

# TEACHING <CRITICAL THINKING AND PUBLIC SPEAKING> TO FIRST YEAR UNIVERSITY STUDENTS IN ISTANBUL AYDIN UNIVERSITY

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## Özet

Başarılı eğitim eğiticinin öğrenim görenlerin gereksinimlerini bilip ona hitap etmesi, öğrencilerin öğrenme stillerindeki değişiklikleri bilmeleri ve ona göre eğitim/öğretim yapmak ile olur. Bilgisayar Mühendisliği, Mimarlık, İç Mimarlık, Mimari Restorasyon, Bilgisayar Teknolojileri ve Programlama ile İngiliz Dili ve Edebiyatı öğrencilerine Eleştirel Düşünme / Öğrenim Stratejileri ile Toplum Önünde Konuşma / İletişim Teknikleri dersleri verildi ve öğrencilerin bu derslerde öğrendiklerini diğer derslerde ne ölçüde kullandıkları takip edildi. Özellikle öğrenmeden çok ders çalışma, derste not tutma, daha iyi ve hızlı okuma teknikleri ile zaman yönetimi konuları işlendi. Ayrıca öğrencinin kendi öğrenme stili dışındaki diğer öğrenme tekniklerini de geliştirmesi, problem çözme ve bilgiyi işleme teknikleri üzerinde üzerinde de duruldu. Pragmatik yaklaşım geliştirmeyi, aktif öğrenim teknikleri öğrencilerin en fazla beğendikleri beceriler oldu. Ayrıca toplum önünde etkili konuşma yapmanın kazanılması gereken en önemli ve bir o kadar da en zor becerilerden biri olduğu belirtildi.

**Anahtar kelimeler:** Öğrenme stratejileri, İletişim teknikleri, Öğrenim stilleri, Eleştirel düşünme, Toplum önünde konuşma, Öğrenmeyi öğrenme, Yüksek öğrenim

## Abstract

Effective teaching requires flexibility, energy, and commitment. Successful teaching also requires that teachers are able to address learner's needs and understand the variations in learners' styles and approaches. This is the report of teaching outcome of a series of "Critical Thinking / Learning Strategies" and "Public Speaking / Communication Skills" courses given to first year Computer Engineering, Architecture, Interior Design, Restoration, Computer Technology and Programming,

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and English language and literature students and follow up study of how and to what extent they could apply these learned skills in other courses. Learning Strategies courses concentrated exclusively on study skills, strategies and techniques such as practising of each learning strategy, note-taking, improved reading and time-management skills to help students learn and improve skills of other learning styles and promote the use of higher order cognitive skills, such as problem solving and information-processing strategies. They found practises of pragmatist, activist, theoretical and reflector styles as the most important part of the course. 'Learning Strategies' and 'Public Speaking' have become part of the skills agenda in our university and made the students active learners throughout the course. They found speaking in front of public was the most difficult task and most of them had never done it before. These courses should be included in all university curriculums to make students aware of different learning and studying strategies.

**Keywords:** Learning strategies; Learning to Learn; Learning Styles, Classroom Teaching, Adult Learning, Higher Education, Communication Skills, Public Speaking, Critical Thinking,

### **Introduction**

Effective teaching requires flexibility, energy, and commitment. Successful teaching also requires that teachers are able to address learner's needs and understand the variations in learners' styles and approaches.

'Learning to learn' is an important educational goal in the educational community. Actually, teachers are using 'learning to learn' in many different meanings and it is being implemented in many different variations. Teachers should not only present information but also are expected to teach students how to process this information to construct new knowledge. For most schools and teachers it is not clear what 'learning to learn' is and how it should be implemented. One option is to organise isolated courses (i.e., courses outside the context of the regular subjects) to teach learning strategies, such as learnable techniques for selecting information and building connections.

Curry, 1999 explored how learning styles could be applied in university education, including ways to use information about students' learning styles to offer assistance to students coping poorly with the demands of higher education. There have been some studies about determining the learning styles of the class before the training or course started (Janing, 2001; Dobbin, 2001)

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This is the report of teaching outcome of a series of “Critical Thinking / Learning Strategies’ and “Public Speaking/Communication Skills” courses given to first year Computer Engineering, Architecture, Interior Design, Restoration, Computer Technology and Programming, and English Language and Literature students and follow up study of how and to what extend they could apply these learned skills in

### **Material and Methods**

I used the teaching materials developed by the Queen’s University, Canada ([www.queensu.ca/glc](http://www.queensu.ca/glc)), to teach developing learning strategies, Foundation for Critical Thinking written by Linda Elder and Richard Paul and “Essentials of Public Speaking” by Cheryl Hamilton as textbook to teach public speaking to our students.

