

**INFORMATION LITERACY;  
A PREREQUISITE FOR PRACTICING INFORMATION AND  
COMMUNICATION TECHNOLOGY IN EDUCATION**

**BİLGİ OKURYAZARLIĞI;  
BİLGİ VE İLETİŞİM TEKNOLOJİLERİ UYGULAMAK İÇİN BİR  
ÖNKOŞUL EĞİTİM**

**ИНФОРМАЦИОННАЯ ГРАМОТНОСТЬ;  
ПРЕДПОСЫЛКИ ДЛЯ ПРАКТИКУЮЩИХ  
ИНФОРМАЦИОННЫЕ И КОММУНИКАЦИОННЫЕ  
ТЕХНОЛОГИИ В ОБРАЗОВАНИИ**

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**Abstract**

The present era is called Information Society because of some certain specification it includes. People who live in this society must possess some specific expertise in order to have a good life as a citizen.

The first needed expertise for living in information society is information Literacy. Those who possess this skill can gain information adequately, assess the information properly and use the information effectually. The Education System, as the main structure of educating required manpower for society ought to take certain measures, namely preparing teachers for practicing information and communication technology in the process of education, which is followed by formation of information literacy in students. In this way, the students turn to be researchers, analyzers and processors of information. This will lead them to be the producers of knowledge and will provide them a chance to have a good life as citizens in society.

**Key Words:** Information and communication technology, Education, Learning, Information Literacy, Information Society

**Özet**

İçerdiği bazı belirli özellikleri nedeniyle mevcut döneme Bilgi Toplumu denir. Bu toplumda yaşayan insanlar bir vatandaş olarak iyi bir yaşam elde etmek için bazı özel uzmanlığa sahip olmalıdır.

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Bilgi toplumu için ilk gereken; uzmanlık, bilgi okuryazarlığına malik olmaktır. Bu beceriye yeterince sahip olan bilgiler, bilgileri doğru değerlendirir ve etkin bir şekilde bilgileri kullanabilir. Eğitim sistemi; ana yapı olarak belli önlemler almalı, eğitim sürecinde gerekli insan gücünü yetiştirmek için, toplumun, yani öğrencilerin bilgi okuryazarlığı oluşumunu takip etmeli, bilgi ve iletişim teknolojileri uygulayan öğretmenler hazırlamalıdır. Bu şekilde, öğrenciler; araştırmacı, analiz ve bilgi işlemcilerle dönüşebilir. Bu onlara, bilgi üreticileri olmak ve toplumda vatandaş olarak iyi bir yaşam sağlamak için bir şans verecektir.

**Anahtar Kelimeler:** Bilgi ve iletişim teknolojisi, Eğitim, Öğrenme, Bilgi Okuryazarlığı, Bilgi Toplumu

### **Introduction:**

Information Society rose by the early years of the 1970s. New developments of Information and Communication Technology (ICT) facilitated the transition from Industrial Society to information Society. In this era, people turned from Producing to technical works and providing services. This era is known as “Post-Industrial Age.”

The Phrase “Information Society”, as is called by *Alvin Toffler* “The Third wave”, posed in 1980. In the Third wave, information and knowledge replace muscle energy and physical power. Toffler suggests the Operable Knowledge as the main source of the Third Wave.

In information society, pieces of information transform into product and this product act as currency simultaneously. Computers and the Internet are tools which make the Third Wave happen. Therefore, we should accept that information superhighways provide countries the proper opportunity to develop. Societies which are not benefiting from tools and equipments as such are extremely limited in the fields of Business and Science. In fact, expanding informative networks is a step towards joining international communication and beforehand, towards gaining development.

### **Defining Information Society**

Present era is the combination of Information and Communication. It is the time that mankind found itself needful of knowledge, information and communication in order to achieve wisdom. According to the extent of information and high-speed transfer of them via disks, our time is entitled “The Information Age”.

A number of ideologists believe that human race has entered the “Digital Age”, in which all tools, technologies and processes are in digital form. Some ideologists state that this is the “Age of Reality”, because ICT has provided us with powerful equipments to discover the facts. Mysteries of universe and many questions of scientists have been answered with the aid of our state of the art hard-wares and soft-wares. On the other hand, some ideologists say that this is the “Age of Deception”, because of the difficulties that exist in distinction of truth from fraud in cyber space and only with a scientific view and advanced theoretical skills we can test the authentication of achieved information and knowledge.

