
UNIT 4 SCIENCE & TECHNOLOGY ISSUES

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4.0 INTRODUCTION

Science and Technology (S&T) are increasingly determining the development and lifestyle of human beings on this earth. The science includes aspects such as technology, nature and medicine. Science has increasingly played an important role in moulding human society by its innovations, theories and discoveries, and is expected to do so in more ways in future as well. Therefore reporting about such essential aspects of our lives becomes essential and a fascinating endeavour.

Science, Technology and mass media have a long-standing relationship with each other. Mass media makes scientific knowledge citizen-friendly by keeping the public informed of the latest developments in Science and Technology. Great deals of scientific information common people have comes from mass media sources. Science writers and journalists shape mass consciousness about science-related events (Nelkin, 1995). Mass media is increasingly being viewed as

necessary for the science and scientific community, which recognizes the power of media for its ability to facilitate interaction between the scientific establishment, public, interest groups and policymakers. Mass media, in this sense, has become the primary channel through which scientific notions and latest technological progress can be conveyed to the people.

4.1 LEARNING OUTCOMES

After studying this Unit, you should be able to:

- explore the relationship between science, technology and mass media;
- discuss major events in the history of science journalism;
- outline major forms of science and technology reporting;
- explain some contemporary scientific and technological developments;
- analyse reporting on controversies regarding science and technology; and
- explain issues related to science and technology reporting.

4.2 CONTEMPORARY SCIENCE & TECHNOLOGY DEVELOPMENTS

Scientific research and technology is playing a major role in empowering and uplifting masses all across the developing world. From food security for millions of people to computational tools and space technology, science and technology is becoming a primary factor in determining economic growth. The advanced countries also exercise power through science diplomacy. It is argued that scientific knowledge and technological innovations will play a key role in attaining the goal of sustainable development in emerging economies like India.

By means of its acquired scientific standing and technological progress in Post-Independence era, India has been successfully dealing with the age-old problems of food insecurity, poverty and high mortality rates. The country is recognized today as one of the emerging global scientific power.

Contemporary developments in science and technology are radical, disruptive and possess far-reaching effects on humans and other living systems on this earth. Some of these technologies and developments will also have socio-political and socio-economic impacts on cultures across the globe. Hence as science journalists, it is important for you to keep a tab on such developments. Following is a brief description of few such technological developments.

4.2.1 Stem Cell Research

Stem cells are living cells that can change into other types of cells. Each multi-cellular organism such as animal and plant has stem cells. In mammals such as humans two types of stem cells are embryonic stem cells and adult stem cells. Embryonic stem cells are found in early stage of human embryos and adult stem cells are found in various tissues of adults. These stem cells operate as repair system for the body. While the embryo is still developing into a fetus, stem cells are able to differentiate into all the specialised cells such as outer skin and various internal organs. There are various medical applications of stem cells. For example,

adult stem cells are used in therapies such as bone marrow transplantation. Stem cells are now artificially cultured and transformed into any types of cell such as muscles or nerve cells. Embryonic stem cells can be taken from umbilical cord blood immediately after a child's birth. It is expected that stem cell therapy (also called as cell replacement therapy or regenerative medicine), would in future help in treatment of diseases such as stroke and brain injury, baldness, heart diseases, deafness, diabetes, cancer, wound healing and male infertility.

Stem cell research initially caught a lot of media attention because of ethical and political controversies tied to it. The main controversy was related to development, use and destruction of human embryos for the sake of using embryonic stem cells.

4.2.2 Genetically Modified (GM) Food Technology

Genetically Modified (GM) technology allows scientists to transfer genes with specific traits between species using laboratory techniques. Some examples of GM application in plants and animals are bananas that have vaccine effect in them, fish that matures quickly, fruits that yield years earlier and plants that can produce new plastics. Application of GM technology in plants includes nutritional enhancement, disease resistance and bio-fuel efficiency. As they are referred to sometimes, GM crops or transgenics contain genes from another species, which gives them some specific properties like resistance to a particular disease. The principal transgenic crops grown commercially in some countries include soybean, corn and cotton. India has allowed only GM cotton for commercial cultivation in the country.