The students were asked how they studied previously and their expectations of the course at the beginning of the course. Kolb’s LSI Learning Style Evaluation Test was given to the students at the beginning of the course and students were identified as visual, auditory, or tactual(kinesthetic) learners according to the test result. Students were first asked to form groups according to their learning styles, but there was some resistance amongst the students to breaking up of their already established groupings. Therefore, students were allowed to stay in the groups of their choice.

First, Practical Study Skills which included Time Management, Practical Note-taking and Improved Reading Skills were practised to help the students take control of their time and their study habits and develop lifelong learning skills to meet the demands of the courses in engineering and their profession.

Later, their awareness of different learning styles were raised to help them think about their own approaches to learning. Kolb Learning Cycle, their learning style preferences and how to improve their performance in different learning styles were discussed. Learning styles preferences; Pragmatist, Theorist, Reflector and Activist and what these terms mean and how to improve these styles were also discussed. They were told understanding learning styles could help them predict a person’s learning style by their behaviour in meetings, which can also help them operate to their optimum effectiveness and it would be very useful if they want to influence matters. Therefore, they can strengthen their weaker styles of learning.

Exercises to improve pragmatist style, such as, not leaving a discussion or a meeting without taking a list of actions or setting up a dateline to finish a project or homework were carried out. Overcoming the fear for failure or making a mistake,

fear of getting ridiculed, being anxious about trying new things, having a strong wish to have things well thought out in advance, doubt himself/herself and lack of self-confidence or taking life very seriously or earnestly were also practised.

They were asked to do something they had never done before, at least once a week e.g., going to some new place in the university, new club, new sport, dance club etc. They were asked to practise initiating and maintaining conversations with as many people as they could and to join a debating society. They were asked to set up and chair a meeting, give presentations, try and make a substantial contribution in the first 10 minutes at a meeting. They practised thinking aloud on their feet, set themselves a problem and bounce ideas off a colleague/friend, present a topic.

To improve their theoretical style, they were asked to read some 'heavy' stuff, such as articles about Cyprus issue, Kurdish problem, Northern Iraq, Turkey's joining to the European Union etc. from our 'Cumhuriyet', Turkish Daily News newspapers or columnists from New York Times or Washington Post news papers and summarize them in their own words. They were also asked to read and discuss articles from two news papers belong to opposite sites in political sense and spot inconsistencies in their arguments.

To improve reflector style the students were asked to write about each day, think and draw conclusions and record their conclusions in a diary. They were asked to spend a few hours in the reference library to collect some data about a subject of their choice, and write a report or paper about it. Once it is complete put it away then return to it and complete a major rewrite. They practised drawing up lists for and against a course of action by taking a contentious issue, such as doctor aided suicide, abortion, etc. and produce balanced arguments for and against.

It has also been emphasized that styles are not either 'good' or 'bad' and style flexibility is needed. Key to educational and professional success is the ability to adopt one's learning styles was also emphasized during the course. They were told if they want to be flexible they need to know their own style, the alternatives and how to change.

### **Practical note taking and improving reading skills;**

We discussed critical factors when learning, **3Rs**; wRiting, aRithmetic, Reading and later new techniques: The **5Rs**; Resilience, Resourcefulness, Reflectiveness, Remembering and Responsiveness and Textbook reading skill; **SQ3R**: Survey, Question, Read, Recite and Review because these skills are at the heart of what

makes a competent lifelong learner. They practised to improve their reading skills such as; every word does not to be read or verbalise how many words do you see in one eye movement? Improving reading speed 50 word per minutue (wpm), 100 wpm etc.

They exercised how one can boost his/her motivation such as giving ourselves a reward, taking a break, celebrating what we have done so far, stop what we are doing and take some physical exercise, finding something to laugh about, try getting the information another way, asking a friend for help, manageing daydreaming etc.

