20
	6-10 years	74	7,04	1,56	,18
	11-15 years	66	6,64	1,47	,18
	16-20 years	57	6,97	1,98	,26
	20-above	45	7,20	1,70	,25
	Total	309	7,01	1,66	,09
Distribution of power total	1-5 years	67	21,21	6,15	,75
	6-10 years	74	21,57	4,79	,56
	11-15 years	66	20,45	5,02	,62
	16-20 years	57	20,24	5,60	,74
	20-above	45	22,89	3,48	,52
	Total	309	21,20	5,20	,29

As it is displayed in Table 4.21, teachers with different teaching experience have close but different mean scores regarding distribution of power component of SCL.

The results of the Levene test were found to be non-significant for the distribution of power component F(4, 304) = 2.26, p = .06 and for its three factors "participatory approach" F(4, 304) = .26, p = .90, "authoritarian approach" F(4, 304) = .51, p = .73, "guiding approach" F(4, 304) = 2.13, p = .07.

One-way ANOVA was conducted to find out whether there are significant differences in mean scores of teachers' with respect to teaching experience for the distribution of power component. The results of one-way ANOVA are displayed in Table 4.22

Table 4.22

The results of one-way ANOVA for mean difference in teachers' use of SCL depending on teaching experience for the distribution of power component

Distribution of power		**SS**	***df***	**MS**	**F**	***p***
Participatory approach	Between Groups	122,568	4	30,642	2,201	,069
	Within Groups	4232,759	304	13,924		
	Total	4355,327	308			
Authoritarian approach	Between Groups	82,513	4	20,628	3,383	*,010
	Within Groups	1853,526	304	6,097		
	Total	1936,039	308			
Guiding approach	Between Groups	15,503	4	3,876	1,405	,232
	Within Groups	838,445	304	2,758		
	Total	853,948	308			
Distribution of power total	Between Groups	226,954	4	56,738	2,129	,077
	Within Groups	8100,606	304	26,647		
	Total	8327,560	308			

*The mean difference is significant at the .05 level.

As it is seen in the Table 4.22, the test results were non-significant for the distribution of power component F(4,304)= 2.129, *p* = .077>.05), including its

factors "participatory approach" F(4,304)= 2.201, p = .069>.05) and "guiding approach" F(4,304)= 1.405, p = .232>.05). However, the test was found to be significant for the authoritarian approach factor F(4,304)= 3.383, p = .010<.05). This means that, there are significant differences in teachers' use of the authoritarian approach with respect to teaching experience. As post hoc analyses to the univariate ANOVA, Sheffe test was conducted to evaluate pairwise differences among the means. The result of the Sheffe test for the authoritarian approach is displayed in Table 4.23.

Table 4.23

The result of Sheffe Test for the authoritarian approach factor

Distribution of power	(I) Experience	(J) Experience	Mean Difference (I-J)	SE	p	95% CI	
Authoritarian Approach	1-5 years	6-10 years	-,83	,45	,430	-2,11	,48
		11-15 years	,18	,43	,997	-1,15	1,50
		16-20 years	,74	,44	,596	-,64	2,12
		20-above	-,03	,47	1,000	-1,50	1,45
	6-10 years	1-5 years	,82	,42	,430	-,47	2,11
		11-15 years	,99	,42	,231	-,30	2,29
		16-20 years	1,56(*)	,43	*,013	,21	2,91
		20-above	,79	,47	,582	-,66	2,23
	11-15 years	1-5 years	-,18	,43	,997	-1,50	1,15
		6-10 years	-,99	,42	,231	-2,29	,30
		16-20 years	,56	,45	,808	-,82	1,95
		20-above	-,20	,48	,996	-1,68	1,28
	16-20 years	1-5 years	-,74	,44	,596	-2,12	,64
		6-10 years	-1,56(*)	,43	*,013	-2,91	-,21
		11-15 years	-,56	,45	,808	-1,95	,89
		20-above	-,77	,49	,657	-2,29	,76
	20-above	1-5 years	,03	,47	1,000	-1,45	1,50
		6-10 years	-,79	,47	,582	-2,23	,66
		11-15 years	,20	,48	,996	-1,28	1,68
		16-20 years	,77	,49	,657	-,76	2,29

*The mean difference is significant at the .05 level.

As Table 4.23 reveals, there is significant difference between teachers with 6-10 and 16-20 years of experience (p = .013) in their use of the authoritarian approach factor of distribution of power scale. According to the results, the teachers with 6-10 years of experience (M=5.19) use authoritarian approach more than teachers with 16-20 years of experience (M=3.63). The standardized effect size index, d (Cohen, 1992), was found 0.63 pointing towards a high positive effect.

d) Teacher and student roles

With respect to the teacher and student roles, firstly the results including the mean scores and standard deviations of teachers with different teaching experience were calculated. The results are given in Table 4.24.

Table 4.24

The results of descriptive statistics regarding teachers' use of SCL depending on teaching experience for the teacher and student roles component

Teacher and student roles	Teaching experience	N	M	SD	SE
Student-centred student roles	1-5 years	67	17,57	3,63	,44
	6-10 years	74	17,07	3,62	,42
	11-15 years	66	16,07	3,66	,45
	16-20 years	57	17,02	4,01	,53
	20-above	45	16,98	3,07	,46
	Total	309	16,94	3,64	,21
Traditional teacher roles	1-5 years	67	7,00	3,76	,46
	6-10 years	74	7,89	4,42	,51
	11-15 years	66	6,89	3,16	,39
	16-20 years	57	6,21	3,91	,52
	20-above	45	6,78	3,48	,52
	Total	309	7,01	3,82	,23
Student-centred teacher roles	1-5 years	67	14,63	3,12	,38
	6-10 years	74	15,07	2,76	,32
	11-15 years	66	14,36	2,78	,34
	16-20 years	57	14,79	3,43	,45
	20-above	45	15,44	2,52	,37
	Total	309	14,82	2,94	,17
Teacher and student roles total	1-5 years	67	39,19	7,64	,93
	6-10 years	74	40,03	6,47	,75
	11-15 years	66	37,33	5,34	,66
	16-20 years	57	38,02	7,59	1,00
	20-above	45	39,20	4,77	,71
	Total	309	38,78	6,57	,37

As it is displayed in Table 4.24, teachers with different teaching experience have close but different mean scores regarding teacher and student roles component of SCL.

The results of the Levene test were found to be non-significant for the teacher and student roles component $F(4, 304) = 2.39$, $p = .06$, and also for its three factors "student-centred student roles" $F(4, 304) = .91$, $p = .46$, "traditional teacher roles" $F(4, 304) = 2.23$, $p = .07$ and "student-centred teacher roles" $F(4, 304) = 2.17$, $p = .07$.

One-way ANOVA was conducted to find out whether there are significant differences in teachers' mean scores in their use of SCL regarding the teacher and student roles component. The results of one-way ANOVA are displayed in Table 4.25.

Table 4.25

The results of one-way ANOVA for difference in teachers' use of SCL depending on teaching experience for the teacher and student roles component

Teacher and student roles		**SS**	***df***	**MS**	**F**	***p***
Student-centred student roles	Between Groups	77,260	4	19,315	1,464	,213
	Within Groups	4011,691	304	13,196		
	Total	4088,951	308			
Traditional teacher roles	Between Groups	97,304	4	24,326	1,680	,155
	Within Groups	4402,644	304	14,482		
	Total	4499,948	308			
Student-centred teacher roles	Between Groups	38,372	4	9,593	1,107	,353
	Within Groups	2634,191	304	8,665		
	Total	2672,563	308			
Teacher and student roles total	Between Groups	305,763	4	76,441	1,789	,131
	Within Groups	12987,273	304	42,721		
	Total	13293,036	308			

As Table 4.25 displays, the results of one-way ANOVA found to be non-significant regarding teaching experience for the teacher and student roles component of SCL $F(4,304) = 1.789$, $p = .131>.05$), including its factors "student-centred student roles" $F(4,304) = 1.464$, $p = .213>.05$), "traditional teacher roles" $F(4,304) = 1.680$, $p = .155>.05$) and "student-centred teacher roles" $F(4,304) = 1.107$, $p = .353>.05$).

e) Assessment

With respect to the assessment component, firstly the mean scores and standard deviations of teachers with different teaching experience were calculated. The results are given in Table 4.26.

Table 4.26

The results of descriptive statistics regarding teachers' use of SCL depending on teaching experience for the assessment component

Assessment	Teaching experience	N	M	SD	SE
Alternative assessment methods	1-5 years	67	15,37	4,47	,54
	6-10 years	74	14,22	4,31	,50
	11-15 years	66	14,80	4,61	,57
	16-20 years	57	15,30	5,27	,70
	20-above	45	16,33	3,36	,50
	Total	309	15,10	4,50	,26
Providing feedback	1-5 years	67	14,89	2,74	,33
	6-10 years	74	14,58	3,02	,35
	11-15 years	66	13,59	3,18	,39
	16-20 years	57	14,03	3,09	,41
	20-above	45	13,89	2,98	,44
	Total	309	14,24	3,025	,17
Assessment total	1-5 years	67	30,27	6,07	,74
	6-10 years	74	28,80	5,75	,67
	11-15 years	66	28,40	6,87	,84
	16-20 years	57	29,33	7,05	,93
	20-above	45	30,22	5,51	,82
	Total	309	29,34	6,29	,36

As it is displayed in Table 4.26, teachers with different teaching experience have close but different mean scores regarding distribution of power component of SCL.

