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Введение (Introduction)

Основной целью данной методики является совершенствование навыков профессионального общения с опорой на предложенный текстовый материал научно-технической тематики. Степень сложности включенных в пособие текстов предполагает наличие базового образовательного уровня сформированности коммуникативной компетенции студентов, что позволит использовать различные виды чтения: от информационно-поискового до углубленного, адекватно предложенным заданиям.

В методическом указании включены аутентичные текстовые материалы из газет, журналов, сети Интернет. Общенаучная тематика текстов отражает
профессиональные интересы студентов. Содержание текстов методического указания имеет целью активизировать иноязычную деятельность студентов в процессе формирования профессиональной компетенции.

Методические указания состоит из двух частей. В первой части даны тексты следующей тематики: блок текстов “Science”, “What is Internet?”. “Computers”, “Internet” могут быть использованы преподавателем для чтения и обсуждения в аудитории и предложены студентам для подготовки устных сообщений по обсуждаемой проблеме, докладов, диспутов «круглого стола».


**Part I**

**Text I**

Pre-reading task
1. What can you say about modern science development?
2. Why is science so important in the modern world?
3. Read the text “Science” and discuss the following questions in group:
   a) How does science help to keep peace in the world?
   b) How can science solve energy program?
   c) What proves that the study of science is important to understand natural would?
Science

Science is important to most people living in the modern world for a number of reasons. In particular, science is important to world peace and understanding of technology, and to our understanding of the world.

Science is important to world peace in many ways. On one hand, scientists have helped to develop many of the modern tools of war. On the other hand, they have also helped to keep the peace through research which has improved life for people. Scientists have helped us to understand the problem of supplying the world with enough energy; they have begun to develop a number of solutions to the energy problem - for example, using energy from the sun and from the atom.

Scientists have also analyzed the world's resources. We can begin learning to share the resources with the knowledge provided to us by science. Science studies the Universe and how to use its possibilities for the benefit of men.

Science is also important to everyone who is affected by modern technology. Many of the things that make our lives easier and better are the results of advances in technology and, if the present patterns continue, technology will affect us even more in the future than it does now. In some cases, such as technology for taking salt out of ocean water, technology may be essential for our lives on the Earth.

The study of science also provides people with an understanding of natural world. Scientists are learning to predict earthquakes, are continuing to study many other natural events such as storms. Scientists are also studying various aspects of human biology and the origin and developments of the human race. The study of the natural world may help to improve life for many people, all over the world.

A basic knowledge of science is essential for everyone. It helps people to find their way in the changing world.

Text II

Computers

1. What are the advantages in this sphere of engineering development?
2. What does the abbreviation VLSI mean?
3. Can you describe current trends in computer engineering?

Virtually unknown just a few decades ago, computer engineering is now among the most rapidly growing fields. The electronics of computers involve engineers in design and manufacture of memory systems, of central processing units, and of peripheral devices. Foremost among the avenues now being pursued is the design of Very Large Scale Integration (VLSI) and new computer architects. The field of computer science is closely related to computer engineering; however, the task of making computers more “intelligent”, through creation of sophisticated
programs or development of higher level machine languages or other means, is generally regarded as being in the realm of computer science.

One current trend in computer engineering is microminiaturization. Using VLSI, engineers continue to work to squeeze greater and greater numbers of circuit elements onto smaller and smaller chips. Another trend is toward increasing the speed of computer operations through use of parallel processors, superconducting materials, and the like.

Vocabulary:
1) foremost — в первую очередь
2) pursue — следовать
3) to regard — рассматривать
4) realm - область

Text III

Computers

50 years ago, people hadn’t even heard of computers, and today we cannot imagine life without them.

Computer technology is the fastest-growing industry in the world. The first computer was the size of a minibus and weighed a ton. Today, its job can be done by a chip the size of a pin head. And the revolution is still going on.

Very soon we’ll have computers that we’ll wear on wrists or even in our glasses and earnings. Such wearable computers are being developed now.

Japan’s biggest mobiles-phone company has just released its cleverest product – a mobile phone that allows you to stuff the internet as well as makes calls. People are already using the phone to check the news headlines, follow the stock market and download the latest jokes. Soon they will be able to buy cinema tickets and manage their bank accounts.

The next generation of computers will be able to talk and even think for themselves. They will contain electronic ‘neural networks’. Of course, they’ll be still a lot simpler that human brains, but it will be a great step forward. Such computers will help it diagnose illnesses, find materials, understand and control the world’s money markets, identify criminals and control space travel.

Computer revolution is changing our life and our language, too. We are constantly making up new words or giving new meanings to old ones. Most of computer terms are born in Silicon Valley, the world’s top computer-science center.