There is an ongoing debate regarding the potential health risks and environmental side effects, and the potential benefits of GM crops. Controversy and public concern around GM food and crops are related to human and environmental safety. What impact will they have on the environment and biodiversity and human health?

In India, reporters widely covered GM debate when Bt Brinjal (a GM variety of brinjal) was approved for commercial cultivation in the country. Due to resistance from civil society and few other organisations and its subsequent coverage in mass media, a moratorium was finally put on it by the Government of India.

4.2.3 Artificial Intelligence

Artificial Intelligence (AI) is a way of making computer, robot or a software think intelligently just like humans do. AI is also the study and design of intelligent machines, which have ability to learn from experience, adjust and respond to new inputs and perform human-like tasks. The science of AI includes areas such as computer science, biology, neuroscience, psychology, linguistics, mathematics and engineering. Popular examples of AI include chess playing computers and self-driving cars.

AI is among the most debated technological issue in media today. The questions which are raised in the context of emerging intelligent machines include those related to control. How do we control such a complex intelligent system is what worries thinkers and intellectuals. It is argued that at some point of time in future, machines and robots will become so sophisticated and clever that human being

will no longer be the most intelligent beings on the earth. At that point of time, who will control whom will be a big challenge. Another problem with AI is that it is risk prone and how would this risk be managed or controlled is also a big question.

4.2.4 5G Wireless Technology

5G or 'fifth generation' represents next generation mobile networks. 5G is expected to revolutionise the way we communicate with each other and the way we carry out day-to-day business. 5G is expected to go beyond the limitations of 4G, 3G and 2G, offering exciting possibilities and a number of other applications. Some of the features of this new mobile technology are as follows:

- It will offer very high mobile and wireless internet speeds while at the same time expanding connectivity to a large geographical area. It is expected that 5G would be 200 times faster than its predecessor 4G.
- It will have better quality, voice and video calls.
- 5G would help in creation and expansion of advanced technologies in sectors such as transport (e.g. driverless cars), health (e.g. telemedicine), smart energy networks, smart agriculture and smart hyper-connected cities.
- 5G networks would be less energy consuming thus offering more battery life to handsets, tablets and other connected devices.

4.2.5 Internet of Things

The term 'Internet of Things' (IoT) is a general term which includes everything connected to the internet ranging from smart watch to washing machine to the kitchen oven. It refers to the eco-system of smart things both indoor as well as outdoor, which are connected to each other as well as to internet, thus exchanging data and information. The devices are fitted with sensors and software and thus can easily identify and connect wirelessly to each other. Journalists use this term quite often to point to the next connectivity revolution.

4.2.6 CRISPR Gene Editing Technology

Scientists say that once we understand the DNA sequence in cells and acquire tools and techniques that would allow easy manipulation of that sequence, we can create a revolution in biological world. CRISPR is a powerful technology that would allow scientists change the sequence of DNA in cells in a precise way to correct mutations that otherwise cause disease. CRISPR would enable us to do lot that was impossible to do in the past. It is an exciting technology that is going to change a lot of things in human health sector as well as in agricultural applications. CRISPR technology is being applied in food and agricultural industries to engineer probiotic cultures and to improve crop yield.

There is a word of caution in respect to the use of CRISPR technology and its applications such as with that of human embryos as it might lead to designer babies with desirable physical traits and talents. Some are also concerned about the experiments with DNA of disease spreading insects or to genetic enhancement crops or livestock because we are not aware about their unintended impacts on environment or human health.

Check Your Progress Exercise 1

- Notes:** 1) Use the space below for your answer.
2) Compare your answers with those given at the end of this Unit.
- 1) How mass media helps in legitimating scientific knowledge?

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- 2) What is Artificial Intelligence (AI)?