For example, in one of the workshops, a “serenat” which was a brief story of a relationship between man and woman was read and they were asked to draw a picture of this depicting the story to show what they understood it and if they could tell us by a diagram. In another exercise, a diagram was drawn on the board and the students were asked to tell us what they understood from the diagram. The diagram was about what expectations a man and a woman had from life and their relationship. Examples were always chosen from popular topics like relationship between men and women because everyone liked it very much and enjoyed talking about them. Several workshops about the retantion of the knowledge, concept mapping and making associations, etc. have also been conducted during the course

Different teaching styles and teaching methodologies that can be used in different settings as described in detail by Vaughn and Baker 2001 were discussed. So that they can use this information to evaluate the faculty for their teaching performances.

We also started independent student research projects as part of requirement for accreditation of the undergraduate computer engineering education program to enable students to apply the learning/studying strategies they learn in our course.

The students were taken to the computer lab to learn to do literature search and use the electronic full text databases available on the internet which the university has already subscribed and other internet resources.

The students were also given task of making their own web sites. Therefore, they all had to learn developing application tools to develop their web sites. This way they practiced of “Learning to Learning” and they all proved that they could learn by themselves.

At the end of each course open ended questionnaires were distributed to the students to determine what they learned new about learning and what benefits they got out of these courses. All the students were asked to make a presentation in

public about “daring” topics. Many said these presentations were the best opportunity for them to show their so called “hidden talent”.

A short summary of sequence of workshops in each ‘Learning to Learn’ course has been given in Table 1.

### **Results**

Our students indicated that they did not have a particular study habit when they were first asked at the beginning of the course. They all said their mentors in the private courses taught them how to study to score high on the university entrance exam but they were not given any learning styles test previously by their mentors.

On the other hand, the students’ expectations of the courses were to acquire better learning techniques to obtain better grades.

Our teaching model allowed each student to contribute using his or her preferred style while experiencing other styles. A systematic set of activities was designed to utilize all learning styles as explained above. ‘Learning Strategies’ courses concentrated exclusively on study skills, strategies and techniques and to promote the use of higher order cognitive skills, such as problem solving and information-processing strategies. The students felt challenged, sometimes even threatened, to develop their learning skills in other learning style preferences. A student who was strong in one style needed assistance in others. They said they learned practical tips of general learning/studying techniques and strategies and they thought it would have major effects on their main study style. They found practises of pragmatist, activist, theoretical and reflector styles and becoming active learner as the most important part of the course. However, they preferred to call ‘learning styles’ as ‘study styles’ and ‘learning to learn’ as ‘learning ways of studying for exams’ or ‘learning to obtain better grades’.

When they were interviewed in their second and third years, some said they study differently depending on the subject subdomain and course material. Learning meant to them studying to pass exams and obtain good grades. They said a lot of factual learning was required because the faculty could not get together to write integrated questions even though the courses were supposed to be taught ‘integrated’. So they said they could not integrate what they have learned and could not make use of the concept mapping strategies they had learned in the course. They all indicated that studying the previous exams’ questions, lecture notes given by the faculty as well as taken by the students and Power Point slides’ prints of the

lectures were their main study pattern.

They said they found the Problem Based Learning sessions conducted in English during our courses very useful. They felt confident enough to apply for ERASMUS student exchange programs. Thirty six students went to other European universities on these exchange programs because of this.

Many faculties have been going through teachers training courses for the past four years in the school. When the faculties were asked about learning/teaching styles/strategies they said they learn about it in the teachers training courses but they teach as usual. Because they were asked to provide Multiple Choice Question (MCQs) in many of the courses for convenience because hundreds of students are taking these common courses such as Turkish Language, Turkish History, Information Technology etc. Many of teachers who are teaching common courses are not allowed to use different assessment methods to drive student learning in different learning strategies. As a result they end up using the previous exam questions because they said there is always some limit to what you can ask about one subject in MCQ format. Students already have all of the previous exam questions and answers thanks to the student photocopy center. However, after hearing a lot about our courses given to the students, only one faculty member who was interested in learning asked me how to learn faster for himself.

The university is currently conducting institutional self study (ISS) to get ready for European Universities Association (EAU) site visit. During ISS we noticed that 'student research' is missing. As a result of this study, the students established 'Student Research Clup' in March of 2008, and asked the interested students to join the clup. A summary of the outcome of 'Learning to learn' courses has been given in table 2.

### **Discussion**

What our students said about 'learning to learn' is very much the same of what most the other teachers say about 'learning to learn': the ultimate goal of 'learning to learn' is to improve the students' results on exams and tests and obtain better grades and learning results.