The results of the Levene test were reported to be non-significant for the assessment component $F(4, 304) = 1.93$, $p = .11$ and its two factors "alternative assessment methods" $F(4, 304) = 1.56$, $p = .18$ and "providing feedback" $F(4, 304) = .43$, $p = .78$.

One-Way Analysis of Variance (one-way ANOVA) was conducted to find out whether there are significant differences in teachers' mean scores regarding teaching experience for the assessment component. The results of one-way ANOVA are displayed in Table 4.27.

Table 4.27

The results of one-way ANOVA for mean difference in teachers' use of SCL depending on teaching experience for the assessment component

Assessment		**SS**	***df***	**MS**	**F**	***p***
Alternative assessment methods	Between Groups	139,309	4	34,827	1,733	,143
	Within Groups	6110,581	304	20,101		
	Total	6249,890	308			
Providing feedback	Between Groups	73,143	4	18,286	2,025	,091
	Within Groups	2744,611	304	9,028		
	Total	2817,754	308			
Assessment total	Between Groups	173,671	4	43,418	1,097	,358
	Within Groups	12031,326	304	39,577		
	Total	12204,997	308			

As it is shown in Table 4.27, the results of one-way ANOVA found to be non-significant for the assessment component of SCL F(4,304) = 1.097, p = .358>.05), including its factors "alternative assessment methods" F(4,304) = 1.733, p = .143>.05) and "providing students feedback" F(4,304) = 2.025, p = .091>.05).

4.2.4 Pedagogical knowledge and the use of SCL

Thirdly, it was tried to explore the relationship between the use of SCL and the pedagogical knowledge. For this purpose, firstly the mean scores and standard deviations obtained for each component of SCL, namely motivation, instructional strategies, teacher and student roles, distribution of power and assessment were calculated. Independent-Samples *t* test was conducted to assess whether high school teachers use of SCL varies depending on their pedagogical knowledge. The independent variable, pedagogical knowledge, included two levels: teachers who are graduates of teacher education programs and teachers who are graduates of other programs but have a teaching certificate. The dependent variable, on the other hand,

is the implementation of five main components of SCL. The results of the independent-samples *t* test for each component are presented below.

a) Motivation

The results of independent-samples *t* test for the motivation scale are displayed in Table 4.28.

Table 4.28

Independent-samples t test results for mean difference in teachers' use of SCL depending on their pedagogical knowledge for the motivation component

Motivation	**Pedagogy**	**N**	**M**	**SD**	***t***	***p***
Creating motivating conditions	Teacher education program	155	22,87	3,78	-1,554	,121
	Teaching certificate program	142	23,54	3,73		
Motivating students through involving them in decision making process	Teacher education program	155	6,36	2,08	2,043	**,042***
	Teaching certificate program	142	5,85	2,21		
Total	Teacher education program	155	29,24	5,04	-,294	,769
	Teaching certificate program	142	29,41	4,90		

*The mean difference is significant at the .05 level.

As it is seen in Table 4.28, the test was non-significant for the motivation scale $t(295) = -.29$, $p = .77$ and its factor "creating motivating conditions" $t(295) = -1.55$, $p = .21$. However, the test was found to be significant for the factor of "motivating students through involving them in decision-making process" $t(295) = 2.04$, $p = .04$ indicating a difference between teachers in their use of this factor. This finding demonstrates that the teachers who are graduates of a teacher education program (M = 6.36) motivate students through involving them in decision-making process more, as opposed to teachers who hold a teaching certificate (M = 5.85). The standardised effect size index, d, was 0.23 indicating towards a medium positive effect.

b) Instructional strategies

The results of independent-samples *t* test for the instructional strategies scale are displayed in Table 4.29.

Table 4.29

Independent-samples t test results for difference in teachers' use of SCL depending on their pedagogical knowledge for the instructional strategies component

Instructional Strategies	**Pedagogy**	**N**	**M**	**SD**	***t***	***p***
Considering student characteristics in choosing strategies	Teacher education program	155	25,19	4,89	-,314	,753
	Teaching certificate program	142	25,36	4,50		
Independent learning strategies	Teacher education program	155	10,72	2,56	-1,496	,136
	Teaching certificate program	142	11,15	2,39		
Traditional teaching methods/techniques	Teacher education program	155	7,33	2,88	-2,226	**,027***
	Teaching certificate program	142	8,08	2,90		
Total	Teacher education program	155	43,23	7,15	-1,620	,106
	Teaching certificate program	142	44,58	7,22		

*The mean difference is significant at the .05 level.

As it is given in Table 4.29, the test results were found to be non-significant for the instructional strategies scale $t(295) = -1.62$, $p = .11$ including its two factors "considering student characteristics in choosing strategies" $t(295) = .31$, $p = .75$ and *"independent learning strategies"* $t(295) = -1.47$, $p = .14$. However, the test result was reported to be significant for the factor of "traditional teaching methods/techniques" $t(295) = -2.23$, $p = .03$. The result revealed that the teachers who have teaching certificates ($M = 8.08$) implement traditional teaching

methods/techniques more than the teachers who graduated from teacher education programs (*M* = 7.33). The standardised effect size index, d, was 0.25 pointing towards a medium negative effect.

c) Distribution of power

The results of independent-samples *t* test for the distribution of power scale are displayed in Table 4.30.

Table 4.30

Independent-samples t test results for difference in teachers' use of SCL depending on their pedagogical knowledge for the distribution of power component

Distribution of Power	**Pedagogy**	**N**	**M**	**SD**	**T**	***p***
Participatory approach	Teacher education program	155	10,25	3,70	2,246	**,025***
	Teaching certificate program	142	9,26	3,85		
Authoritarian approach	Teacher education program	155	3,95	2,29	-3,626	**,000****
	Teaching certificate program	142	4,99	2,64		
Guiding approach	Teacher education program	155	7,03	1,74	,235	,815
	Teaching certificate program	142	6,99	1,61		
Total	Teacher education program	155	21,24	5,00	-,013	,990
	Teaching certificate program	142	21,25	5,56		

*The mean difference is significant at the .05 level.
**The mean difference is significant at the .01 level.

As it is shown in Table 4.30, the test was found to be non-significant for the distribution of power scale *t*(295) = -.01, *p* = .99 including its factor "guiding approach" *t*(295) =.23, *p* = .81. However, the test was found significant for the "*participatory approach"* factor *t*(295) = 2.25, *p* = .02. According to the results, the graduates of teacher education programs (*M* = 10.25) implement participatory approach more than teaching certificate holders (*M* = 9.26). The standardised effect size index, d, was 0.26 pointing towards a medium positive effect. With respect to

the "authoritarian approach" factor, the test result was also found to be significant $t(295) = -3.63, p = .000$. The results demonstrate that the teaching certificate holders ($M = 4.99$) implement authoritarian approach more than teacher education program graduates ($M = 3.95$). The standardised effect size index, d, was 0.42 indicating a medium negative effect.

d) Teacher and student roles

The results of independent-samples *t* test for the teacher and student roles scale are displayed in Table 4.31

Table 4.31

Independent-samples t test results for difference in teachers' use of SCL depending on their pedagogical knowledge for the teacher and student roles component

Teacher and student roles	**Pedagogy**	**N**	**M**	**SD**	***t***	***p***
Student-centred student roles	Teacher education program	155	17,18	3,73	,766	,444
	Teaching certificate program	142	16,86	3,49		
Traditional teacher roles	Teacher education program	155	6,65	3,68	-1,974	**,049***
	Teaching certificate program	142	7,53	4,03		
Student-centred teacher roles	Teacher education program	155	14,77	2,98	-,368	,713
	Teaching certificate program	142	14,90	2,96		
Total	Teacher education program	155	38,60	6,43	-,902	,368
	Teaching certificate program	142	39,29	6,73		

*The mean difference is significant at the .05 level.

As it is displayed in Table 4.31, the test results were reported to be non-significant for the teacher and student roles scale $t(295) = -.90$, $p = .37$ including its two factors "student roles" $t(295) = -.77$, $p = .44$ and "teacher roles" $t(295) = -.37$, $p = .71$ factors. However, the test was found to be significant for the "traditional teacher roles" factor $t(295) = -1.97$, $p = .04$. The results indicate that teacher certificate holders ($M = 7.53$) perform traditional teacher roles more compared to teacher

education program graduates (M = 6.65). The standardised effect size index, d, was 0.22 demonstrating a medium negative effect.

e) Assessment

The results of independent-samples *t* test for the assessment scale are displayed in Table 4.32.