Chose an answer – a or b.
1. A mouse is
a) A small furry animal with a long tail
b) A small box used to operate a computer
2. To surf is
   a) To ride on a board of the waves of the sea
   b) To move around the internet
3. A bug is
   a) A small insect
   b) An error in a computer program
4. A flame is
   a) A red or yellow burning gas seen when something is on fire
   b) An unfriendly or rude e-mail
5. To boot is
   a) To kick
   b) To start a computer
6. A geek is
   a) Someone who bites the heads off alive chickens as part of a show
   b) A person who knows everything about computers

Text IV

Pre-reading task
1. Is computer intelligent?
2. Why so many people are still “computer literate”?
3. Read the text “What is a computer?” and discuss the following questions in group

What is a computer?

The term computer is used to describe a device made up of a combination of electronic and electromechanical (part electronic and part mechanical) components. Computer has no intelligence by itself and is referred to as hardware. A computer system is a combination by five elements:

- Hardware
- Software
- People
- Procedures
- Data/information

When one computer system is set up to communicate with another computer system, connectively becomes the sixth system element. In other words, the manner in which the various individual systems are connected – for example, by phone lines, microwave transmission, or satellite – is an element of the total computer system.

Software is the term used to describe the instructions that tell the hardware how to perform a task without software instructions, the hardware doesn’t know
what to do. People, however, are the most important component of the computer system: they create the computer software instructions and respond to the procedures that those instructions present.

The basic job of the computer is the processing of information. Computers accept information in the form of instructions called programs and characters called data to perform mathematical and logical operations, and then give the results. The date is raw material while information is organized, processed, refined and useful for decision making. Computer is used to convert data into information. Computer is also used to store information in the digital form.

Vocabulary:
1) device — устройство
2) intelligence — разум
3) to refer to as — называть что-либо
4) hardware — оборудование
5) procedures — процедуры, операции
6) manner — манера, способ
7) various — различные
8) to connect — соединять
9) microwave — микроволновая
10) transmission — передача
11) instruction — команда
12) to create — создавать
13) to respond — отвечать
14) characters — символы
15) data — данные
16) raw — необработанный, сырой
17) to refine — очищать
18) decision — решение
19) to convert — превращать, преобразовывать

1. Are the following statements true or false?
1) Computer is made of electronic components so it is referred to as electronic device.
2) Computer has no intelligence until software is loaded.
3) There are five elements of computer system: hardware, software, people, diskettes and data.
4) The manner in which computers are connected is the connectivity.
5) Without software instructions hardware doesn’t know what to do.
6) The software is the most important component because it is made by people.
7) The user inputs data into computer to get information as an output.
8) Computer is used to help people in decision making process.
2. Complete the following sentences with the appropriate words: program, information, processing of information, software, connectivity, computer, and people.

1) … doesn’t come to life until it is connected to other parts of a system.
2) … is the term used to describe the instructions that tell the hardware how to perform a task.
3) … create the computer software instructions and respond to the procedures that those instructions present.
4) Information in the form of instruction is called a…
5) The manner in which the various individual systems are connected is…
6) … is organized, processed and useful for decision making.
7) The basic job of the computer is the…

Text V

Pre-reading task
1. Read the text “What is a Microprocessor”?
2. Study the definition of terms given below the text.
3. Discuss the following questions in group:
   a) Find in the text the definition of a microprocessor. What kind of new information has been added to its content?
   b) What is the history of the invention of this logic device?
   c) What is the feature of bit-sliced chips made by the bipolar technology?

What is the microprocessor?

A microprocessor is the central arithmetic and logic unit of a computer, together with its associated circuitry, scaled down so that it fits on a single silicon chip (sometimes several chips) holding tens of thousands of transistors and similar circuit elements. It is a member of the family of large scale integrated circuits that reflect the present state of evolution of a miniaturization process that began with the development of the transistor in the late 1940’s. A typical microprocessor chip measures half a centimeter on a side. By adding anywhere from 10 to 80 chips to provide timing, program memory, random-access memory, interfaces for input and output signals and other ancillary functions, one can assemble a complete computer system on a board whose area does not exceed the size of this page. Such an assembly is a microcomputer, in which the microprocessor servers as the master component. The number of applications for microprocessors is proliferating daily in industry, in banking, in power generation and distribution, in telecommunications and in scores of consumer products, ranging from automobiles to electronic games.
As in the central processing unit, or CPU, of a larger computer, the task of the microprocessor is to receive data in the form of strings of binary digits (0’s and 1’s), to store the data for later processing, to perform arithmetic and logic operations on the data in accordance with previously stored instructions and to deliver the results to the user through an output mechanism such as an electric typewriter, a cathode-ray-tube display or a two-dimensional plotter. A typical microprocessor would consist of the following units: a decode and control unit (to interpret instructions from the stored program), the arithmetic and logic unit, or ALL (to perform arithmetic and logic operations), registers (to serve as an easily accessible memory for data frequently manipulated), an accumulator (a special register closely associated with the ALL), address buffers (to supply the control memory with the address from which to fetch the next instruction) and input-output buffers (to read instructions or data into the microprocessor or to send them out).