Waeytens et al. 2002 studied teachers' conceptions of 'Learning to learn' and they found twenty-two out of 51 teachers used 'learning to learn' in a supportive way. For these teachers 'learning to learn' was limited to mere tips and advice in order to prepare for examinations or tests. These teachers indicated that 'learning to

'learn' was only important when students obtain bad results. In the same study, fourteen teachers (out of 51) used 'learning to learn' in a remedial way. For these teachers 'learning to learn' was a mean to solve learning problems. They did not use 'learning to learn' if there were no problems. If they noticed that their students were studying in a wrong way, they gave them some tips about how to study the subject content in a right way. For 36 out of 51 teachers, teaching how to learn seemed of minor importance. They did not consider it as an essential part of their task. It was a means to achieve a certain goal but it was not a goal on its own. All teachers, except four, reported not having enough time for 'learning to learn'. For them 'learning to learn' was a way to teach students how to process the content. They believed weak students needed some guidance in how they should study; these teachers gave some learning tips and advice. In both groups, the authors found indications that 'learning to learn' was mostly linked to examinations and tests as in their case. These teachers defined 'teaching' as transferring as much information as possible and 'learning' as absorbing all that information. The adult students were expected to know already how to study: They said that smart students did not really need 'learning to learn' and would find on their own a way to organise the material they had to study. Eley 2006 also reported teachers' conception of teaching as information transmission. Norton et al., 2005 studied teachers' beliefs and intentions concerning teaching in higher education and reported that teachers' beliefs were more orientated towards knowledge transmission and problem solving was associated with beliefs based on learning facilitation but with intentions based on knowledge transmission

Vermunt 2005 found the nature of the academic discipline influenced the kind of thinking strategies students used to learn and different disciplines pose different demands on the way subject matter can best be studied. Lindblom-Ylaanne and Lonka, 2001 examined students' perceptions of assessment practises and their ways of studying for examinations as related to their approaches to learning. They found no differences in students' perceptions of the examination procedures. However, the results showed that students in the four groups reported different ways of preparing for examinations and, furthermore, had different views of the most functional ways to study for them. Heikkila & Lonka (2006) explored the relations between learning approaches, regulation of learning and cognitive strategies. They found that approaches to learning, regulation of learning, and cognitive strategies were related to each other, and further, to study success.



Boulton et al., 2004 conducted a longitudinal study of learning for a group of indigenous Australian university students and reported that all of the students reported using highly repetitive strategies such as reading over and over and writing and rewriting notes to learn. However, in another study, they found that the majority of the students interviewed were unable to articulate how they learn (Robotham, 2004). Marton et al., 2005 reported the changes in Chinese University students' views of the temporal structure of learning. 'When you learn you memorize first and understand subsequently' or 'when you learn you understand first and memorize later'. This sequential ordering has been expressed both through the students' account of their 'theory of learning' and their account of their own study practises. Definition of Repetition: when you read the same presentation of something several times in the same way and thus repeat the same thing again and again. Variation: when you read different presentations of the same thing or when you read the same presentation in different ways. The students spoke about using both repetition and variation as their study practise. Students seem to believe repetition enhances remembering and variation enhances understanding. They will likely remember that which is repeated and understand that which is varied. And when the two are intertwined they will remember what they understand. Understanding also means finding the right answer in the test without hesitation for most of the students. They say if they understand it they can do the same thing again even under different circumstance and in different ways. The same logic is embodied in the students' practise of studying. They make use of different sources when studying a certain object of learning and they use the same source different ways: when reading the same texts several times they read it differently every time.

Yamauchi, 2002 found that students' perception of teachers' attitudes affects students' learning strategies. Scanlan et al., 2002 reported that teaching strategies can affect all three learner behaviors if carefully planned and executed by the instructor. Sander et al., 2000 reported that the students' least favoured learning methods were formal lecture, role play and student presentations. Realizing that learners have different learning styles, the instructor should vary teaching methods accordingly (Dobbin, 2001). Besides, today's classrooms are heavily populated with students from many ethnic, psychological and socio-cultural backgrounds. It is necessary that an educator should value diversity and provide a major support for students, (Brown, 2001). Others have mentioned the importance of using a variety of creative, non-traditional teaching techniques and strategies in teaching (Handfield-

Jones et al., 1993; DaRosa et al., 1997). Cyna et al. 2009 mentioned the importance of communication skills taught to the anaesthetists.