Table 4.32

Independent-samples t test results for mean difference in teachers' use of SCL depending on their pedagogical knowledge for the assessment component

Assessment	**Pedagogy**	**N**	**M**	**SD**	***t***	***p***
Alternative assessment methods	Teacher education program	155	15,43	4,54	1,422	,156
	Teaching certificate program	142	14,68	4,53		
Providing feedback	Teacher education program	155	14,29	2,89	-,036	,971
	Teaching certificate program	142	14,30	3,11		
Total	Teacher education program	155	29,72	6,15	1,010	,313
	Teaching certificate program	142	28,99	6,41		

Finally, as it can be seen in Table 4.32, the test results were non-significant for the assessment scale $t(295) = 1.01$, $p = .31$ including its two factors "alternative assessment methods" $t(295) = 1.42$, $p = .15$ and " providing feedback" $t(308) = -.04$, $p = .97$.

4.2.5 Discussion

Another aim of this study was to investigate whether the teachers' use of SCL varies depending on their characteristics including gender, subject taught, teaching experience and pedagogical knowledge. Regarding gender no significant difference was found between male and female teachers in their use of SCL in any of the scales. This finding contradicts with a study conducted by Lammers and Murphy (2002) in

which they report that male instructors tend to lecture more compared to female instructors in classroom practices.

Similarly, the results revealed no significant differences regarding subject taught and the use of SCL. This finding is in line with the studies of Kember and Gow (1994) and Stes et al. (2007) in which they found no significant differences between teachers' approaches to teaching and subject taught. However, there are also studies indicating significant differences (Singer, 1996; Lueddeke, 2003; Lindblom-Ylanne et al., 2006). The results of those studies indicated that teachers teaching "hard disciplines" such as maths, chemistry and biology tend to use teacher-focused approach more compared to teachers teaching "pure soft" and "applied soft" disciplines like history and education.

With respect to the teaching experience, there were no significant differences except for the teachers with 6-10 and 16-20 years of experience. According to the results, teachers with 6-10 years of experience use *authoritarian approach* more than teachers with 16-20 years of experience. *Authoritarian approach* is related to involving students in decision making process. Therefore, it can be said that more experienced teachers give their students more say in classroom teaching and learning compared to less experienced teachers. As Doyle (2008) states, one of the common concerns teachers have with respect to the use of SCL include the fear of losing control of the class and not knowing what to do if students make poor decisions. This finding may indicate that less experienced teachers have more concerns regarding sharing power in their classrooms. This result contradicts with what Stes et al. (2007)

found in their same study. Their research findings indicated no significant difference between teachers' approaches to teaching and teaching experience.

Pedagogical knowledge, on the other hand, seemed to have an important effect on the perceived use of SCL. The results demonstrated that the teachers who are graduates of a teacher education program perceived to implement SCL more compared to teachers who are graduates of a teaching certificate program. According to the results, *motivating students through involving them in decision making process* and the *participatory approach* which are both related to the distribution of power in class were reported to be used more by teacher education program graduates. On the other hand, the *authoritarian approach*, *traditional teacher roles* and *traditional teaching methods/techniques*, were reported to be used more by the teaching certificate program graduates. The results of descriptive statistics also demonstrated that teachers are heterogeneous with respect to the use of those factors. Therefore, the findings also support each other. The results may indicate that teacher education program graduates are better equipped with respect to the implementation of SCL in classroom teaching and learning.

4.3 Barriers that Hinder the Effective Use of SCL in High Schools

The final research question of the study sought to explore common potential barriers that hinder the implementation of SCL in high schools in North Cyprus. The data to answer this research question gathered through the use of semi-structured interviews with 33 high school teachers teaching in general high schools across North Cyprus. The data were analysed through content analysis where emerging themes and categories were identified. The findings of this study demonstrated a complicated web of factors that were reported to be as main barriers in adopting SCL. The main

themes that emerged from the data are “student profile”, “curriculum”, “teachers”, “learning resources”, “parents” and “structure of classrooms”. The findings obtained to a greater extent are in line with the results reported in previous studies found in the literature.

The themes and categories that were reported to be as barriers that hinder the use of SCL in high schools are elaborated below:

Student profile. Student profile was reported to be the most important barrier impeding the use of SCL. The categories emerged from this theme are “educational background”, “motivation” and “heterogeneous classrooms”.

Majority of teachers (30) remarked that the students in high schools are not ready to adopt SCL because of their traditional educational background. As teachers stated, most of their students are passive recipients of knowledge who are dependent on teachers in the teaching and learning process. They consider teacher as the only source of information and thus expect to learn everything from him or her. They are far from being autonomous learners lacking self-study and reflective learning strategies. They adopt surface approach to learning that focuses on memorization. According to the teachers, because of their educational background and the way they approach teaching and learning, adopting student-centred roles is too challenging for the students. This finding is in line with previous studies in the literature **(**Attard, 2010; Blumberg, 2009; Doyle, 2008; Felder and Brent, 2006; Güneş and Baki, 2011; Mangan, 2011; Raselimo and Wilmot, 2013; Van Aswegen and Dreyer, 2004; Thanh, 2010).

There was absolute unanimity among teachers' views that most students are demotivated in the teaching and learning process. As stated by the teachers, majority of students are unwilling to take active role in their learning and tend to be passive in class most of the time. They fail to do homework regularly and they come to class without making necessary revisions. Teachers also stressed the difficulty of providing external stimuli in motivating their students to be more active learners in the teaching and learning process. Melis mentioned the motivation as a problem in Turkish language and literature course in the following way:

> They usually get bored in the lesson. They find learning grammar rules unnecessary. 'We can speak Turkish why are we learning all these rules. How are we going to use these in daily life?' they ask.

Significant number of teachers (29) stressed the difficulty of motivating students. Previous studies also reported student demotivation as an impediment in the implementation of SCL **(**Altinyelken, 2011; Güneş and Baki, 2011; Yilmaz, 2009**).** As some teachers pointed out, the reasons of their demotivation may be related to the fact that all students are promoted to upper levels irrespective of their performance in class. According to the regulations in Turkish Cypriot education system, only students who fail all courses are asked to repeat a grade. Moreover, student progress is based on grades they obtain from written tests and their performance in other class activities is usually not taken into consideration. This may be another reason why most students prefer to be passive in class.

Having a heterogeneous class was also reported to be a challenge that prevents the use of SCL. As teachers remarked they find it hard to address different needs, abilities and interest of their students within the same class. According to the

teachers, the more the students are, the harder it gets to cater for the differences. Therefore, teachers of large classes complained more about this issue. This finding may indicate that teachers lack the necessary knowledge for the implementation of SCL as they do not know how to approach student differences in class. SCL requires teachers to consider different needs, abilities and interests of individual students. As stated in the literature, teacher should use variety of methods, materials and topics in class to cater for student differences in class (Weimer, 2002).

Curriculum. Curriculum was reported to be an important factor inhibiting the use of SCL. The categories emerged from this theme were "syllabus", "assessment system", "nature of course books" and "subject matter taught". In fact, all these categories are interrelated with each other.

Majority of teachers complained about the syllabus being overloaded and fixed. According to the teachers there are usually too many topics to be covered in the syllabus. Moreover, the syllabus is fixed so it does not give them the flexibility to organize the topics based on the needs of their students. Teachers find student-centred teaching methods time consuming so they feel the need to lecture in order to be able to complete the given topics in due time. Most teachers remarked that they are not happy about the number of topics to be covered but they feel obliged to do so due to exams. A Turkish language and literature teacher Melis reported that:

> ...as our syllabus is too loaded we have to do teaching. The syllabus does not allow us to extend topics over a time or give projects. I cannot say that I can fully implement SCL. We sometimes make students find things out, we give homework. I cannot do group work activities in class because it takes time and I only have 40 minutes to cover a topic. The syllabus is sent from Turkey. We are always behind the schedule. We cannot cover the whole book because we only have

> three lessons per week. I wish the syllabus was more suitable for SCL but it's not.

As she stated although she would like to use student-centred methods she cannot because she is restricted by the syllabus and time limits.

Ada, a philosophy teacher, reported syllabus as a problem for students but also pointed out the assessment system:

> When I enter the class they (students) ask me why there are so many topics. Do I do it on purpose? No! I tell them that we have to cover all the topics, it's important because they are going to be responsible for them in the exam.

The teacher is not happy about the number of topics to be covered but she feels obliged to do so due to exams.

As teachers stated, in contrast to the alternative assessment methods used in SCL, student achievement in high schools is usually assessed through the use of written exams. The assessment system used in Turkish Cypriot education system is exam-oriented in which entrance to secondary schools and higher education are determined by nationwide exams. "University entrance exam" being the most important one as it determines the future career of students in high schools. (Yilmaz, 2009). This exam, which is in multiple choice test format traditionally evaluating knowledge acquisition of students (Altinyelken, 2011), is very important as students are selected and placed in universities in Turkey and North Cyprus based on their performance in this exam. Mert, a maths teacher's statement clearly shows how teachers' approach to teaching is affected by this exam:

> In our education system all exams that affect students' lives consist of multiple choice questions. We feel the pressure of preparing our students to those exams. I bring multiple choice questions to my classrooms so that my students will get used to the testing system.

