RESEARCH AND PUBLICATION ETHICS

Module1: Philosophy and Ethics

INTRODUCTION TO THE CONCEPT OF PHILOSOPHY

"Progress of human civilization is the product of education, but the answer to everyeducational question is ultimately influenced by our philosophy of life" (Shrivastava, 2004).

Philosophy is one's integrated view of the world. It is a system of beliefs about reality which includes an understanding of the nature of existence, man and his role in this world. Philosophy provides the framework for which a man can understand the world. The term philosophy has a Greek origin. The word 'philosophy' can be traced to the Greek word 'Philosophia' which is made up of two words, 'phileo' (love) and 'Sophia' (wisdom) (Shrivastava, 2004). Therefore, the literal meaning of philosophy is 'love of wisdom'. A love of wisdom is the essence of any philosophic investigation.

Philosophy is the oldest and original discipline. We may call it the mother of all arts and the science of all sciences. From the origin of mankind itself, man has a fundamental characteristic which differentiates man from other beings, which is curiosity. Man's curiosity about one's self and the environment leads him to find answers about many natural phenomenaand the existence of the world named philosophers. According to Plato, "he who has a taste forevery sort of knowledge and who is curious to learn and is never satisfied may be termed as a philosopher. The great philosophers of the world are Thales of Greece, Pythagoras, Socrates, Plato, Aristotle…

In Sanskrit, philosophy is known as 'Darshan' which means knowledge of reality. Theword 'Darshan' comes from the word 'Drish' which means to see. Thus, true knowledge can be received by 'seeing'. Philosophy is the never-ending thirst for knowledge. It is a method of critical thinking. It answers the ultimate questions of life. In India, philosophy or Darshan is considered to be of great importance because it helps in guiding the destiny of human life. According to Dr Radhakrishnan, "It is a logical inquiry into the nature of reality" (Naseerali, 2014)

Definitions

- Philosophy has been defined by various scholars from various angles. It started from the time of the Greek Civilization, and there were several questions raised about the origin of the universe, life and creation. Philosophy according to them, was an endeavour to bring a consistent explanation of the different realities around us. The definitions even link us to the recent tendencies to follow the path to education. The doctrines of great educators who were also great philosophers, paved the emergence, and reflection of their philosophical views in the educational schemes for their times. Plato's idealism, Rationalism, Rousseau's anti-social philosophy, Spencer's Hedonism, and Dewey's Democracy and Education. Philosophers have defined Philosophy according to their knowledge and experiences (Aggarwal,2010)
- **Coleridge** defined philosophy as the 'science of sciences.
- **Cicero** called it 'the mother of all arts' and 'the true medicine of mind'.
- **Socrates** defined philosophy as 'philosophy begins with wonder'.
- **Aristotle** defined it as 'the study of philosophy aims not at knowing what men feel, butat what is the truth of things
- According to **Bramold**, 'Philosophy is a persistent effort of both ordinary and persistentpeople to make life as intelligible and meaningful as possible'.

- **Aristtipus** thinks that 'philosophy "is the ability to feel at ease in any society
- **Karl Marx** as "Philosophy is an interpretation of the world to change it"
- According to **Alexander**, philosophy, means metaphysics.
- **Herbert Spencer's** "Philosophy Is concerned with everything as a universal science.(Aggarwal,2010)

Chief Characteristics of Philosophy

- Philosophy is a search for reality.
- Philosophy is based on enquiry.
- Philosophy is local.
- Philosophy is a dynamic and living force.
- Philosophy is an art as well as a science.
- Philosophy is closely related to education.
- Philosophy is a love of knowledge.
- Philosophy is the love of wisdom.
- Philosophy is a guide to a way of life.
- Philosophy is an intellectual attempt to interpret and understand nature.(Aggarwal,2010)

Why do we need Philosophy?

Philosophy gives a direction to life. Philosophy in India emerged as a result of the reflection turned over to the experiences and problems of life. Human life is always purposeful. The purpose of life is determined by the philosophy of life. We need philosophy to take decisions wisely and to act consistently. One needs the wisdom to distinguish between two extremes-falsehood and truth, ugliness and beauty, right and wrong.

Nature and Scope of Philosophy

Philosophy wants to understand man about the whole universe-nature and God. Philosophy deals with nature and human life and personality, and how man and his institutionscan be understood. Philosophy seeks to understand whether the man is free or within bondageand whether he can change the bondage of history. Philosophy endeavours to understand all that comes within the bound of human experience. It aims at a fundamental understanding of things – the problem of human conduct, the assumptions that underlie religious or scientific beliefs, the tools and methods of thinking, or any issue that arises in any field of human activity.The philosophy seeks to provide a complete account of the man s world. It is reflective and critical. It is concerned with critical examinations of the fundamental notions and assumptionsof any field that falls within human experience. From the above, we may conclude that philosophy is a "search for a comprehensive view of nature, an attempt at a universalexplanation of the nature of things.