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4.3 SCIENCE AND TECHNOLOGY REPORTING

Science and Technology reporting is among major areas of reporting in the contemporary media landscape. Newspapers dedicate special pages and supplements for covering developments related to Science and Technology. Science is now gaining more and more prominence in mass media with more scientific events and technologies being covered by reporters on a daily basis.

4.3.1 Evolution of Science and Technology Reporting

We find that Science and Technology stories have always appeared in mass media. In earlier times, articles and descriptions were written by scholars explaining natural phenomena and basic scientific concepts. The aim was to make people understand the basic notions of science and scientific phenomenon. By the nineteenth century, several popular science magazines such as Scientific America and Popular Science were started. News editors began to reprint science lectures and published scientists’ descriptions of natural phenomena such as meteor showers. As science and technology intruded into our lives and science became more global, it gained more prominence, and media began to cover and report scientific events.

Among the first articles written by a science correspondent was ‘A Bale in the Bay of Biscay’. It was published in The Times in 1871. Science journalism took shape in the world with the appointment of James Crowther as the science correspondent of The Manchester Guardian in 1928.

The first science news service was founded in the US in 1903. Around the time of the Second World War and other scientific and technological developments, especially in war technology, science journalists began to be seen as

communicators, observers and critics of scientific developments, with their political implications. The technology of warfare, discoveries of planets and breakthroughs in medical science were easy for journalists to cover and write about because media editors readily accepted such news stories.

By the 1930s, some journalists were starting their careers in science reporting. They were becoming critical of the practice of science and journalism and social issues arising out of science and technology. In 1934 the National Association of Science Writers was formed in the US.

The European Union of Associations of Science Journalists (EUASJ) was founded in 1971. In 1974 science journalists from nine European countries met in Salzburg-Austria to discuss their role in the modern world. This conference was convened by the newly formed European Union of Associations of Science Journalists (EUASJ) and resulted in the Salzburg Declaration on Science Journalism. The conference, as well as the declaration, was the first of its kind in the world. Another milestone was achieved when The New York Times created a separate science section in 1978. By 1987, the US alone had some 147 newspapers with at least a weekly science page.

In India, modern science journalism evolved during the 1960s and 70s with the emergence of popular science magazines. The majority of mainstream Indian newspapers started dedicating columns or pages to science and technology news only in the late nineties. Science journalism saw its peak in the 60s and 70s, and then it decelerated during the 80s and 90s. It started to pick up with major national and regional dailies providing regular and dedicated space to science and technology. Lately, online news platforms have started employing science editors who have science degrees - unlike political reporters, who could be from any stream. Online platforms now have dedicated portals for science news.

4.3.2 What is Science and Technology News?

Science and technology news includes the account of scientific and technological developments which happen in the world around us. It is about reporting the conferences, advancements and discoveries from the field of science and technology or even infectious disease outbreaks, along with informing and explaining about their overall implications, be it social, political, economic or health. Nwabueze defines science and technology reporting as ‘the application of journalistic principles in conveying information about science and technology issues, topics and developments to the public through the mass media’ (Nwabueze, 2009; 324). News stories generally have short paragraphs and sentences. They are written and organized in a manner that ‘who’, ‘what’, ‘when’ and ‘where’ are mentioned in first paragraph of the news story.

4.3.3 Features of Science Reporting

Many breakthroughs and increasing relevance of science in today’s modern world have made science and technology reporting a specialized area in media. Science reporting is unique and differs from other journalistic beats. Science stories are usually shorter than other types of stories. Following are some special features:

- Science journalism is about reporting complex scientific issues to general audience.

- Science and Technology reporting sometimes involves reporting about incidents, events and concepts which are abstract, complex as well as difficult to understand for a layman audience. Hence a reporter should have a clear understanding of what s/he is going to write about and how to put that in layman’s language.
- Science and Technology reporting is about human progress and how the future would look like. So a reporter should be far-sighted enough as to visualize the future changes and impact.
- Science reporting also involves questioning the statistics; investigate scientific misconduct, conflict of interest and ethical breaches.
- Science is never static and new knowledge comes each day. A good science journalist should constantly keep him/herself updated.