Cenk also emphasized the need to prepare students to the university entrance exam in the following way:

> In the midterm exam I usually ask open ended questions but in the final I mostly use questions previously asked in the university entrance exam. My aim is to prepare students to this exam. Only few students could go to private tutoring institutions.

The syllabus used in high schools was reported to be largely incompatible with the nature of SCL. According to the majority of the teachers (27), the syllabus is overloaded and fixed for all subjects. Therefore, teachers tend to use traditional approach in order to be able to cover all topics in due time. Student-centred methods are not preferred because they are time consuming. This finding is consistent with previous research (Blumberg, 2009; Bolden and Newton, 2008; Brandes and Ginnis, 1986; Gladys, 2012; Mangan, 2011; Raselimo and Wilmot, 2013; Thanh, 2010; Van Aswegen and Dreyer, 2004; Yılmaz, 2009). Moreover, as teachers explained exam-oriented assessment system puts extra pressure making them feel responsible for covering all topics before exams. This finding also supports previous research conducted in the field (Altinyelken, 2011; Bolden and Newton, 2008; Gladys, 2012; Marsh, 2007; Yilmaz, 2009).

With respect to the course book used, there were contradictory opinions. While some teachers agreed that the books are in line with SCL, some others disagreed with that. Melis commented on the course books in the following way:

> The course books are not suitable for SCL. There are activities and projects but to what extent can you use them. There are also research questions but the syllabus is not suitable.

As it can be understood, the teacher was not very sure whether the books are suitable or not. Doğa, a chemistry teacher, on the other hand, stated that the books are not student-centred as they contain history of chemistry and lack enough number of questions. He preferred to have more practice questions in the books. Another Turkish language and literature teacher, Han stated that:

> There are self-evaluation tasks at the end of each unit asking student to evaluate their progress. There are also self-evaluation criteria for homework ...I don't think they are very effective, I believe that exams better serve the aim of highlighting student weaknesses and strengths.

It may be the case that the teacher is not aware of the aim and the importance of self-assessment in the learning process.

Su, teaching Turkish language and literature alluded to the issue accordingly:

> Yes the course books were designed according to SCL. However, the designers should give seminars on how to use them. The Ministry of national education should organize such seminars. Last year, we attended one on the use of 'language and expression' and it was very useful.

Su finds course books student-centred but she emphasizes the need for in-service training for the effective use of the books. This finding about the books brought up a significant issue: the need for in-service training on the use of books. As the data revealed some teachers do not know how to incorporate student-centred assessment methods into the teaching and learning and/or they are not aware of the importance

and the aim of them. This was reflected in a teacher's statement when she said that exams are better serve the aim of highlighting student progress in the teaching and learning process rather than self-assessment criteria found in the course books.

Based on the data, subject matter taught can also be an inhibiting factor. Some teachers reported that some courses cannot be taught through student-centred teaching methods. As teachers remarked, due to nature of some courses such as maths in which there are so many rules that can be best taught through the use of lectures. Few teachers believed that the subject they teach is not appropriate for the use of student-centred teaching and learning methods mainly referring to the discovery learning method. One of the comments directed towards SCL in the literature is that it may work well for social sciences and humanities whereas it may not be effective in teaching well-structured subjects such as science and maths (Feng, 1996 as cited in Santrock, 2001). However, as Attard et al. (2010) argue there may be some differences across different disciplines, particularly between humanities and the sciences. However, this does not inhibit the use of SCL as it consists of a learning philosophy which can be used in both areas. This finding may also show that some teachers do not know how to incorporate SCL in their lessons.

Teachers. The categories in this theme are "conceptions of teaching and learning" and "in-service teacher training programmes".

The data gathered revealed that teachers have traditional conceptions of teaching and learning. As Doruk, an English language teacher, stated:

> An effective teacher is the one who is good at transferring his/her knowledge to students. If you cannot do that you have problems. When presenting topics you should consider them as not knowing anything about the topic because sometimes you may create some gaps between topics. Teacher should give lots of examples and from daily life as well.

The findings of the study demonstrated that majority of teachers considered themselves as the main source of information responsible for student learning. Traditional teaching methods and techniques that include lectures, question and answer, whole class discussion and homework are used extensively with an emphasis on lecturing as the most appropriate teaching method to be used in high schools. Student-centred methods are not preferred as they are considered as time-consuming.

Only few teachers (5) mentioned about discovery learning method but they stated that they rarely use them. Homework, on the other hand, is assigned regularly to individual students with the aim of reinforcing previously covered topics in class. There are also term projects which are given only at the end of the semester. Another finding that supports the use of teacher-centred approach is that most teachers act as authority figures making all decisions in class. Some teachers (12) stated that they cannot trust students as they are too young to make right decisions. Sometimes, some students can be provided with choices, yet, it is mostly the teachers who say the final word.

Based on the findings, it can be said that the way teachers approach to teaching and learning is in line with teacher-centred approach. This may indicate that teachers are not aware of the effectiveness of SCL and/or they lack the knowledge and

competency to utilize student-centred teaching and learning methods in classroom practices.

All these findings draws attention to the importance of in-service teacher training programmes offered to teachers. In fact, most teachers confessed that they are not ready to implement SCL due to lack of sufficient training. In general, there were complaints about the lack of teacher training programs and also the content of in-service teacher training offered. As stated by the teachers, in-service training organized by the Ministry of National Education was not very effective as they mainly focused on the theory rather than practical aspects of the SCL. Literature also highlighted the inadequacy and content of in-service training (Altinyelken, 2011; Gladys et al., 2012; Güneş and Baki, 2011; Mangan, 2011; Struyven, 2010; Yilmaz, 2009).

Learning resources. This theme includes "educational technology", "labs" and "books". As pointed out by some teachers, although there have been improvements with regards to the provision of learning resources that includes technology such as computers and the Internet and also labs and books in schools, they are still insufficient for the effective use of SCL. This finding is in line with previous studies conducted in different educational contexts (Altinyelken, 2011; Güneş and Baki 2011; Guro and Weber, 2010; Schweisfurth, 2011; Thanh, 2010; Yilmaz, 2008).

With respect to computers and Internet, teachers remarked that there is a computer lab with Internet connection in each school. However, teachers' use of the labs is limited as there are many classrooms and they have to make a reservation

beforehand. Therefore, teachers complained about not being able to use the labs whenever they need to. Moreover, due to high number of students in each class, students have to share the computers and this may be frustrating for some students.

Regarding the labs and materials, there are also complaints from teachers. Especially, teachers teaching chemistry complained about the lack of science labs and scarcity of materials needed to undertake experiments. Although there is a lab in some schools, schools' budget is insufficient in financing the cost of materials required. This was considered as one of the biggest challenges that prevent teachers from utilizing the "learning by doing" principle of SCL.

Another concern of the teachers is not having adequate number of books and study materials for students in school libraries. SCL requires students to do research outside the class. This creates a problem for students living in rural parts as they are not provided with such opportunities at home.

Parents. The categories of this theme are "socio - economic background" and "attitudes towards teaching and learning". Some teachers especially the ones teaching in the rural parts of the country reported socio-economic background as an obstacle. According to the data gathered most parents are from low-socio economic families and this has some consequences on students' success in schools. Firstly, as parents themselves are not educated, they are not very good role models to their children. Secondly, most of the families in villages are either farmers or workers; therefore, children are required to help their parents after school and this may have a negative effect on student performance in school.

Another category is the negative attitudes towards teaching and learning. As remarked by some teachers, some parents do not see any benefits of higher education. They have their own jobs and they want their children to do the same job. Therefore finishing high school is sufficient and there is no point in receiving further higher education.

Cenk's statement summarizes the whole point:

> ...socio – economic background of parents is a factor....children don't get motivated as they don't see their parents reading books or doing research. Imagine a mother telling her child "there's no need for you to study, you're going to find a husband and get married anyway". Most parents are farmers or have livestock rearing. They (students) don't do homework most of the time because they also work with their parents.

As reported by the teachers, parents who are mostly from low socio-economic background and have negative attitudes towards teaching and learning can be an inhibiting factor. Moreover, these parents especially the ones in the rural parts may not have learning resources to support children use of student-centred learning methods outside class. As Altinyelken (2011) argued, "Student centred pedagogy favours children whose parents are more involved and concerned with the education of their children, who are more educated and have more cultural capital" (2011, p. 155).