Information in the information society, not only has economic value, but it is also the foundation of economic. Those who can buy the information and have the ability and

knowledge to use the information can benefit from it. In other words, in this society, information has transformed into product and this product act as currency simultaneously.

Computer was considered to be the symbol of information technology, and Telephone and Television were representing communication technology. These two independent streams joined together by the creation of "Network." i.e. computers connected to each other with the aid of communication - telephone - and created the network. In history of technology, this is a turning point in which two domains of Information and Communication combined and integrated their capacity that led to the ICT Revolution. The Internet is the ultimate result of this convergence.

Looking deeper into this matter, we can learn that ICT have had incontrovertible influences on economy, politics, culture, social life and personal development.

### **Characteristics of human in Information Society**

Malcolm Webb (1999), general manager for Human Resources of PetroFina SA of Belgium, stated in a speech given at the Palermo Conference of the Association of European Universities, In order to survive and grow in the knowledge society, we need the help of well-rounded individuals with strong interpersonal skills who are not looking for a regimented or a controlled environment but are capable of living with uncertainty, keen to try to find solutions to complex problems and committed to lifelong learning.

In the past societies, one person could spend time for studying, learning and gaining experiences and use this knowledge for years. Now a question rises; there is this person who lives in the information Society. He has gained some experiences and skills in the past. Is he able to continue his life without difficulties using the information and stationary skills of the past? Does facing variety of information, make him confused to solve new problems, using old methods? Do new changes force him to take the process of learning again? Is there any need to obtain new abilities?

Some challenges which a person faces in the information society can be listed as below:

- **Rapid changes:** In the information society, one should be able to interact with rapid changes within the society. In past societies, a person used obtained knowledge, while in the information society, methods, skills and tools are continuously changing. Therefore, the fixed information and knowledge cannot be so useful.
- **Variety:** In the information society a variety of Language, Form, Tool and Structure of information exists and one should be able to react properly to this variety.
- **Complexity:** Encountering the Complexity is another characteristic. According to complexity which exists in the information society and noting the mass of information within this society, one should be able to search for desired information while searching in the mass of information.

Regarding these challenges, it can be said that, those with same gained information and skills from the past, will not be able to get along with new society and therefore, they cannot do well in the society, they will be failed in their jobs and will face difficulties in their private life. These characteristics will force the person to face the phenomenon and matters of life in another way. In other words, they got to be literate. But who is literate or educated in this society?

Information Literacy helps oneself to define information requirements, gain information adequately, assess the information properly and use the information effectually, in order to accomplish in a specified goal. We can say that “educated” person in the information society is someone who can recognize the required information and is able to locate, assess, utilize and produce the required information. Factors of literacy can be named as:

- Searching and gaining information and knowledge
- Understanding information and knowledge
- Presenting and explaining concepts, subjects and facts in form of information
- Information transfer

Information literacy provides the chance for students to refer to Scientific methods and use sources of information in the process of learning. Therefore, the students will get these abilities as well:

- They will recognize their information requirements.
- Accurate and complete information will be the basis of wise decision for them.
- They will expand smart searching strategies.
- They will be able to find and utilize sources of information such as Computer, the Internet and other technologies.
- They will be able to assess, organize and process the obtained information.
- They will use processed information in order to take proper decisions.

It can be stated that one of the personal characteristics of someone who lives in contemporary society is possessing information literacy. Although science has developed so much, and it has had certain effects on today’s lifestyle, many people still do not have the information literacy and this matter has made them vulnerable in ordinary life.

### **Characteristics of Education in Information Society**

Education system of any country is affected by physical changes, like any other system or organization. The Education System, as the main structure of educating society, has to equip itself with new technologies. Therefore, utilizing ICT with proper form seems necessary. It is only in this case that an education system turns to be active and dynamic. We can also say that with correct deployment of ICT in education, some concepts of education such as: Teaching-Learning process, assessing, content, etc., will change and experience evolution that will lead to development of education quality.

Comparing some characteristics of traditional learning environments and new learning environments according to table1, we can observe that benefiting from new learning environments comes with optimal usage of ICT. In new learning environments, students are responsible for their learning, and they can manage the process of learning according to their rate of development.