The art of good science reporting demands two minimum requirements: basic knowledge of science and training in journalistic skills about how to cover science and technology issues. A good degree in science is no doubt helpful. However, some popular science journalists and science writers such as Carl Zimmer and David Quammen had no formal training in science. Great science writers such as Walter Sullivan of the New York Times and many other journalists and writers of science belonging to leading newspapers of the world were self-taught. However, one thing was common to all of them they had a passion for science and technology.

Check Your Progress Exercise 2

Notes: 1) Use the space below for your answer.

2) Compare your answers with those given at the end of this Unit.

1) What is science and technology news?

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2) What are the unique features of science and technology reporting?

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4.4 BECOMING A SCIENCE REPORTER

The following steps will be useful for science writing or reporting.

4.4.1 Steps in Science Writing

A good science story can be about an issue, a new research study, new technology or some new theory. It can even be something closely related to science such as some policy or a specific law related to any aspect of Science and Technology. It

may also warn us about the potential threat posed by a new technology or give a detailed account of a scientific controversy.

4.4.2 Sources of a Science Story

There are various sources of Science and Technology news. The following are some of the common sources:

Personal Observation

A reporter can identify some new development world of science. S/he may observe some new trends in his/her own surroundings which are worth reporting.

Scientific Journals and Publications

Such publications are a ready source of information about current research happening in field of Science and Technology. They contain results of various scientific studies done by scientists in laboratories around the world. The reporter should first understand them and then write a story based on the information in there publications.

Visit to science research institutes

Visit to such places can always yield newsworthy stories.

The Internet

Internet is the most accessible source of science news. A wide range of databases and websites on the internet are vital sources of scientific information.

Science Conferences and Conference Proceedings

Scientists of leading research institutes organize press conferences to make announcements about the new innovations and work done by them. Every year conferences are held where scientific community belonging to a specific discipline, meets and discusses new findings and current status of research in the area. Such conferences are important sources of news in specific areas such as nanotechnology, plant bio-technology and space science.

Interviewing a scientist

Interview is the exchange of information between a reporter and a source/scientist. Science and Technology reporting interview is a very important tool for digging out facts and figures which otherwise might be hidden from the public eye. You will read more about conducting interviews in sub-section 8.5.2 of this unit.

4.4.3 Tips for Writing Good Science Stories

Understanding the details

One must have a proper understanding of the concept as well as the context for writing a news story accurately. A reporter doesn't have to know as much as a scientist, to report any scientific issue or development. Only a basic understanding is required to contextualize the story and to supplement the facts with their own knowledge so that general readers can understand.

Any science and technology issue will have human application as well as impact. For every story, a journalist should ask, how this research or technology would affect my readers. Look for a human interest element in the story.

If a research or news has no impact on everyday life of people (such as astronomy), try to make it relevant for the readers. Sometimes scientific research is too complicated to understand. If you have doubts, on any point, visit a knowledgeable scientist and ask him/her to explain the details until you have understood the concept.

Use metaphors and analogies to explain difficult concepts

Metaphors and analogies are an important part of science writing. They help in creating images from everyday life and culture, which may be used to explain concepts and thus make science easier to understand. For example, atmosphere acts as a greenhouse.

Don't exaggerate and sensationalize the claims

Be careful with scientific claims. People generally trust such claims when they are put by a science reporter. Never try to exaggerate and make sensational claims which may not be true. Sensationalism is when a reporter puts a story or exaggerates any claim, in such a strong manner that it affects people. Similarly reporter should not say beyond what is true, to draw the attention. Sensationalising science and exaggerating the facts may lead to false hope or fear among the public.

Check and double-check your facts

Presenting accurate and precise facts is a must in science news reporting. Always double-check your facts. If doubts remain, check with an independent expert. Ask the question- what does the data in the study actually say or highlight? If you don't understand the data fully then you cannot competently report on science.