Structure of classrooms. Most teachers described their classrooms as "not fully equipped and furnished", "small" and "overcrowded". Majority of teachers stated that classroom equipment and furnishing are not suitable for SCL. Although some teachers seemed enthusiastic about the use of computers and projectors they cannot

use them as only very few, (mostly, one in each school) are fully equipped with such technology. Besides, furniture in classrooms is not suitable for pair/group work activities in classrooms. Previous studies also reported poor physical conditions of classrooms as an impediment (Altinyelken, 2011; Yilmaz, 2008). Teachers are also concerned about the size of the classrooms and also the number of students in each class. They stated that sometimes they have 35 or 40 students which affect the kind of activities done in class. Classes with more than 30 students were considered as crowded by teachers. As teachers stressed, organizing group work activities is difficult because of limited space and the number of students. Altinyelken (2011) also reported student number as a factor inhibiting the use of SCL stating that conducting such activities would take up considerable time with a large class. As Altinyelken asserts "…student-centred pedagogy could only be effectively implemented in smaller classrooms because student participation, activities and hands-on learning were time-consuming and increased demands on teacher attention" (2011, p. 150).

4.3.1 Discussion

One of the aims of this study was to explore the issues that hinder the implementation of SCL in teaching and learning in high schools in North Cyprus. The research findings of this study to a greater extent are in line with prior research studies conducted in other parts of the world. The common barriers identified by the teachers included "student profile", "curriculum", "teachers", "learning resources", "teacher education programs", "parents and classrooms". The data collected for this study clearly demonstrated that SCL is not implemented in most aspects in schools in North Cyprus due to various barriers as reported by the teachers.

Student profile was reported to be the most important barrier impeding the use of SCL in high schools. Students in high schools were reported to be from traditional educational backgrounds who are mostly demotivated to take initiative in the teaching and learning process. Having a heterogeneous class was also reported as another barrier.

Curriculum used in high schools was found to be another important impediment in adopting SCL. Due to the nature of syllabus which was reported to be overloaded and fixed, student-centred methods are not preferred to be used as they take considerable amount of classroom time. Moreover, they are not considered as very effective in preparing students to nationwide exams which consist of multiple choice questions. With respect to the use of teaching methods, lecturing was reported to be used extensively in all subjects. In terms of assessment methods, student success is mostly evaluated through paper and pencil tests through midterm and final exams. Homework and active participation of students are considered but not regarded as very important when it comes to assigning a grade to students. Alternative assessment methods such as portfolio that focus on the process rather then product are not included in the assessment system. Regarding the suitability of course books, there were contradictory findings. There were also teachers who thought that the subject they teach is not compatible to the use of SCL.

Most teachers have traditional conceptions of teaching and learning. Teachers consider themselves as the main source of information responsible for student learning. Teachers also act as an authority figure in the teaching and learning process making all the decisions. Students are mostly free to express their opinions in class

and sometimes they are provided with options. Yet, it is the teacher who says the final word as students are not regarded as mature enough to make right decisions with respect to their learning. Inadequacy and the content of teacher training were also emphasized as an important barrier as significant number of teachers remarked that they lacked the necessary skills and knowledge to implement SCL in their classrooms.

Learning resources that include educational technology, labs and books were reported to be insufficient in high schools. Schools' budget is not sufficient to finance the cost of materials needed to undertake some activities.

Some parents can also pose problems in the implementation SCL. Parents from low socio-economic background and parents who have negative attitudes towards teaching and learning can affect the use of SCL in a negative way.

Structure of classrooms creates a challenge for teachers. According to teachers, the classrooms are not fully equipped and furnished. Moreover, they are small and mostly overcrowded with more than 30 students in each class.

Chapter 5

CONCLUSION

In this chapter, an overview of the study that includes the background of the problem, methodology and data analysis are presented and the results drawn from the findings obtained from the study are highlighted. Recommendations are also made to promote the use of SCL in classroom teaching and learning in schools in North Cyprus.

5.1 Summary

Recently, there is an endevour to adopt student-centred learning (SCL) in schools aiming to increase the effectiveness of instruction provided to students. Current research have already demonstrated that SCL is a more effective teaching and learning approach compared to traditional teaching leading to the use of deep approach to learning, increasing the acqusition and retention of knowledge and also the motivation to learn. Today, the adoption of SCL is considered as the biggest paradigm shift in education. Hence, schools at all levels are expected to implement SCL effectively and efficiently in the teaching and learning process.

SCL has been implemented in schools in North Cyprus since 2005-2006 academic year. However, the extent to which SCL is implemented and the potential barriers that hinder the use of SCL in schools is an under-researched area in North Cyprus. As teachers play the key role in the implementation of SCL in classroom practices,

exploring their perceptions and opinions would yield the necessary data in examining the use of SCL in classroom practices in schools.

The purpose of this study is to examine the extent to which SCL is implemented in high schools in North Cyprus regarding the five main components of SCL namely, motivation, instructional strategies, distribution of power and assessment based on teachers' perceptions and opinions and further explore whether teachers' use of SCL vary with respect to their characteristics that included gender, subject taught, teaching experience and pedagogical knowledge. This study also aims to identify the barriers that hinder the effective use of SCL in general high schools in North Cyprus.

The study employed mixed methods design in which both quantitative and qualitative data were collected through the use of sequential explanatory design in two different phases. Phase one consisted of quantitative research that included the administration of student-centred learning inventory (SCLI) and phase two, on the other hand, included qualitative research that consisted of one-to-one semi-stuctured in-depth interviews with teachers.

The population of the study is 460 teachers teaching in general high schools across North Cyprus. The sample included 309 teachers teaching in 11 high schools. The research was conducted in 2010-2011 academic year.

Two different data collection tools Student-Centred Learning Inventory (SCLI) and Student-Centred Learning Interview form (SCLIF) were used to collect the necessary data for the study. The SCLI was used to investigate teachers' perceived use of SCL and further explore whether their perceptions vary with respect to gender, subject

taught, teaching experience and pedagogical knowledge. The SCLI consisted of five scales that include motivation, instructional strategies, distribution of power, teacher and student roles and assessment representing five main components of SCL. Expert opinion and pilot study were done to ensure the content validity of each scale. Furthermore, necessary statistical analysis was conducted to ensure the construct validity and the reliability of each scale. The results of the analysis revealed that the scales were deemed to be valid and reliable to be used in the study. The Cronbach Alpha internal consistency values for the scales ranged from 0.70 to 0.83. The motivation scale consisted of 8 items, instructional strategies 13 items, teachers' and students' roles 13 items, distribution of power 8 items and finally assessment scale 9 items. The items in the scales were presented on a 6- point Likert scale ranging from 0 to 5 where (0) refers to never, (1) almost never, (2) seldom, (3) frequently, (4) almost always and (5) always.

SCLIF on the other hand was administered to generate thick descriptions of teachers' opinions on their use of SCL and also to identify the potential barriers that impede the use of SCL in classroom practices in schools. SCLIF was also developed by the researcher considering the items presented on each scale of the inventory. Content validity of the SCLIF was ensured through receiving expert opinion and conducting a pilot study. The SCLIF consisted of 25 questions; 4 for the motivation, 4 for the instructional strategies, 4 for the teacher and student roles, 5 for distribution of power, 5 for the assessment component and 3 for identifying the barriers that inhibit the use of SCL in high schools.

In analyzing the data, in order to find out teachers' perceived use of SCL in general high schools, descriptive statistics were applied and means and standard deviations for each scale were calculated. Regarding how high school teachers' implementation vary with respect to certain independent variables gender, subject area, teaching experience and pedagogical knowledge t-test and one-way ANOVA tests were administered. T-test was used to find out whether teachers use of SCL vary with respect to gender and pedagogical knowledge. Regarding the subject area and teaching experience one-way ANOVA was administered. In addition to that, in order to further explore teachers' opinions on their use of SCL and also to identify the potential barriers that hinder the use of SCL in schools, content analysis that consisted of 'data reduction', 'data display' and 'conclusion drawing/verification' stages was utilized.

5.2 Results

According to the data gathered based on teachers' perceptions and opinions regarding the use of SCL in high schools in North Cyprus the following results are drawn from the study:

- With repect to the *motivation* component, as well as using intrinsic motivators, extrinsic motivators mainly the use of "reward" and "punishment" are very common in the teaching and learning process. Moreover, most teachers use exams as a tool to increase the motivation level of their students. Only few teachers provide students with choice and control in their learning.

- Regarding *instructional strategies*, student-centred teaching methods and techniques are not implemented in classroom teaching and learning as they were considered to be time consuming and not very effective in preparing students to exams. Lecturing was reported to be the most widely used teaching method in high schools. Moreover, traditional methods and techniques that include lectures, question and answer and individual work are being used extensively in classroom practices. Only few teachers were found to use SCL methods and techniques such as project-based learning and discovery learning in their classrooms.

- The *distribution of power* component of SCL is the least frequently used component of all. The teachers were found to be the exact authorities making all the decisions in the teaching and learning process. Moreover, significant number of teachers does not involve students in decision making process. Only some teachers provide students with choices, yet it is mostly the teachers who say the final word. The students are not trusted to be involved in the decision making process.

- Regarding the *teacher and students roles* component, most teachers and students mainly possess traditional roles and responsibilities. Teachers consider themselves as the main source of information responsible for student learning. Teachers also act as an authority figure in the teaching and learning process making all the decisions. Students in high schools were reported to be from traditional educational backgrounds who tend to be passive and demotivated to take initiative in the teaching and learning process.