The word philosophy means "the love of wisdom". Wisdom is not only knowledge. One may know, but he may not be wise. Thus, philosophy gives a man that wisdom with the help of which he understands the whole universe and the implications of the same about himself and all the people around. The nature of philosophy is philosophical and have to explain philosophical problems, philosophical attitude and philosophical activities. The philosophical problems include the examination and synthesis of the postulates and conclusions of differentsciences. A philosophical attitude is reflective, curious, tolerant, reasoning and guided by experience to arrive at conclusions. And finally, the philosophical activity begins in wonder, curiosity and discontentment at the existing order of things

and it may be individual as well associal.

The scope of Philosophy can be divided into the following three parts:

1. Field of Philosophical Sciences: the scope of philosophy includes different philosophical sciences such as metaphysics, epistemology, logic, semantics, philosophyof science, axiology, aesthetics, ethics, philosophy of religion, political philosophy, philosophy of education, philosophy of history, economic philosophy etc.
2. Field of Philosophy as Comprehensive Science: Philosophy is the science of sciences, the mother of all sciences. From this point of view, its scope includes criticism and synthesis of the postulates and conclusions of physical as well as social sciences.
3. The subject matter of Philosophy: the scope of philosophy clarifies its subject matter. Its subject matter includes the conclusions and postulates of all the physical and socialsciences besides their general problems.

Branches of Philosophy

Philosophy is the study which deals with general and fundamental problems in the universe such as those connected with reality, existence, knowledge, values etc. Different types of philosophies have different answers to these questions. Therefore, based on these basic problems philosophy can be subdivided into three main areas; metaphysics, epistemology andaxiology.

a. Metaphysics

Metaphysics is a branch of philosophy, which deals with issues of the fundamental nature of reality and what is beyond experience. The word Metaphysics is a combination of two words- Meta, meaning over or beyond and physics meaning physical or nature. Thus, metaphysics means “beyond nature”, it works to answer the question, “What is the ultimate reality?”. It is a fundamental aspect of the world around us. It admits all that exists as well as the nature of existence itself. It states whether the universe is real, or merely an illusion.

b. Epistemology

Epistemology is a branch of philosophy, which dispenses with the ways and means of acquiring knowledge. It answers the question, “How do I know what I know/ How do we get knowledge? It studies the nature, scope and production of knowledge and justified belief. Epistemology analyses how knowledge relates to similar areas such as true belief and justification. Etymologically, epistemology is derived from two Greek words Episteme, which means knowledge or understanding, and Logos, which means the study of. Hence it is regarded as ‘the theory of knowledge’. Knowledge is defined as the perception and realization of reality. Knowledge requires three necessary conditions truth, belief and justification. Therefore, knowledge can be called a justified true belief. And it’s divided into three types, personal, procedural and propositional.

c. Axiology

Axiology is a branch of philosophy, which deals with the study of values and value judgments. Therefore, axiology is the theory which comprises a range of methods to understandhow, why and to what extent humans should value things. Etymologically axiology is derived from two Greek words axios means worthy and logos means science. Thus, axiology is the philosophical study of goodness or value. The branches of Axiology are Ethics and

Aesthetics

2. Ethics, Definition, Moral Philosophy, Nature of moral judgement and reactions

Ethics is the branch of axiology, dealing with the nature and concept of morality, including the problems of good,right, duty, virtue and choice. It answers the question what I do? It is the study of right and wrong in human endeeavours. At the fundamental leve;l it can be analyzed on the basis of the principles of living well and doing well as a human being and the moral principles in religion or philosophy**.**

Moral Philosophy

Moral Philosophy includes moral ontology, or the origin of morals, as well as moral epistemology (logical discourse) or knowledge about morals. Epistemology studies the nature of knowledge, justification, and the rationality of belief. Different systems of expressing morality have been proposed, including deontological ethical systems which adhere to a set of established rules, and normative ethical systems which consider the merits of actions themselves. An example of normative ethical philosophy is the Golden Rule, which states that: "One should treat others as one would like others to treat oneself."

Three Branches of Moral Philosophy

(1) Normative ethics: Theories addressing the questions of how we ought to act or how we should be. What is the basis on which we should make decisions about what we ought to do? The central concern of normative ethics is an elucidation of what is right, good or virtuous.

(2) Meta-ethics: Theories concerning the nature of moral judgements. Key questions focus on whether our moral statements can be true or false or whether moral judgements are instead basically subjective expressions of feeling, attitude or agreement. The implications for moral knowledge and moral psychology (motivation).