Present microprocessors vary in their detailed architecture depending on their manufacture and in some cases on the particular semiconductors technology adopted. One of the major distinctions is whether all the elements of the microprocessor are divided among several identical modular chips that can be linked in parallel, the total number of chips depending on the length of the ‘word’ the user wants to process: four bits (binary digits), eight bits, 16 bits or more. Such a multichip arrangement is known as a bit-sliced organization. A feature of bit-sliced chips made by the bipolar technology is that they are ‘micro programmable’: they allow the user to create specific sets of instructions, a definite advantage for many applications.

Vocabulary:
1) Random-access memory – strictly a computer memory, structured, so that the time required to access any data item stored in the memory is the same as for many other item. Now more often used to describe a semiconductor memory that can be used for reading and writing data.
2) Cathode-ray-tube – a device used to generate pictures as found in a television or visual display.
3) Control unit – the part of the computer which directs the sequence of operations, interprets the instructions, and provides the requisite signals to execute those instructions.
4) Arithmetic and logic unit – a device which executes arithmetic and logic operations according to the instructions in a program.
5) Accumulator – a register in which numbers are totaled, manipulated, or temporarily stored for transfers to and from memory or external devices.
6) Address – a unique label, name or number that identifies a memory location or a device register for access by a computer. To send an address to a memory or a device in order that a particular location in memory or the device may be identified.
7) Fetch – the action of reading data or instructions from memory.
1. Give the Russian equivalents to the following:
Silicon chip, microprocessor chip, modular chips, multi-chip arrangement, arithmetic and logic unit, central processing unit, a cathode-ray tube display, a two-dimensional plotter, address buffer, a bit-sliced organization, strings of binary digits, interface, program memory, random-access memory

2. Give the English equivalents to the following:
процессор, кристалл, синхронизация, адресный буфер, выходной сигнал, собирать по одной плате, хранить данные, двоичный знак, логические и арифметические операции.

Text VI

Pre-reading task
1. Are you a part of computer revolution?
2. You are going to read a set of texts about the World Wide Web. Discuss in group why you really need the Internet. What factors influence your decision?
3. Read the text “What is the Internet?” and discuss the following questions:
   a) Do you use Internet?
   b) Why so many activities such as e-mail and business transactions are possible through the Internet?
   c) What is World Wide Web?
   d) What is Web browser?
   e) What does a user need to have an access to the WWW?
   f) What are hyperlinks?
   g) What resources are available on the WWW?
   h) What are the basic recreational applications of WWW?

What is the Internet?

What is this computer phenomenon called the Internet, or the Net? Do you personally have need of it? Before you decide to get "on" the Internet, you may want to know something about it.

Millions of people around the world use the Internet to search for and retrieve information on all sorts of topics in a wide variety of areas including the arts, business, government, humanities, news, politics and recreation. People communicate through electronic mail (e-mail), discussion groups, chat channels and other means of informational exchange. They share information and make commercial and business transactions. All this activity is possible because tens of thousands of networks are connected to the Internet and exchange information in the same basic ways.

Using the Internet, David, a teacher in the United States, acquired course materials. A Canadian father accessed it to stay in contact with his daughter in
Russia. A housewife used it to examine scientific research on the early beginnings of the universe. A farmer turned to it to find information about new planting methods that make use of satellites. Corporations are drawn to it because of its power to advertise their products and services to millions of potential customers. People around the globe read the latest national and international news by means of its vast reporting and information services.

The World Wide Web (WWW) is a part of the Internet. But it's not a collection of networks. Rather, it is information that is connected or linked together like a web. You access this information through one interface or tool called a Web browser. The number of resources and services that are part of the World Wide Web is growing extremely fast. In 1996 there were more than 20 million users of the WWW, and more than half the information that is transferred across the Internet is accessed through the WWW. By using a computer terminal (hardware) connected to a network that is a part of the Internet, and by using a program (software) to browse12 or retrieve information that is a part of the World Wide Web, the people connected to the Internet and World Wide Web through the local providers 13 have access to a variety of information. Each browser provides 14 a graphical interface. You move from place to place, from site 15 to site on the Web by using a mouse to click on a portion of text, icon or region of a map. These items are called hyperlinks 16 or links. Each link you select represents a document, an image, a video clip or an audio file somewhere on the Internet. The user doesn't need to know where it is, the browser follows the link. All sorts of things are available on the WWW. One can use Internet for recreational purposes. Many TV and radio stations broadcast live17 on the WWW. Essentially, if something can be put into digital format and stored in a computer, then it's available on the WWW. You can even visit museums, gardens, cities throughout the world, learn foreign languages and meet new friends. And, of course, you can play computer games through WWW, competing 18 with partners from other countries and continents. Just a little bit of exploring the World Wide Web will show you what a lot of use and fun it is.