- In terms of the *assessment* component, student success is mostly evaluated through paper and pencil tests through midterm and final exams. Homework and active participation of students are considered but not regarded as very important when it comes to assigning a grade to students. Alternative assessment methods such as portfolio that focus on the process rather than product are not included in the assessment system.

- Regarding assessing whether teachers perceived use of SCL vary with respect to their characteristics, no significant differences were found in the frequency level of teachers' use of SCL related to the gender and subject taught. Therefore, gender and subject taught do not seem to have an impact on the implementation of SCL.

- With respect to the teaching experience, there is variability among teachers in their useof SCL. Teachers with 6-10 years of experience seem to use the *authoritarian approach* more than teachers with 16-20 years of experience.

- With regards to pedagogical knowledge, the teachers who are graduates of teacher education programs seem to implement some of the components and factors of SCL more than the teachers with a teaching certificate.The teacher education program graduates implement the *participatory approach* and they *motivate students through involving them in decision making process* more than the teachers with teaching certificates. On the other hand, the teaching certificate holders use *traditional teaching methods* and *authoritarian approach* more than the teacher education program graduates. Besides,

traditional teacher roles are being performed more by the teaching certificate holders. As a result, it can be said that pedagogical knowledge affects the implementation of SCL in classroom teaching and learning.

- Student profile was reported to be the most important barrier impeding the use of SCL in high schools. Students in high schools were reported to be from traditional educational backgrounds who are mostly demotivated to take initiative in the teaching and learning process. Having a heterogeneous class was also reported as another barrier.

- Curriculum used in high schools was found to be another important impediment in adopting SCL. Due to the nature of syllabus which was reported to be overloaded and fixed, student-centred methods are not preferred to be used as they take considerable amount of classroom time. Moreover, they are not considered as very effective in preparing students to nationwide exams which consist of multiple choice questions. With respect to the use of teaching methods, lecturing was reported to be used extensively in all subjects. In terms of assessment methods, student success is mostly evaluated through paper and pencil tests through midterm and final exams. Homework and active participation of students are considered but not regarded as very important when it comes to assigning a grade to students. Alternative assessment methods such as portfolio that focus on the process rather then product are not included in the assessment system. Regarding the suitability of course books, there were contradictory findings. There were

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- Learning resources that include educational technology, labs and books were reported to be insufficient in high schools. Schools' budget is not sufficient to finance the cost of materials needed to undertake some activities.

- Some parents can also pose problems in the implementation SCL. Parents from low socio-economic background and parents who have negative attitudes towards teaching and learning can affect the use of SCL in a negative way.

- Structure of classrooms creates a challenge for teachers. According to teachers, the classrooms are not fully equipped and furnished. Moreover, they are small and mostly overcrowded with more than 30 students in each class.

As a result of all the findings obtained from the study, it can be concluded that although SCL has been implemented in schools since 2005, the main elements of traditional teaching still dominate the education system in high schools. According to the teachers, there are serious barriers to its implentation. Student profile, curriculum, teachers, learning resources, parents and structure of classrooms were reported to be main impediments in the education system. In the light of the data collected, the education offered in high schools was found to be incompatible with the nature of SCL. Moreover, neither students nor teachers seem to be ready to fully implement SCL in the teaching and learning process as they both lack the required knowledge and skills. The results of the study clearly revealed that both teachers and students need training for its effective implementation. Based on all these findings, it can be said that SCL approach is not implemented at a sufficient level in high schools in North Cyprus.

5.3 Recommendations

According to the results obtained from this study, the following recommendations can be made in order to foster the implementation of SCL in classroom teaching and learning in high schools throughout North Cyprus.

- In accordance with the findings of this study, the in-service training, which was previously offered to teachers on SCL, lacked practical guidance on the use of methods and techniques with too much focus on theory. Teachers play

a crucial role in the implementation of SCL and thus, it is of utmost importance to provide teachers with the necessary training, guidance and support in the process of transforming from TCT to SCL. Consequently, in-service training programmes should focus both on the theoretical and practical use of SCL, giving teachers the opportunity to experience the use of student-centred teaching methods through hands on activities. The findings of the study also demonstrated that teachers who are graduates of teacher certificate programs implement some components of SCL less than teachers who are graduates of teacher education programs. Therefore, teachers, particularly the graduates of teacher certificate programs, seem to need more guidance and support on the implementation of SCL.

- Students' educational background was reported to be an important barrier that hinders the use of SCL. According to teachers, most students are from traditional educational backgrounds who are dependant on teachers in the teaching and learning process. They have low motivation and are reluctant to be active learners who take the responsibility for their own learning. Consequently, like teachers, students need to receive training on SCL. Initially, it is crucial to give students clear reasons with solid evidence of the benefits of SCL over traditional TCT approach. Students need a clear rationale for why they are required to take on new roles and responsibilities in the teaching and learning process. It is mainly the teachers' responsibility to make it explicit to students that the methods and skills used in SCL enables the development of lifelong learning skills they will need for the rest of their

lives. If students are convinced that something is important throughout their lives, they will be more eager to adopt it.

- There are contradictory results regarding the course books used in high schools. While some teachers think that they are in line with SCL, others claim that they are not. Therefore, the course books used in high schools should be analysed to check whether they support the use of SCL and if not, they should be revised and adapted to better suit the characteristics, principles and the aims of the target approach. Besides this, in-service training for teachers should definitely cover the exploitation of course books and other supplementary materials in all subjects.

- According to the teachers participated in the study, the content of the course curricula used in high schools are overloaded and prescriptive, not giving the flexibility to organize and adapt activities, tasks and topics based on the needs and abilities of their students. Consequently, the curricula used in high schools should be analysed by the curriculum developers working for the Ministry of National Education, and they should be organized in a way that gives teachers some flexibility regarding the implementation of course content.

- The existing assessment system, which is reported to be incompatible with the use of SCL, raises serious problems for the teachers. According to the teachers, student learning is mainly assessed by traditional written tests mostly comprising of multiple choice questions. Methods used to assess

students' performance have a direct impact on instruction offered to students. Therefore, teachers feel the need to prepare students to exams rather than allocating time for student-centred strategies. Based on the findings of the study, there is a need for certain amendments in the way students are assessed in high schools. Adopting innovative SCL forms of assessment will encourage both students and teachers to use SCL in teaching and learning. Hence, alternative assessment methods such as portfolios, projects, peer- and self-assessment that focus on process rather than product should be introduced to both teachers and students, and they should be assisted in using them.

- Based on teachers' opinions, high schools lack necessary learning resources required for the effective use of SCL. It is the government's responsibility to equip schools with the necessary learning resources that include computer with Internet connection, labs and libraries. Hence, there should be a detailed need-assessment to find out what is actually missing and provide the schools with necessary resources.

- Parents are reported to be another barrier that inhibits the use of SCL in high schools. As teachers stated, some parents, particularly the ones in rural areas, do not believe in the importance of higher education and thus, they do not support their children's learning outside school. Parental involvement plays a significant role in education. Consequently, providing adequate information to parents is crucial for the effective implementation of SCL. Schools should arrange extensive meetings with parents and inform them about SCL as a new

approach to teaching and learning where parental responsibilities will be emphasized.

In light of the findings obtained, the following suggestions can be made for further research:

- This study revealed some contradictory results between quantitative and qualitative data collected. While the data obtained from the SCLI indicated that SCL is implemented at a high level, in-depth interviews demonstrated that SCL is not implemented at such high level in most aspects. Therefore, a qualitative study that mainly includes classroom observations can be carried out to investigate the actual classroom practices in high schools.

- This study is carried out in public high schools; therefore, conducting a similar study in private colleges and / or vocational high schools would help reveal the extent SCL is implemented at secondary education level and the barriers, if any, that hinder its implementation.

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APPENDICES

Appendix A: Content of the Student-Centred Learning Inventory (SCLI)

COMPONENTS	FACTORS	ITEMS
Motivation	1. Creating motivating Conditions	• I consider my students' needs, abilities and interests in designing classroom activities • I stimulate intrinsic motivation in class. • I value all my students' opinions in class. • I create supportive, friendly and relaxed teaching and learning environment for my students. • I try to know my students at a personal level in order to motivate them to learn. • I consider my students' motivation in designing teaching and learning activities.
	2. Motivating students through involving them in decision making process	• I include my students in decision making process to motivate them to learn. • I provide my students choice and control in the teaching and learning process.
Instructional Strategies	1. Considering student characteristics in choosing strategies	• I use authentic tasks, problems and exercises in my class • I consider my students' prior experiences in designing learning activities. • I use teaching methods that make students active in class. • I consider individual abilities of my students' in choosing instructional strategies. • I choose instructional strategies based on the needs of my students. • I encourage interaction among students through group work activities in class. • I make my students aware of what they are doing and why they are doing it in learning.