(3) Applied ethics: The examination of an attempt to understand practical moral problems such as abortion, euthanasia, animal welfare, suicide, poverty, and the environment (and our relationship to it). (Somoeun, 2018)

Moral Judgement

Moral judgement is the judgement which deals with the moral value or quality of an action. It is a judgement of value and it evaluates the rightness or wrongness of our actions.

When we analyse a moral judgement then we find that it contains

a)a subject which will judge, b) an object whose action will be judged, c) a standard in conformity to which the action of the subject will be judged and d) a power of judgingthe action as required.

Moral judgment is the judgment of the moral quality of voluntary habitual actions. Generally, a moral judgment is given on the voluntary and habitual actions of a rational being. The voluntary actions of a rational person which involve deliberation, choice, and resolution, have the moral quality of rightness and wrongness. They are considered to be right or wrong regarding the moral standard. And based on this standard, moral judgment is given. If voluntary actions conform to the standard or the ideal, then the moral judgment will express it as the right action. If the action has a conflict with the standard or norms, then the moral judgment will express it as wrong. So, moral judgment involves the comparison of voluntary acts with the moral standard.

- **Moral judgment is activ**e. Because moral judgment is given upon voluntary and habitual acts of persons and not upon their passive experiences.

- **Moral judgment is social**. Because, as we know, voluntary acts of a person are right or

Wrong, because they more or less affect the interest of others.

Man is a social being. His rights and duties of actions rise out of his relation to other persons in society. So, moral judgment, apart from society is inconceivable. Moral judgment can be said to be obligatory. Because a judgment can be given as right, while we feel the moralobligation to do it. Similarly, moral judgment is given on an act as wrong, when we feel the moral obligation to refrain from it. Thus, moral judgment is always accompanied by a sense of duty or moral obligation. And this moral obligation is essentially self-imposed. In this way, wecan find out the meaning of moral judgment.

Nature of moral judgments and reactions

Moral judgment is a judgment of values. It is distinct from the judgment of facts. A Judgment of value is a judgment of "what ought to be". But a judgment of fact is a judgment of "what is". Judgment of fact is a descriptive judgment, while moral judgment is an appreciative or critical judgment. So, moral judgment is a mental act of pronouncing a particular action to be right or wrong. According to Mackenzie, moral judgment is not merelyto state the nature of some object, but to compare it with a standard and to pronounce it to be good or evil, right or wrong. So, it is normative. Muirhead says that moral judgment is concerned with the judgment upon conduct, the judgment that such and such conduct is right and wrong. The judgment upon conduct has a judicial sense and the judgment of fact has a logical sense. Thus, when we perceive a voluntary action, we compare it with the moral standard and thus judge whether the action conforms with it or not. So, it is clear that moral judgment is inferential, involving the application of a standard to a particular action. But in thelanguage of Bradley, ordinarily, moral judgment is intuitive and immediate. Because we intuitively bring an action under a moral rule recognized by the community and judge it to be right or wrong. It is only in difficult or doubtful cases that we consciously compare an action with the moral ideal and judge it as right or wrong. Hence, we can find out that a moral judgment presupposes a subject, who judges an object that is judged, a standard according to which an action is judged.

Again, it is important to observe that moral judgment is distinguished from logical andaesthetical judgment. As we know Ethics, Logic and Aesthetics are normative science. And accordingly, they have three supreme norms and ideals of life. Ethics is concerned with the ideals of the Highest Good, logic is concerned with the idea of Truth and aesthetics is concernedwith the ideal of Beauty. All of them are indeed appreciative or critical judgments. But moral judgments are always accompanied by moral obligation and moral sentiments, which are not accompanied by logical and aesthetic judgments. When we judge an action to be right, we feela moral obligation to perform it and have a feeling of approval. When we judge an action to bewrong, we feel that under moral obligation we are not to perform it and therefore, we have a feeling of disapproval. Feelings of approval, disapproval, rightness, wrongness etc. are called moral sentiments. Thus, moral judgments are obligatory and are accompanied by moral sentiments. So, they differ from logical and aesthetic judgments which are not accompanied by moral obligation and moral sentiments.

Moral judgements, whether something is good or bad in its own right are contained wholly in the field of ethics. In the process of reasoning also we find different classes of judgements and they are usually judgement of

facts. But moral judgement as a judgement of value is concerned with what ought to be. It judges what our actions ought to be. It has distinctive features. It is critical judgement and appreciation. It is the mental act of discerning and pronouncing a particular action to be right or wrong. After evaluation and deliberation actions are to be judged in conformity with a standard. 'To speak the truth is always right' is amoral judgement. Moral judgement differs from a judgement of fact which is descriptive judgement and it describes what is. Judgements of facts are more objective because they dependon the real nature of the world. For example, 'Water is composed of oxygen and hydrogen'.