Vocabulary:
1) to retrieve — извлекать
2) variety — разнообразие, спектр
3) humanities — гуманитарные науки
4) recreation — развлечение
5) to share — делить
6) business transactions — коммерческие операции
7) network — сеть
8) access — доступ
9) World Wide Web — «Всемирная Паутина»
10) to link — соединять
11) browser — браузер (программа поиска информации)
12) to browse — рассматривать, разглядывать
13) provider — провайдер компания, предоставляющая доступ к WWW через местные телефонные сети
14) to provide — обеспечивать (чем-либо)
15) site — страница, сайт
16) hyperlink — гиперссылка
17) broadcast live — передавать в прямом эфире
18) to compete — соревноваться

1. Are the following statements true or false? Prove your answers.
1) There are still not so many users of the Internet.
2) There is information on all sorts of topics on the Internet, including education and weather forecasts.
3) People can communicate through e-mail and chat programs only.
4) Internet is tens of thousands of networks which exchange the information in the same basic way.
5) You can access information available on the World Wide Web through the Web browser.
6) You need a computer (hardware) and a special program (software) to be a WWW user.
7) You move from site to site by clicking on a portion of text only.
8) Every time the user wants to move somewhere on the web he/she needs to step by step enter links and addresses.
9) Films and pictures are not available on the Internet.
10) Radio and TV-broadcasting is a future of Internet. They're not available yet.

2. Complete the following sentences with the appropriate words: web browser, providers, link, WWW.
1) You access the information through one interface or tool called a ...
2) People connected to the WWW through the local ... have access to a variety of information.
3) The user doesn't need to know where the site is, the... follows the ...
4) In 1996 there were more than 20 million users of the ...
5) Each ... provides a graphical interface.
6) Local ... charge money for their services to access... resources.

Text VII

Pre-reading task
2. Read the text “The World Wide Web” and discuss the main idea of the text:
The World Wide Web

The part of the Internet called World Wide Web (or Web) allows authors to use an old-fashioned idea - that of footnotes - in a new way. When an author of a magazine article or a book inserts a footnote symbol, we scan the bottom of the page and are possibly directed to another page or book. Authors of Internet computer documents can do essentially the same thing using a technique that will underline or highlight a word, a phrase, or an image in their document.

The highlighted word or image is a clue to the reader that an associated Internet resource, often another document, exists. This Internet document can be fetched and displayed immediately for the reader. The document may even be on a different computer and located in another country. David Peal, the author of “Access the Internet”, notes that this technique "links you to actual documents, not just references to them."

The Web also supports the storage and retrieval, or playing, of photographs, graphics, animations, videos, and sounds. Everyone can obtain and play a short color movie of the current theories regarding the universe and hear the narration through computer's audio system.

Text VIII

Pre-reading task
1. Have you got the Internet connection at home?
2. How often do you surf the net?

Surfing the Net

By using a Web browser, a person can easily and quickly view information and colorful graphics that may be stored on computers in many different countries. Using a Web browser can be similar in some ways to actual travel, only easier. One can visit the Web exhibits of the Dead Sea Scrolls or the Holocaust Memorial Museum. This ability to move nimbly back and forth from one Internet Web site to another is commonly called surfing the Net.

Businesses and other organizations have become interested in the Web as a means to advertise their products or services as well as to offer other kinds of information. They create a Web page, a sort of electronic storefront window.

Once an organization's Web page address is known, potential customers can use a browser to go "shopping," or information browsing. As in any marketplace, however, not all products, services, or information provided on the Internet are wholesome.

Researchers are trying to make the Internet secure enough for confidential and safeguarded transactions. We will talk more about security later.
Text IX

Pre-reading task
1. Do you have a “nickname”? 
2. Do you think it is possible to find your second half through the Internet dating offices?
3. Do you visit chats? How much time do you spend there?

What Is "Chat"?

Another common service of the Internet is the Internet Relay Chat, or Chat. Chat allows a group of people, using aliases, to send messages to one another immediately. While used by a variety of age groups, it is especially popular among young people. Once connected, the user is brought into contact with a large number of other users from all around the world.

So-called chat rooms, or chat channels, are created that feature a particular theme, such as science fiction, movies, sports, or romance. All the messages typed within a chat room appear almost simultaneously on the computer screens of all participants for that chat room.

A chat room is much like a party of people mingling and talking at the same general time, except that all are typing, short messages instead. Chat rooms are usually active 24 hours a day.

Match the words or phrases (1-6) to the definitions (a-f).
1. chat room
2. e-commerce
3. joystick
4. cyberspace
5. desktop
6. multitasking

a) the ability of a computer to run several programmes at once; 
b) the screen you see after you’ve switched your computer; 
c) an area on the Internet where people can communicate with each other in ‘real time’; 
d) the business of buying and selling goods and services in the Internet; 
e) a sick which helps to move in computer games; 
f) the imaginary place where electronic messages, information pictures, etc. exist when they are sent from one computer to another.

Text X
Services and Resources of the Internet

A common resource provided by the Internet is a worldwide system for sending and receiving electronic mail, known as e-mail. In fact, e-mail represents a large portion of all Internet traffic and is for many the only Internet resource they use. How does it work? To answer that question, let's review the ordinary mail system first.