<b>Table 1</b>	
<b>Traditional Learning Environments</b>	<b>New Learning Environments</b>
Teacher-centered Learning	Student-centered Learning
Using fixed methods and guidelines in the process of education	Using various methods and guidelines in the process of education
Using limited media	Using various multimedia
Teaching via Individual activities	Interactive methods of teaching
Information transfer	Information exchange
Passive learning and abstract education	Active, exploratory learning

ICT will provide learners with a vast number of information sources. Moreover, ICT encourages active learning and provides opportunities of interaction between students or students and education experts. In other words, ICT becomes the conductor of education. Using ICT in the process of education has certain outcomes, such as:

- Quality development of teaching-learning process
- Producing equal chances of learning
- Considering individual differences
- Perfection of self and environment

We must consider that, prerequisite of benefiting from ICT in the process of education is possessing skills of information literacy and using these skills properly in the process of education in order to achieve learning objectives, deploy them and employ them in ordinary life. The first step to make students able to use ICT is to provide them with information literacy.

According to statements of American National Association (Zenger, 1992), Schools should accept information literacy as a required skill, and try to create a literate society. Students with information literacy must know how understand ideas and analyze, assess and transfer the information.

### **Information Society and Modification of Teacher's role**

Teachers, as the main asset of the education system, are responsible for educating the vast number of students. Teachers are also responsible for effective usage of technology in order to improve the learning. If they attempt to employ ICT and use it as a catalyst in the education process, it will lead to development of education quality. To do so, teachers ought to be familiar with their new roles, and they should accomplish in that as well.

The role of teacher in new environment of education will not be transferring information anymore. Teachers will facilitate the process of education and they will be the managers of learning activities. In this way, teachers will spend most of their time to support each student or groups of students, and the time they will spend to teach in the class, will be lesser. We can say that, teachers are ready to use technology in their classes, when they are familiar with technology and are aware of this science. It is only in this case that they can employ new technologies in their classrooms and create new methods of teaching, take the class out of old paradigms and connect to other centers of science and education.

Studies show that expert teachers in using ICT, can guide students in learning, and develop skills such as: problem-solving skills, analyzing information and time management, among students.

Hargreaves (1994) believes that traditional methods of transferring knowledge through texts and exercises, will not take the attention of youngsters who are in a media-saturated world. Therefore, teachers must be familiar with evolutions of technology and obtain more knowledge about abilities of new technologies. However, fundamental modifying of teachers' outlook is the main problem. The main challenge of integrating technology in schools and classrooms is related to manpower, not the technology. In order to use new technologies, teachers face sentimental problems that can be listed as below:

- Psychological barriers in relation with employing ICT
- Difficulties of modifying basic educational paradigms
- Resistance to modification
- Lack of self-confidence in employing ICT and Lack of skill (comparing to students)
- Being outdated and not being familiar with rapid changes of hard-wares and soft-wares

It seems that, some teachers find ICT as a threat to their professional experiences. Teacher of future must have a new point of view to this job and a new prospect to definition of teaching and learning.

Effective employment of ICT is not separated from outlook of Learning-Teaching process. The “New” teachers must be open to new changes, encouraging, seek creativity, facilitate and support learning, and create a proper environment for guidance.

The Internet, interactive teaching materials, tools of simulation and educational digital contents are the sources that empower the teachers to provide students with unbelievable vast opportunities for learning more adequately. As a result of employing technologies, students turn to be information seekers, analyzers, problem solvers and people with effective communication power.

### **Information Society and Modification of student's role**

Study projects about information technology in learning have indicated that from the time this technology has entered the education domain, motivation for learning has greatly increased. Benefiting from IT, learners will be able to understand more information in lesser time and also have access to information even outside of classroom.

Characteristics of students are namely:

- Students as information researchers; students check their questions and attempt to research for finding proper answers
- Students as masterminds, analyzers, and information selectors, using proper technology; students assess obtained information and distinguish the correct information from improper one.
- Students as producers of science; In the information society, students are active and produce science
- Students as messengers; students employ technologies and proper media in order to transmit their messages.

- Students as developers of educational technology; students have the ability of using technological tools and mass communication in order to improve their education.
- Student as a responsible citizen in era of information technology; students will act properly in their cultural and social life. Students are responsible with their tasks in the society and respect others and their rights.

It can be concluded that, unique characteristics of information society, requires people with special abilities. The Education System, as the main structure of educating required manpower for society ought to take certain measures, namely preparing teachers for practicing information and communication technology in the process of education, which is followed by formation of information literacy in students. In this way, the students turn to be researchers, analyzers and processors of information. This will lead them to be the producers of knowledge and will provide them a chance to have a good life as citizens in society.

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