	2. Independent learning strategies	• I help my students relate new learning to their prior knowledge. • I allow each student work at his/her own pace in class. • I guide my students to be autonomous learners who are responsible for their own learning.
	3. Traditional teaching methods / techniques	• I encourage individual work in my class. • I use one basic teaching method in class. • I use lecturing to present topics to my students.
Distribution of power	1. Participatory approach	• I include my students in the process of edeveloping the criteria for evaluating their performance in class. • I negotiate classroom management policies, assessment and teaching methods with my students. • I include my students in decision making proceess regarding the topics that will be covered in class.
	2. Authoritarian approach	• I determine the educational objectives for each of my student. • I determine all learning activities take place in class.
	3. Guiding approach	• I guide my students to take the responsibility for their own learning. • I guide my students to organize and evaluate their own learning based on their progress.
Teacher and student roles	1. Student-centred student roles	• I encourage self-learning of students both in and outside class. • I encourage my students to help each other in the learning process.

		• I design activities that will encourage student growth from dependence on others to greater independence. • I design tasks that foster cooperation rather than competition among students. • I give my students opportunities to ask questions, discover and construct concepts for themselves.
	2. Traditional teacher roles	• I am responsible for what and how my students learn. • It is my responsibility to to transmit knowledge and skills to my students. • It is my responsibility to provide my students all the knowledge in class. • I act as an authority figure in class.
	3. Student-centred teacher roles	• I act as a facilitator during most part of the class time. • I encourage my students to become self-directed, life-long learners. • I encourage my students to take active role in class. • I encourage my students to share knowledge through engaging in social interaction with their peers.
Assessment	1. Alternative assessment methods	• I make use of portfolios to assess my students' achievement throughout the semester. • I provide my students the opportunity to assess their own learning. • I use group projects to assess student learning. • I get my students assess themselves and their

	peers with the help of criteria. • I inform my students about the assessment criteria in advance.
2. Providing feedback	• I give my students immediate feedback right after the assessment. • I use formative assessment to make comments on my students' strengths and weaknessses. • I help students identify the gaps between their goals and their present level of performance. • I use formative assessment methods giving constructive feedback to my students.

Appendix B: Student-Centred Learning Inventory

Değerli Öğretmen,

Prof. Dr. Bekir Özer'in danışmanlığında, Kuzey Kıbrıs'ta liselerde öğretmenlerin derslerinde uyguladıkları öğretme yaklaşımlarını belirlemek amacıyla bir araştırma desenlenmiştir. Elinizdeki envanter, bu araştırma için gerekli olan verileri toplamak üzere hazırlanmıştır.

Bu envanterdeki maddeler bir öğretmenin derslerini yürütürken uygulayabileceği etkinlikleri yansıtmaktadır. Maddelerin doğru ya da yanlış yanıtları yoktur. Bu nedenle, siz de öğretmen olarak lütfen her bir maddeyi okuyunuz ve açıklanan etkinliği hangi sıklıkta yaptığınızı ilgili seçeneği (5, 4, 3, 2, 1, 0) işaretleyerek belirtiniz. Yanıt seçeneklerinin anlamları şöyledir:

5: Her zaman
4: Hemen hemen her zaman
3: Sık sık
2: Ara sıra
1: Hemen hemen hiç
0: Hiçbir zaman

Araştırma sonuçlarının niteliği, sizin envanterdeki maddeleri gerçekçi ve içten biçimde yanıtlamanıza bağlıdır. Bu nedenle, lütfen envanterdeki maddeleri kendinize uyan bir biçimde yanıtlayınız ve yanıtsız madde bırakmayınız. Yanıtlarınız kesinlikle gizli tutulacak ve yalnızca araştırma amaçlı kullanılacaktır.

Envanteri yanıtlamaya ayırdığınız zaman ve araştırmaya yaptığınız katkı için size çok teşekkür ederim.

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KİŞİSEL BİLGİLER

Cinsiyetiniz: ☐ Kadın ☐ Erkek

Öğretmenlik dalınız:

☐ Almanca ☐ Beden Eğitimi ☐ Biyoloji ☐ Coğrafya

☐ Din Kültürü ve Ahlak Bilgisi ☐ Edebiyat ☐ Felsefe ☐ Fizik

☐ Fransızca ☐ İngilizce ☐ Kimya ☐ Mantık ☐ Matematik

☐ Müzik ☐ Psikoloji ☐ Resim ☐ Sosyoloji ☐ Tarih

☐ Başka (lütfen belirtiniz) : .....

Meslek deneyiminiz:

☐1-5 yıl ☐ 6-10 yıl ☐11-15 yıl ☐ 16-20 yıl ☐ 20 yıl ve üzeri

Öğrenim düzeyiniz:

☐ Lisans

☐ Yüksek lisans

☐ Doktora

Öğretmenlik yetişimine (formasyon) sahip olma durumunuz:

☐ Öğretmen yetiştiren bir lisans programını bitirdim.

☐ Farklı bir lisans programını bitirdim; bu program sırasında eğitim dersleri alarak öğretmenlik sertifikası elde ettim.

☐ Farklı bir lisans programını bitirdim, daha sonra öğretmenlik sertifikası aldım.

☐ Farklı bir lisans programını bitirdikten sonra Ortaöğretim Alan Öğretmenliği Tezsiz Yüksek Lisans Programına katılarak öğretmenlik diploması aldım.

☐ Öğretmenlik yetişimi ile ilgili bir eğitimden geçmedim.

☐ Başka (lütfen belirtiniz) : .....

Lütfen aşağıda verilen her bir maddedeki etkinliği derslerinizde hangi sıklıkta uyguladığınızı (X) işareti ile belirtiniz.	***Her zaman***	***Hemen hemen her zaman***	***Sık sık***	***Ara sıra***	***Hemen hemen hiç***	***Hiçbir zaman***
	5	**4**	**3**	**2**	**1**	**0**
1. Öğrenme etkinliklerini öğrencilerin gereksinmelerini, becerilerini ve ilgi alanlarını göz önünde bulundurarak belirlerim.						
2. Öğrencilerin yeni bilgilerle daha önce öğrendikleri bilgiler arasında ilişki kurmalarına yardım ederim.						
3. Öğrencileri dersle ilgili öğrenmelerinde kendi kendilerini güdülemeye yöneltirim.						
4. Sınıfta tüm öğrencilerin görüşlerine değer verdiğimi belli ederim.						
5. Ders saatinin büyük bir bölümünde öğrencilere ders konusunda rehberlik yaparım.						
6. Öğrencilerin özyönetimli (kendilerini yönetebilen), yaşamboyu öğrenen bireyler olarak yetişmeleri için çaba gösteririm.						
7. Sınıfta her öğrencinin kendi hızında öğrenmesine olanak sağlarım.						
8. Öğrencileri kendi öğrenmelerinden sorumlu özyönetimli (kendilerini yönetebilen) bireyler olarak davranmaya yöneltirim.						
9. Sınıfta öğrenciler için destekleyici, içten ve rahat bir öğrenme-öğretme ortamı oluştururum.						
10. Öğrencileri güdülemek için ders etkinliklerinin planlanmasında onları da karar verme sürecine katarım.						
11. Öğrencilerin neyi nasıl öğreneceklerinin sorumluluğunu öğretmen olarak ben taşırım.						
12. Öğrencileri sınıfta etkin olmaya yöneltirim.						
13. Öğrencileri öğrenmeye güdülemek için onları bireysel özellikleriyle tanımaya çalışırım.						
14. Öğrencileri kendi öğrenmelerinin sorumluluğunu üstlenmeye yöneltirim.						
15. Öğrencileri sahip oldukları bilgileri sosyal ortamlarda birbirleriyle paylaşmaya yönlendiririm.						
16. Öğretme-öğrenme sürecinde öğrencilere yapılacak etkinliklerle ilgili seçenekler sunar, karar vermeyi onlara bırakırım.						
17. Derslerde gerçek yaşama dönük durum, problem ve alıştırmaların kullanıldığı uygulamalara yer veririm.						
18. Sınıfta uygulayacağım durum, problem ve alıştırmaları öğrencilerin önbilgilerini göz önünde bulundurarak belirlerim.						
19. Sınıfta öğrencileri etkin kılan öğretim yöntemleri kullanırım.						
20. Sınıfta öğretim stratejilerini belirlerken öğrencilerin bireysel becerilerini göz önünde bulundururum.						
21. Öğrencilerin dönem boyunca gösterdikleri başarıyı belirlemek için öğrencilerin yaptıkları tüm çalışmaları içeren ürün dosyalarından (portfolyo) yararlanırım.						
22. Öğrenci başarısını değerlendirmede kullanılacak ölçütleri belirleme sürecine öğrencileri de katarım.						