Imagine that you live in Canada and wish to send a letter to your daughter living in Moscow. After properly addressing the envelope, you mail it, starting the letter's journey. At a postal facility, the letter is routed to the next location, perhaps a regional or national distribution center, and then to a local post office near your daughter.

A similar process occurs with e-mail. After your letter is composed on your computer, you must specify an e-mail address that identifies your daughter. Once you send this electronic letter, it travels from your computer, often through a device called a modem, which connects your computer to the Internet via the telephone network. Off it goes, bound for various computers that act like local and national postal routing facilities. They have enough information to get the letter to a destination computer, where your daughter can retrieve it. Unlike the regular mail, e-mail often reaches its destination, even on other continents, in minutes or less unless some part of the network is heavily congested or temporarily out of order. When your daughter inspects her electronic mailbox, she will discover your e-mail. The speed of e-mail and the ease with which it can be sent even to multiple recipients all over the world make it a popular form of communication.

Choose the correct answer – a, b or c.
1. What do you use a modem for?
   a) to print a document  b) to play music  
   c) to send messages along a telephone line

2. What do you see when you want to look for sites on the World Wide Web?
   a) a browser  b) a CD-ROM  c) a printer

3. What can you use the Internet for?
   a) to delete a file from your computer  
   b) to help you find information and communicate with people  
   c) to make your computer work faster

Text XI

Pre-reading task
1. You are going to read four texts about pocket radios and miniature computers. Divide into groups and discuss the main idea of the texts.
2. What other types of miniature computers and radios do you know?
3. Do you know what the word “wireless” means?

**Miniature Radios and computers**

**Pocket Radios**

The transistor's compactness and low power requirements also brought a new day in a host of simpler devices. Radio receivers hardly larger than a package of cigarettes were on a reality in 1956-58 the transistor found one of the most spectacular applications. It helped Russian and American specialists to launch the first satellites and to open the space age. Only a few of the biggest satellites have been able to carry vacuum-tube equipment. Most satellites have appended on transistors not only for reporting back to the earth but for operating the instruments with which the satellites explored the mysterious regions around the earth.

But the most striking aspect of the transistor is not the host of devices it made possible. More important was its effect on a new branch of science and technology which may be called “solids-state electronics”.

**Pocket-size TV Camera**

The ultra-miniature TV camera was made possible by a new design approach, which combines transistors, specially developed transistor circuitry and a new half-inch vidicon camera tube.

The pocket-size TV camera (JTV-1) weighs less than, pound and measures only 1 7/8ths by 2 3/8ths by 4 1/2 inches. It can be operated in the palm of the hand, used with an attachable pistol-grip handle, bolted to wall or floor, or mounted on a tripod. It is the first TV camera of its type to incorporate a photoelectric control, which enables the camera to accommodate changes in the order of 100 to 1 in scene lighting.

Made rugged for military airborne, mobile, and field requirements the pocket-size camera has high resistance to shock and vibration.

Simple in design and operation, the camera can be operated by non-technical personnel.

**Molecular Computer**

A small computer with molecular blocks as its "brain" is being developed. The new device, called a Mol-E-Com, will weigh 14 pounds and occupy less than one-third of a cubic foot. A solid semiconductor crystal with its internal structure rearranged as a functional electronic block replaces the tubes, transistors, and resistors in conventional miniaturized circuitry.

Mol-E-Com is expected to have the same capabilities as a transistorized computer ten times its size and weight, making it useful for rockets
Miniature Computer is size of Bread Loaf

A compact electronic computer about the size of a loaf of bread, yet capable of working as fast as a room size computer, has been demonstrated successfully.

The baby computer, is called Maddam, a name derived from Macro-Module and Digital Differential Analyzer Machine.

The scientists indicate that the Maddam is a special purpose computer to be used only for military requirements as they develop. The working model was built to show that existing electronic components can be used in shrinking a commercial computer from a room size to size of a desk, and that military electronic equipment can be compressed to a convenient size for aircraft, spacecraft, and missiles.

The computer has 5,500 components housed in a space measuring three inches by six inches by 11 inches, and a component density of 69,000 components per cubic foot. It weighs 12 pound and can perform 33,000 mathematical calculations per second.

Part II. Supplementary Reading Section

Text 1

Pre-reading task

1. Read the text “A Will to Learn” and discuss the following questions in group:
   a) What made you choose University rather than another higher educational institution? Give your reasons.
   b) What is to be a Bachelor student?
   c) What subjects are included in the first-year curriculum at your faculty? What subject is the most interesting; the least interesting; the one you think the most important; the one you find the most difficult?
   d) Was it easy for you to get accustomed to the University system of lectures and seminars after the school system of classes and home tasks? Which are more useful in your opinion — lectures or seminars? Do you have to work much after your lectures and seminars are over? Do you often work at the University library? What are the advantages and disadvantages of working at the library, at home, at a hostel?