Be objective and balanced

Science and Technology reporter should present all sides of a story to readers, to enable them to make informed decisions. The story should be balanced without putting one's own prejudices and biases. However, balancing doesn't mean giving all viewpoints equal weight.

Write well, avoid jargons

Include those details in your story which readers want to know. Write crisp, clear and in logical order so that story has a flow. Stick to one idea in each paragraph. Avoid jargons and technical terms and instead use layman language.

Provide context and background details

The task of a science reporter is to provide relevant details and history regarding the study and also to place the developments in a proper context.

If you find the answer to your question from the author unsatisfactory, check with another expert and get feedback

4.5 FORMATS OF SCIENCE REPORTING

Science reporting and writing can take many forms and shapes depending upon the context, target audience, source of story and the purpose of writing. The following is a brief description of major forms of Science and Technology reporting.

4.5.1 Based on Research Paper

Most of the science stories you come across in mass media are based on the latest research published by accomplished academic and research journals. It is possible to write a good story based on the contents of a research paper. Following are the guidelines for covering a research article or paper:

- ***Reading the paper***

Do an exhaustive reading of the paper. The abstract gives the major points of the work. Read introduction, the discussion part and the conclusion. These provide context as well as observations and the future implications of the study. Read the data and statistics carefully before you draw any conclusions. Consult internet or read supporting material for understanding the complex concepts.

- ***Check the conflict of interest***

Check who is funding or sponsoring the project. This is generally mentioned at the end of a paper.

- ***Look at previous studies***

Look at the previous studies done on the same subject or theme in order to get a full picture. Generally information about previous studies is given in 'literature review' in a research paper.

- Put most important or major finding of the study first and then go on elaborating and giving context, implications etc.

4.5.2 Interviews

Interview with a scientist makes the story more interesting and adds to its impact. Get the authors to explain the results and their implications. Try to understand what the results mean in plain English. Catch a dominant line from the interview which you can put in the story as a direct quote in the story. There are various types of interviews that a science and technology reporter may use to acquire the required information:

Exclusive interview

This kind of interview is given to a reporter by a scientist or an expert, without any invitation extended to any other reporter. It takes place with prior consent of the interviewee and the information disclosed during the interview is known only to the reporter who conducts the interview.

Telephonic interview

This interview is conducted on the phone and is not face-to-face. The main advantage of this kind of interview is that it saves a lot of time and is also cost effective but may not yield detailed in-depth information.

Personality interview

This interview is conducted by reporter with a view to acquiring information directly from the person whose research work and discoveries the reporter wants to cover or write about. The person could be a celebrity or a well-known scientist.

Personality interview like exclusive interview is also fixed in advance with prior appointment. The reporter should do proper homework regarding the life and work of the scientist.

On-the-spot interview

This interview is conducted on the scene of an event - it could be done on the sidelines of an ongoing conference or even in a research laboratory where an important discovery is being made or some novel experiment is under-way.

Vox-Pop or voice of the people

It is conducted when a reporter wants to generate public opinion on an issue of public interest. e. g. it could be about some new technology, say mobile technology; pandemic like Corona virus; or a new medicine.

News interview

The aim of this interview is to gather background information that will help explain a news story.

While interviewing a scientist, a reporter should follow a proper interview technique:

- Introduce yourself adequately
- Be friendly, courteous and sympathetic. Generally scientists are media shy and don't speak with journalists. Make the scientist comfortable so that s/he opens up.
- Begin the interview with light and interesting questions so that s/he becomes comfortable with you. Drafting questions beforehand may help you to be more structured and systematic in the interview.
- Listen carefully to whatever is said and when needed pose questions arising out at the discussion. Take notes as you interview. You can also use a recorder or phone but first ask for the permission.
- Never agree to ask pre-agreed questions.
- Keep on asking questions until the issue or the concept is fully clear to you.