23. Sınıfta öğrenme-öğretme etkinliklerini düzenlerken öğrencilerin güdülenme düzeylerini göz önünde bulundururum.						
24. Öğrencilerin kendi çalışmalarını kendilerinin değerlendirmelerine olanak sağlarım.						
25. Sınıfta öğrencileri grupla çalışmaktan çok bireysel çalışmaya yönlendiririm.						
26. Öğrencilerin gerek sınıf içinde gerek sınıf dışında kendi kendilerine öğrenmeleri için çaba gösteririm.						
27. Derslerimi hep aynı öğretim yöntemini kullanarak yürütürüm.						
28. Öğrencilerin başarısını belirlemede grup çalışmalarını değerlendirmeye katarım.						
29. Öğrencilerin gerekli bilgi ve becerileri öğrenme sorumluluğunu öğretmen olarak ben taşırım.						
30. Kullanacağım öğretim stratejilerini öğrencilerin gereksinmeleri doğrultusunda belirlerim.						
31. Sınıfta grup çalışmaları düzenleyerek öğrencilerin birbirleriyle etkileşimde bulunmalarını sağlarım.						
32. Öğrencileri öğrenme-öğretme sürecinde birbirlerinin öğrenmelerine yardım etmeye yönlendiririm.						
33. Derslerde konuların öğretiminde düzanlatım yöntemini kullanırım.						
34. Öğrencilere gerekli olan tüm bilgileri öğretmen olarak ben sağlarım.						
35. Sınıf içi kurallarını, öğrenme ve değerlendirmede izlenecek yöntemleri öğrencilere danışarak belirlerim.						
36. Öğrencilerin başkalarına bağımlı olarak öğrenmelerini azaltıp kendi kendilerine öğrenmelerini geliştirmeye dönük etkinlikler düzenlerim.						
37. Öğrencilerin öğrenirken neyi niçin yaptıklarının farkında olmalarını sağlarım.						
38. Öğrencilere her türlü değerlendirmenin hemen sonrasında dönüt veririm.						
39. Öğrencilerin güçlü ve zayıf yönleri üzerinde yorum yapabilmek için onların öğrenmelerini belli aralıklarla değerlendiririm.						
40. Öğrencilerin gerek kendi çalışmalarını gerekse arkadaşlarının çalışmalarını belli ölçütler kullanarak değerlendirmelerini sağlarım.						
41. Öğrencilerin birbirleriyle işbirliği yaparak çalışmalarını sağlayan etkinlikler düzenlerim.						
42. Öğrencileri kullanacağım değerlendirme ölçütleri konusunda önceden bilgilendiririm.						
43. Öğrencileri, kendi öğrenmelerini gerçekleştirmede ve değerlendirmede, gelişim düzeylerinin gerektirdiği ölçüde yönlendiririm.						
44. Sınıfta otoriteye sahip kişi olarak hareket ederim.						
45. Her bir öğrencinin öğrenme amaçlarını onlar adına öğretmen olarak ben belirlerim.						
46. Sınıfta hangi öğrenme etkinliklerine yer verileceğine öğretmen olarak ben karar veririm.						

47. Öğrencilere o anki performans düzeyleri ile amaçladıkları performans düzeyleri arasındaki farkı belirlemelerine yardımcı olurum.						
48. Sınıfta işlenecek konuları öğrencilerle birlikte belirlerim.						
49. Öğrencilere soru sorma, gereksinmeleri olan bilgileri bulma ve bilgiyi kendi başlarına yapılandırmaları için olanaklar sunarım.						
50. Yaptığım tüm değerlendirmelerde öğrencilere yapıcı eleştirilerde bulunmaya özen gösteririm.						
51. Öğrencilere istedikleri öğrenme etkinliğini yapabilmeleri için seçenekler sunarım.						

Appendix C: Questions used in the SCLIF

Öğretmenin adı:
Dalı:
Meslek Deneyimi:
Öğrenim düzeyi:
Formasyona sahip olma durumu:

Sorular

1. Öğrencileri derse güdülemek için neler yapıyorsunuz?

2. Dışsal güdüleme mi yoksa içsel güdüleme mi size göre daha önemlidir? Neden?

3. Ödül ve ceza kullanıyor musunuz? Hangi durumlarda? Ne ölçüde işe yaradığını düşünüyorsunuz?

4. Dersinizde en çok hangi yöntem ve teknikleri kullanıyorsunuz? Neden?

5. Sizce sınıf içerisinde ve dışında öğrencinin ve öğretmenin rolü ne olmalıdır?

6. Derslerinizin planlanması, uygulanması ve değerlendirilmesi sürecinde öğrencilere ne kadar söz hakkı veriyorsunuz? Seçenekler sunuyor musunuz?

7. Dersinizin değerlendirmesini nasıl yapıyorsunuz? Neden?

8. Sizce liselerde ÖMÖ ne ölçüde uygulanmaktadır? Neden? Lütfen sebepleriyle açıklayınız.

Appendix D: Permission granted from the Ministry of National Education

KUZEY KIBRIS TÜRK CUMHURİYETİ
MİLLİ EĞİTİM GENÇLİK VE SPOR BAKANLIĞI
GENEL ORTAÖĞRETİM DAİRESİ MÜDÜRLÜĞÜ

Sayı: GOÖ.0.00.35-A/10/11-1198 **28.03.2011**

Sayın Gülen Onurkan Aliusta
Doğu Akdeniz Üniversitesi
Gazimağusa.

İlgi: 25.03.2011 tarihli başvurunuz.

Talim ve Terbiye Dairesi Müdürlüğü'nün TTD.0.00.03-12-11/278 sayı ve 28.03.2011 tarihli yazısı uyarınca ilgi başvurunuz incelenmiş olup müdürlüğümüze bağlı okullarda görev yapan öğretmenlere yönelik hazırlanan "Öğretmenlerin Öğretime Yaklaşımları" konulu anketin uygulanması müdürlüğümüzce uygun görülmüştür.

Ancak anketi uygulamadan önce anketin uygulanacağı okulların bağlı bulunduğu Müdürlükle istişarede bulunulup, anketin hangi okulda ne zaman uygulanacağı birlikte saptanmalıdır.

Anketi uyguladıktan sonra sonuçlarının Talim ve Terbiye Dairesi Müdürlüğü'ne ulaştırılması gerekmektedir.

Bilgilerinize saygı ile rica ederim.

Mehmet S. Kortay
Müdür

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Appendix E: Teacher consent form

Research title: An examination of the implementation of Student-Centred Learning (SCL) in high schools in North Cyprus

Researcher's name: Gülen Onurkan Aliusta (gulen.onurkan@emu.edu.tr)

Supervisor's name: Prof. Dr. Bekir Özer (bekir.ozer@emu.edu.tr)

- The nature and purpose of the research has been explained to me.
- I understand and agree to take part in the study.
- I understand that I may withdraw from the research at any stage.
- I understand that I will not be identified and my personal results will remain confidential throughout the study.
- I understand that I will be audiotaped during the interview.
- I understand that data will be stored as audio files and only the researcher will have access to it.
- I understand that data will be stored in the form of hardcopies and softcopies, depending on my submission, and that the researcher will ensure the confidentiality of my personal details by storing the hardcopies and softcopies in a secure manner.
- I understand that I may contact the researcher or supervisor if I require further information about the research.

Signed ……

Date

Appendix F: Checklist Matrix

The extent to which SCL based on its' five main components and the barriers that hinder its use

Motivation	Instructional strategies	Teacher/student roles	Distribution of power	Assessment	Barriers
• I approach my students as a friend • I tell jokes • I give + and – to encourage them to do homework (all) • I use exams • I give bonus grades • I tell them if they want to get good grades, they have to study hard • I finish class early • I respect my students • I love my students • I relate topics to real-life events • I give examples • Personalisation • I use body language and gestures	• Lecturing (all) • Question and answer • Seatwork • Individual work • Whole class discussion • Giving examples • Use of blackboard	Teachers: • Only source of knowledge • Main source of knowledge • Knowledge transmitter • Good role model • Responsible for student learning • Tests • Corrects • Gives feedback Students: • Listen to the teacher • Answer questions • Ask questions • Study hard • Go homework • Get good grades	• T is the only authority • T makes all decisions • T knows the best •	• Mainly written tests • Midterm and final tests • Multiple choice questions • Homework • Few projects	Students: • dependent on teacher • low motivation • reluctant to take active role • mixed ability Curriculum • overloaded and fixed • traditional assessment system • course books • subject taught Teachers • traditional conceptions of teaching and learning • in-service teacher training Learning resources • lack of necessary labs, books, computers Parents • socio-economic background

Comment [t1]: creating friendly and relaxed atmosphere in class
Comment [t13]: student profile
Comment [t2]: using reward and punishment
Comment [t10]: teacher as decision maker, teacher do not share power teacher do not provide choices
Comment [t3]: use of exams
Comment [t11]: traditional methods
Comment [t12]: only few use projects no use of self and peer assessment
Comment [t4]: reward and punishment
Comment [t14]: curriculum
Comment [t6]: traditional strategies
Comment [t7]: SCL strategies are not used
Comment [t8]: traditional teacher roles no SCL roles
Comment [t15]: teachers
Comment [t5]: other strategies
Comment [t9]: traditional student roles no SCL roles
Comment [t16]: Learning resources
Comment [t17]: parents

language and gestures					• lack of necessary labs, books, computers Parents • socio-economic background • negative attitudes towards higher education Classrooms • crowded • not fully equipped and furnished • small	Comment [t5]: other strategies Comment [t17]: parents Comment [t18]: structure of classrooms