2. Share your own opinion on the following problems:
   a) What is learning power?
   b) What qualities are necessary in order to become educated? What modern conditions exist which make it possible for a person to become educated and cultured? Can you think of other factors? What is the role of a teacher in this
process? Why is the greatest teaching sometimes only of partial value? Do you agree that a student cannot be lifted beyond the limits of his ability?

c) Why is one's pre-university level of knowledge important?

d) Do you agree that learning power is the primary need among universities?

e) What is more important for good education - learning power or good teaching? Why? What do you thing about will to learn? Is it great enough?

A will to Learn

No human activity, be it work or study, can be performed without will power. You may do everything possible to carry out what you've planned, to finish what you've started, to complete what you've aimed at. It seems so easy, yet how many things are left unfinished - books that we haven't read to the end, academic subjects that we haven't studied thoroughly, promises that we haven't kept, things that have been left undone, not thought over, goals that haven't been reached. There are a lot of people who tend to justify (находить оправдание) this by thinking: "This is insignificant, it isn't worth the trouble, so why worry?" Some say: "I'll set myself a goal and I'll reach it by all means". But if you do not accustom yourself to carrying out the small things and bear your aim in mind from the moment of its conception (зарождение) to its complete realization, you'll never achieve any great goal.

There are a lot of legends about absent-minded scientists, how they forget to put on their coats and some such things. But is it a matter of absent mindedness or just deep concentration on other things? It was not the apple that had fallen on Newton's head that gave rise to the law of gravity but his great concentration on the problem about which he had kept thinking day and night. And another thing is you should know a lot to be able to formulate and keep in focus great humane (человечный, гуманный) aims. (By Academician R.V. Petrov)

Discuss the following questions in group:

a) Do you always try to carry out what you've planned, to finish what you've started?

b) Do you leave many things unfinished? What are they? Do you always keep your promises?

c) Do you try to find excuses for not doing things?

d) Are you absent-minded? Do you forget things? Is it because you are concentrating on something important or you simply don't pay attention to such things?

e) Do you agree with Academician Petrov about the importance of will power? What other things are necessary if you want to succeed in some field of human activity?

f) In what ways did school influence you? Was it a formative influence in your life? Which of the teachers influenced you most? What subject did he/she teach?
g) Was there a friend who influenced you or did you influence him/her?

h) Looking back to your school experience, can you say what factors in school life influenced you most: teachers, friends, extracurricular activities, etc.?

Give enough evidence to prove your point.

i) Are you easily influenced by people with greater life experience than yours?

j) What books influenced you most in your school years?

k) What evidence is there which suggests that school plays a great part as a formative influence today?

**Text 2**

**Pre-reading task**

1. What is an argument?
2. Can we state that an argument is an important element of any scientific discussion?
3. Do you know the proverb: “It’s funny how the strongest words show up in the weakest arguments”? Try to find out the Russian equivalent.
4. Read the text “Argument” and discuss this problem in group.

**Argument**

An argument is not a quarrel. Originally to argue meant to make clear, and thus to show, to prove, to give evidence. An argument is a presentation of reasons for or reasons against something; it means that the person who states an argument has tried to understand the matter in question and that he is using his powers of reasoning to show how the evidence supports his position.

In an argument one person may win, if he wins, he wins because his evidence is greater in quantity or superior in importance to the evidence of the other persons or because he reasons better, shows more clearly the logical conclusions that must be drawn from the material. Even the opponent may be completely convinced by the winning argument - particularly if he had not thought very much or very deeply about the subject before. To win an argument properly, then, one should have both knowledge that gives evidence and good powers of reasoning.

One must remember that mere assertion has no value in argument. There is any number of assertions which people make, and their statements may represent very strong belief, yet such statements, without evidence, will not convince another person that they are true. People disagree on a great many questions, but often they disagree because they have not thought enough about these questions, because they have not gathered evidence or have not analyzed the evidence (From “A Writing Apprenticeship” by Norman Britton).
Discuss the following questions in group:

a) Do you agree with the first statement? Is it positive and emphatic?

b) What did "to argue" originally mean? What is an argument? What does it mean?

c) How many people may win an argument? What are the ways to win an argument? What does the victory depend on: on the strength of the evidence or the personality of the speaker?

d) Are opponents easy to convince? Why? Why not?

e) Has mere assertion any value in an argument? Will it convince another person without evidence? Why not?

f) Give 3 possible reasons why people may disagree on some questions. Can you think of any other possibility?

g) Look back at what kind of evidence does Leacock use to convince the reader. Is there enough evidence to convince the audience? What assertions does he make that are not based on any evidence?

h) Does it matter which pieces of evidence are presented first and presented last? Give your reasons.

Text 3

Pre-reading task
1. Is it necessary to prepare for a group discussion by thinking, talking and reading about the problem under consideration?

2. Read the text "Preparation for a Discussion” and give your opinion on the subject.

Preparation for a Discussion

Many discussions fail because the participants haven't done enough preparation. Everyone must think, talk and read about the topic before the discussion takes place. When the topic is announced:

1) Think about it. What is your opinion? On what evidence is it based?

2) Talk to others about it. Discuss it with your friends and parents. If you know someone who is an authority on the subject, discuss it with him. Be ready to change your previous opinion in the light of new evidence.