4.5.3 Press Conference

Scientific conferences are great places for meeting many scientists and finding new ideas. They are major scientific events as they bring together many renowned experts of a particular field at the same place, who may otherwise be difficult to contact. The experts discuss new ideas, present novel results and conclusions, and sometimes also make new recommendations with implications for society. Conferences enable journalists to know the latest happenings in the field. Doing some basic homework is essential before covering a conference. With a little background reading on the conference topic/theme, a reporter will be in a better position to tell which scientist is presenting what and is there something new in what he presents. As a reporter you should:

- Watch the presentation carefully, listen to what the presenter says and at the end ask questions.
- Observe and watch what important trend is emerging from this conference discussion.

4.5.4 Long-form Science Writing

A science feature is a long form of science writing with more depth than a news story. It is a form of non-fiction writing which gives background information and underlying causes on certain major scientific events, or recently done research. They usually have an interesting introduction that grabs the reader's attention. Science feature article normally presents newsworthy events and information related to any aspect of Science and Technology through a narrative story. For example a feature on the Mars mission by Indian Space Research Organisation (ISRO) which has either happened very recently or is being planned in near future, or a feature on some research breakthrough by scientists at Indian Institute of Science (IISc), Bangalore. Features are generally written in active voice.

A science feature needs to have voices of those involved in the issue. However, every aspect of an issue cannot be covered in one single feature. A science feature includes the element of factual reporting and some added story elements of imaginative writing and interpretation. A science feature gives readers factual information or interpretation of some technology in an interesting form. But it goes beyond mere interpretation of facts by adding relevant studies and other information. Features generally require the writer to apply his/her imagination and interpret facts in a way which interests the readers. While writing a feature, one should put the major and interesting information in first half of the story and then provide context, background and implications.

Feature stories vary in length but generally magazine features are longer than newspaper features because of availability of more space in magazines. A science feature like other features is seldom written in traditional inverted pyramid form. It should flow smoothly in a well-planned order.

4.5.5 Scientific and Technological Controversies

Scientific controversies grab attention of media. Often editors allot prominence to specific scientific controversies by publishing them on the front page; while in other cases, such stories act as a tool for informing the public and creating awareness among them on sensitive issues. Informed coverage of scientific controversies not only benefits public but may also lead to a change at the highest levels of public policy. For example well-articulated media coverage of health hazards of traditional wood stoves for cooking led to the programme of 'smokeless chulas' in India.

At times scientific controversies erupt, when there is disagreement among a group of scientists regarding any aspect of scientific research or technological development. As scientific research progresses, new knowledge produced can cast doubt on existing knowledge or application, which was based on previous understanding. This becomes controversial at times. For example, genetic modification (GM) technique, hailed by majority of scientists as a tool for growing better crops became a highly controversial issue after the report in journal Nature on the death of monarch butterfly larvae, fed on GM corn.

Controversies on scientific issues come to public notice when they get a place in media. In any scientific or technological controversy there is more than one side of the story. When two sides of scientific explanation are pitched against each other, the job of media is to present a non-prejudiced and balanced picture of the

story, giving voice to the stakeholders. For example, in GM food controversy there is a community of scientists which supports it and on the other hand there is another community of scientists who opposes. So, the reporter has to do a tightrope walk, and has to balance it without leaning on any one fulcrum and staying neutral on all grounds.

Scientific controversies are multi-dimensional and have implications in politics, religion and industry. For example, although the core of climate change is atmospheric science and geography, yet actors in this controversy include politicians, industry, activists, non-governmental organisations and common people.

Almost every new technology which comes up these days has its own share of controversy such as bio-technology, heart transplants and nanotechnology. Controversies don't settle down quickly. Keep monitoring them by visiting websites in order to know how these controversies are being covered by media of other countries. One should not write about a controversy unless s/he has double-checked the facts.

4.5.6 Covering Health

For many media outlets today, the bulk of what consists of science news writing is mostly about medicine and health. Health journalism is about covering medical and health care related issues. Coverage of health related issues change in knowledge at the individual level, and initiate agendas and actions at the institutional and policy level. News media plays a leading role in defining priorities in health sector and also disseminating new research findings to the public. Mass media especially the press is seen as an integral source of public policy because of the way it frame the issues. Effective health reporting is also needed to promote awareness and understanding of health-related issues.