## **CONCLUSION**

Using a variety of teaching methods and styles ultimately may encourage adaptability and lifelong learning in the teaching-learning process. Different teaching styles and teaching methodologies can be used in different clinical settings as described in detail by Vaughn and Baker 2001. Effect of learner-centered teaching on motivation and learning strategies in a third-year pharmacotherapy course was studied (Cheanq, K.I,2009) and they found that students' intrinsic goal orientation control of learning beliefs, self-efficacy, critical thinking, and metacognitive self-regulation improved after taking the course.

'Learning to learn' has become part of the skills agenda in our school and we could see how students develop self-confidence and become active learners during the course. Learning to learn course should be included in all computer engineering schools' curriculum to make students aware of different learning and studying strategies. In addition to these courses, SSMs should also be introduced to curriculum so that students can make use of the skills they develop in these courses.

Learning style assessment of each class can be administered at the beginning of a semester and once the information about the learning styles of each class is determined, this information can be passed on to the instructors and they can prepare their lectures accordingly, assuming that each instructor knows how to adapt his/her teaching style to each learning style and, thereby, address the entire class. Students may vary in learning style, intelligence or self-regulation that affect how students learn. However, the characteristics and the demands of the course and assessment methods guide student learning. No matter what the differences are, it is the teacher's duty to reach all students and, therefore teachers need an increased repertoire of teaching and assessment methods. Instructors should change their teaching strategies and techniques based on information about the student learning styles in their class. They should use appropriate teaching and assessment methods to maximize the learning potential of each student and help them develop other learning strategies. As a consequence, individual teachers should pay attention to 'learning to learn' in their courses keeping in mind that assessment drives learning.

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**Table 1. Sequence of workshops in each 'Learning to Learn' Course**

Kolb's LSI Learning Style Evaluation Test was given to the students at the beginning of the course and students were identified as visual, auditory, or tactual(kinesthetic) learners
Practical Study Skills which included Time Management, Practical Note-taking and Improved Reading Skills
Later, their awareness of different learning styles were raised to help them think about their own approaches to learning.
Learning styles preferences; Pragmatist, Theorist, Reflector and Activist and what these terms mean and how to improve these styles were also discussed.
Exercises to improve Pragmatist, Theorist, Reflector and Activist styles
It has also been emphasized that styles are not either 'good' or 'bad' and style flexibility is needed.
<b>Practical note taking and improving reading skills; 3Rs; wRiting, aRithmetic, Reading and later new techniques: The 5Rs; Resilience, Resourcefulness, Reflectiveness, Remembering and Responsiveness and Textbook reading skill; SQ3R: Survey, Question, Read, Recite and Review</b>
Exercises; how one can boost his/her motivation
Practised Problem Based Learning (PBL) also known 'active learning' techniques with each group
The students were taken to the computer lab to learn to do literature search and use the electronic full text databases available on the internet and other internet resources.
At the end of each course open ended questionnaires were distributed to the students to determine what they learned new about learning and what benefits they got out of these courses.
The students were also followed up in their second year to determine whether they made any use of the studying styles they had practised in the course and what aspects of the course they found the most useful for themselves.

**Table 2. Outcome of 'Learning to learn' courses**

Our students indicated that they did not have a particular study habit when they were first asked at the beginning of the course.
Students' expectations of the courses were to acquire better learning techniques to obtain better grades
Our teaching model allowed each student to contribute using his or her preferred style while experiencing other styles.
'Learning to learn / Developing Learning Strategies' workshops concentrated exclusively on study skills, strategies and techniques and to promote the use of higher order cognitive skills, such as problem solving and information-processing strategies.
The students felt challenged, sometimes even threatened, to develop their learning skills in other learning style preferences. A student who was strong in one style needed assistance in others.
Students found practises of pragmatist, activist, theoretical and reflector styles and becoming active learner as the most important part of the course.
When they were interviewed in their second year, some of the students said they study differently depending on the subject subdomain and course material.
Students indicated that studying the previous exams' questions, lecture notes given by the faculty as well as taken by the students and Power Point slides' prints of the lectures were their main study pattern.
Students said they found the PBL sessions conducted in English during our courses very useful.
Many faculty have been going through teachers training courses in the school but they teach as usual.
'Student Research Clup' was established in March of 2008