3. Consult reference books, recent publications and magazine articles. Inform yourself as thoroughly as you can about the topic. Keep an open mind while you are learning.

Duties of participants in a group discussion

The chairman should:
1) Know the subject thoroughly.
2) Make a brief introductory statement.
3) Introduce the speakers to the audience.
4) Ask questions to stimulate discussion.
5) See that everyone has a chance to speak.
6) Summarize the discussion.
7) Thank the audience and the speakers.

A speaker in a group discussion should:
1) Know the subject thoroughly.
2) Listen intelligently. When you agree with another speaker, listen to increase your information on the subject. When you disagree, listen to accept a different viewpoint if it is supported by sufficient evidence.
3) Speak so that everyone can hear.
4) Recognize and acknowledge the truth of what others say.
5) Always be polite. Sarcasm is out of place. Self-control is a mark of maturity (зрелость). Disagree reasonably - and with factual evidence.

A member of the audience should:
1) Know the subject thoroughly.
2) Listen attentively. Ask yourself: what evidence is offered in support of each important argument? Take notes as you listen.
3) Join in when the chairman invites the audience to participate. A discussion in which there is general participation is more stimulating and interesting than one in which only a few take part.
4) Focus on the main issues.
5) Speak audibly and distinctly (so that all may hear).

Text 4

Pre-reading task
1. What is the way to organize a round table discussion?
2. Formulas for Scientific Communication (p.) will help you to group discussion, composing reports and writing abstracts on the given problem.
3. Study the following information and take part in a round-table discussion.

Round-table Discussion

The round table is a form of group discussion in which the participants exchange views around the table (not necessarily round!) under the leadership of a chairman. The number of participants usually does not exceed a dozen.

Problems for discussion:
1) The role of science in modern society.
2) New trends in university education.
3) University students of the 21st century, qualities and qualifications.
4) An ideal university student; an ideal university teacher.
5) Computer is the modern wonder of the world.

Answer the following questions:
1) What is your research problem?
2) What is of special interest in the problem of your research?
3) What is the subject of your research?
4) Why has the interest in this problem increased considerably in recent years?
5) Do you follow/stick to any theory/hypothesis/concept? What is it?
6) What concept is your research based on?
7) How does your research differ from other studies on the same problem?
8) Has your research problem attracted much attention in recent years? Has it been widely studied?
9) What aspects of the problem have been considered over the last few years?
10) Who was the first to recognize/point out the problem?
11) What aspects of the problem did researchers concentrate on at that time?

Text 5

Pre-reading task
1. Read the text “How to Read in English”.
2. Write down things that were new to you and that you never used to do before when reading in English.
3. In future try to follow this competent advice.

How to Read in English

When you begin to read silently and you come to words and phrases that are new to you, use the following techniques: 1) Read the passage through for general sense first, without stopping to puzzle over unfamiliar words or constructions; then go back for a second, more careful reading. When you come to an unknown word read on at least to the next punctuation mark before you look it up. Try to get the meaning from the sentence without having to look for it in the dictionary. 2) When you decide that you must look up a word, (a) underline the word with your pencil, (b) take a good look at the phrase that contains it, and pronounce the phrase aloud, (c) repeat the phrase over and over, aloud if possible, concentrating all your attention on its sound and spelling while you are looking for a key word in the vocabulary or dictionary, (d) when you find it, put a dot (точка) before the word in its column, (e) turn back to your page, find the last underlined word, and go on reading. Never write the translation into your language on the page. Doing so puts the emphasis on the native language equivalent and not on the English word, which
is the word that you must learn. When you finish your assignment, reread it and see
how many of the phrases containing underlined words you still understand. Look up
the words you haven’t yet learned and put another dot in front of them in the
vocabulary list; look through the vocabulary once a week and make a special effort
to learn the words with several dots. These are your “hard” words. Learn them now,
or you will be spending hours looking them up month after month, year after year.
And go back over your reading material to check your understanding of the
sentences that have underlined words and phrases.

If you want to learn English well, the skills that you acquire will be helpful in
foreign language learning whenever and wherever you learn it. You may then have
to work with inadequate materials or with no materials at all and with a person who
has had little or no training as a teacher. But if, in learning English, you have also
learned how to study languages in general, you will be able to apply this skill to
study other languages at any time or place.

Part III. Phrases for Scientific Communication

This section contains recommendations on writing and presentation a
research paper and a scientific report.

Thinking about your Presentation

Answer the questions:
1) What is the topic of the paper you are going to presents?
2) Why are you interested in this particular topic? Do you always prepare for
presentations?
3) What recommendations for making oral presentations do you find most
helpful?
4) Which ones do you always follow?
5) State your purpose – be specific.
6) Identify the central idea of your presentation.
7) List the main points of your presentation.
8) Think of supporting material for each main point.
9) Decide what kinds of visual aids you will use.

Read and practice some useful paper speech patterns.