Health is an important journalistic beat. This beat touches on economics, politics, public welfare, medicine, resource allocation, fake drugs, marketing, sales practice, consumer law and regulation. Health reporting may also deal with unethical practices in health sector which range from unholy nexus between drug manufacturing companies and doctors to non-availability of clinical trial data in public domain. Health beat is one of the most important and complex beats with a wide range of issues to cover.

4.6 CHALLENGES IN SCIENCE AND TECHNOLOGY REPORTING

Research is the essence of science and technology reporting, and it comes with its own set of challenges. Unlike other areas of reporting, Science and Technology reporting needs lots of background work and study. Understanding the data, and converting the data into user-friendly media format is the moot point in Science and Technology reporting. Since information has to be dug out from various research organisations science reporting needs basic disciplinary knowledge as well as primary investigative skills.

Journalists often face pressures that confuse them about competing scientific claims in terms of their credibility. Determining how much coverage to give to

different sides in a scientific debate requires considerable expertise on the issue at hand. New knowledge and disciplines emerge almost on a daily basis. A science journalist may have sound knowledge about one area but may have very little knowledge about other areas. In such cases s/he needs to update oneself about these new developments to report them accurately and in a proper context.

Sometimes covering a scientific issue or controversy means questioning big corporations and multinational companies, which indulge in corrupt scientific practices or even unearthing undisclosed ties of research institutes with some multinational companies. The job of a science reporter is to empower the common man and portray the truth. Science journalist should look beyond wonders, theories and data. S/he should observe the people involved in science and see whether they have any conflict of interest. S/he should also analyze the power structures to see as to who is included and who is excluded or marginalized in the world of science.

Check Your Progress Exercise 3

Notes: 1) Use the space below for your answer.

2) Compare your answers with those given at the end of this Unit.

1) What are the basic requirements of a science journalist?

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2) What should be the role of journalist in case of a scientific controversy?

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4.7 LET US SUM UP

In this unit various facets of science journalism were explained. We discussed some contemporary developments in the world of science and technology such as 5G technology, stem cell research, artificial intelligence, internet of things and CRISPR gene editing technology.

We briefly discussed history of Science and Technology reporting and described science and technology news and the art of science news reporting. The unit gave an overview of major sources of science news and how good science stories are written. We also discussed some formats for science reporting and how Science and Technology related controversies should be reported.

4.8 REFERENCE AND FURTHER READINGS

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4.9 ANSWER TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress Exercise 1

- 1) Mass media plays an important role in legitimisation of scientific knowledge. It not only helps shape public's perception of science but also facilitates a dialogue and interaction between scientific community and other social group stake-holders.
- 2) Artificial Intelligence is a method by which computers and other such machines or a software programme is made to think intelligently just like human beings. The machines and robots with artificial intelligence are able to learn from the experiences, adjust and respond to external stimuli and thus perform many functions as human beings do.

Check Your Progress Exercise 2

- 1) Science and Technology news is about reporting new technology, inventions and discoveries in the field of science, and technology and informing about their possible implications on human beings and environment.
- 2) Science and technology stories are usually shorter than other types of stories. It deals with complex scientific issues such as theories and concepts. It involves interpretation of a lot of statistics and complex data and it also includes investigation of scientific misconduct.

Check Your Progress Exercise 3

- 1) A science journalist should have basic knowledge of sciences and journalistic skills. In fact some of the famous writers and science journalists have no formal qualifications and training in science and technology. Good science reporting is more about passion and motivation.
- 2) In the case of a scientific controversy, the job of science reporter is to empower the common man and portray the truth. Science journalist should observe the people involved in science and see whether they have any conflict of interest. S/he should also analyse the power structures to see as to who is included and who is excluded or marginalised in the world of science.