I. Introductory Paper Speech Patterns

Mr. Chairman, ladies and gentlemen.
I am greatly honored to be invited to this conference. In this paper I would
like to talk about the concept of ... The object of this paper is to show ...
To begin with, let us imagine that ... As many of you know ...
First of all I would like to ...
I am sure I don't have to remind you that ...
I am very pleased to have this opportunity to ... In my paper I want to highlight ... 
In the introduction to my paper I would like to ...
I tell this story because ...
I want to begin my presentation with ... Let me begin with ...
The first thing I want to talk about is ... The subject that I will discuss is ...

II. List of Phrases to Write an Introduction

1. Formulate the problem and identify the methods of research.
2. Give the historical background of the investigation:
   a) During the past decade there has been increasing research into ...
   b) In some theoretical studies ...
   c) ... were able to provide a fully generalized, compact simultaneous solution to ...
      d) In particular, they employed ... for ...
   e) ... is an important and common problem.
   f) It has become a canonical problem in the study of ... providing a valuable test for simulation methods or theoretical models.
   g) In the previous paper ... we used a specific model for ...
   h) Th paper examines a method for ...
      i)Earlier descriptions of the ... assumed that ...
   j) However, detailed experimental studies of ... indicate that ...
   k) The most treatments available are restricted to the ...
   l) Accordingly, we suggest that ...
   m) To date a number of different interpolation techniques have been used in ...
   n) In Section 2 paper continues with a discussion of ...
   Section 3 overviews ... Section 4 then proposes ... and this matter is discussed in Section 5. Finally in Section 6 we discuss ...
   o) Several techniques have been used to investigate ...

3. Make a brief review of related literature:
   a) There is a wide body of literature which suggests that ...
   b) ... effects have received much attention.
   c) There were the limited number of studies conducted on ...
   d) The listings of the program may be found in ...
   e) Examples are given in ...
   f) Extensive field studies were undertaken by the scientists at ...

4. Justify the need for your investigation:
   a) Thus heat transfer regime has received little attention ...
b) It is therefore important to establish the ...

c) Studies on the ... process have been and still are of the interest because of the ...

d) In spite of significant recent advancement in the fundamental understanding of... several important aspects of the ... still remain controversial.

e) ... investigations have been proved very valuable in ... but they do not give a complete picture of ... since they eliminate ...

f) Most of the above investigations concentrated on the general effects of... and did not look carefully at the ...

g) There is still lack of knowledge of ... Much further research is needed to understand ...

h) There is still no complete knowledge of ...

i) There are still many gaps in our knowledge of the problems of ...

j) We still know very little about the origin of ...

III. Speech Patterns for the Body of the Paper

According to this theory...

After this, I need/it remains only to say that ... Again, I want to emphasize that...

It should be emphasized that ... It should be pointed out that...
Let me give you my explanation of ...
Let me now turn to ...
Let us consider what happens if ...
Let us have a closer look at
Let us imagine that
Let us suppose that

Now I come to ... On the contrary ...
On the one hand ..., on the other hand ... Primarily ...
This is indeed the case when ...
This in turn implies ...
This is particularly true for ...

IV. Closing Paper Speech Patterns

Since I am running out of time ... As my time is running out...
Before I close I would like to emphasize the importance of ... Finally I want to say a few words about ...

I end this paper with a description of ...
I leave it to you to judge ...
In closing I want to mention very briefly ... In conclusion, let me say ...
In conclusion, may I repeat... . Summing up, I would like to ...
The last part of my talk will be devoted to ...
To all this must be added that...

V. Formulas for Scientific Communication.

Practice the following phrases in scientific problem discussion.

Establishing Contacts
I’m glad you’ve asked me that question

Agreeing
Yes, indeed.
I think you are entirely right.
It appears to me
to be true.
I agree that...
That’s just what I think.

Disagreeing
I am arguing against...
I would object just a little...
I object to...
I wish I could agree with you but...

Expressing surprise
It is rather surprising...
It is unbelievable...
I am puzzled by...
I wonder about...
find it hard to believe that...

Expressing uncertainly
It seems unlikely that...
I have doubts about...
I am not at all sure about...
I am not yet certain..
I am doubtful whether...
I have been rather puzzled by...
I doubt it.

Making contribution
In connection with ...
I would like to add
Let me add that...
In addition I would like to mention...
I would add that.

Calling attention
I want to point out that...
I would like to note.
I would like to stress the importance of...
It is worth pointing out that...
I would like to draw your attention to...
I would like to call attention to...
Making assessment
The paper/report raises an important question ...
This method is particularly important because...
The paper/report demonstrates how important it is to...
These results/data are of particular interest.

Provoking arguments
Would you agree with...?
There seems to be some contradiction between your points of view.
Does that mean you think...?

Asking for details/classification

Introducing opinions/attitudes
Could you be more specific about...?
I am not clear about...

You give us/me some more facts to back that up, please?
Well, I'd like to say that... What I think is

Delaying an answer
Well, let me see...
Well, now...
That's a good question...
Oh, let me think for a moment...

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