Moral judgement is inferential though the element of inference generally remains implicit. It involves the application of a standard to a particular action. When we perceive a voluntary action, we compare it with the moral standard and we judge whether the action conforms with it or not. Ordinarily, moral judgements are intuitive and immediate. F.H. Bradley says that they are intuitive subsumptions. But in complex and doubtful cases the whole process becomes explicit and reflective. In complicated circumstances, the moral standard is explicitly held before the mind and applied to the cases under consideration. (KKKHSOU, 2011).

Module2: Scientific Conduct

Research ethics involves the application of fundamental ethical principles to research activities which include the design and implementation of research, respect towards society and others, the use of resources and research outputs, scientific misconduct and the regulation of research. ethics promote the aims of scientific research including knowledge, truth, and avoidance of error. Any kind of deviation of ethics in scientific research may result in research misconduct including falsification, fabrications, and plagiarism. Scientific ethics

calls for honesty and integrity in all stages of scientific practice, from reporting results regardless to properly attributing collaborators. This system of ethics guides the practice of science, from data collection to publication and beyond. The first and broadest objective is to protect human participants. The second objective is to ensure that research is conducted in a way that serves interests of individuals, groups, and/or society as a whole.

Ethics with respect to science and research

The scientific ethic is deeply integrated into the way scientists work, and they are aware that the reliability of their work and scientific knowledge in general depends upon adhering to that ethic. Many of the ethical principles in science relate to the production of unbiased scientific knowledge, which is critical when others try to build upon or extend research findings. (Capri, 2009)

Research Ethics

Research ethics provides guidelines for the responsible conduct of research. In addition, it educates and monitors scientists conducting research to ensure a high ethical standard. This research found Many different disciplines, institutions, and professions have standards for behaviour that suit their particular aims and goals. These standards also help members of the discipline to coordinate their actions or activities and to establish the public's trust of the discipline. For instance, ethical standards govern conduct in medicine, law, engineering, and business. Ethical norms also serve the aims or goals of research and apply to people who conduct scientific research or other scholarly or creative activities. There is even a specialized discipline, research ethics, which studies these norms. research often involves a great deal of cooperation and coordination among many different people in different disciplines and institutions, ethical standards promote the values that are essential to collaborative work, such as trust, accountability, mutual respect, and fairness. Many of the ethical norms help to ensure that researchers can be held accountable to the public. For instance, federal policies on research misconduct, conflicts of interest, the human

subjects protections, and animal care and use are necessary in order to make sure that researchers who are funded by public money can be held accountable to the public. ethical norms in research also help to build public support for research.

People are more likely to fund a research project if they can trust the quality and integrity of research. many of the norms of research promote a variety of other important moral and social values, such as social responsibility, human rights, animal welfare, compliance with the law, and public health and safety. Ethical lapses in research can significantly harm human and animal subjects, students, and the public. For example, a researcher who fabricates data in a clinical trial may harm or even kill patients, and a researcher who fails to abide by regulations and guidelines relating to radiation or biological safety may jeopardize his health and safety or the health and safety of staff and students.

Ethics is an important consideration in science. Ethics is a branch of philosophy that studies the nature and the morality of human conduct. To some extent, Ethics is related to other sciences because it also deals with the investigation of the nature of man as a rational being and a being in relation with other beings**.**

Scientific investigations must be guided by what is right and what is wrong. That's where ethical rules come in. They help ensure that science is done safely and that scientific knowledge is reliable.

Ethics is a normative science that deals with moral ideals or good in the nature of our conduct. As a science of morality it does not enquire into the origin of human conduct but emphasizes on the contents and various problems of moral consciousness like motives, intentions, voluntary actions and so on. Ethics itself deals with values relating to human conduct, with respect to the right and wrong of certain actions and to the good and bad of the motives and ends of such actions.

Ethical principles:

- **Honesty**: Honestly report data, results, methods and procedures, and publication status. Do not fabricate, falsify, or misrepresent data.
- **Objectivity:**Strive to avoid bias in experimental design, data analysis, data interpretation, peer review, personnel decisions, grant writing, expert testimony, and other aspects of research.
- **Integrity**: Keep your promises and agreements; act with sincerity; strive for consistency of thought and action.
- **Carefulness:** Avoid careless errors and negligence; carefully and critically examine your own work and the work of your peers. Keep good records of research activities**.**
- **Openness:** Share data, results, ideas, tools, resources. Be open to criticism and new ideas.
- **Respect for Intellectual Property:** Honor patents, copyrights, and other forms of intellectual property. Do not use unpublished data, methods, or results without permission. Give credit where credit is due. Never plagiarize.
- **Confidentiality:** Protect confidential communications, such as papers or grants submitted for publication, personnel records, trade or military secrets, and patient records.
- **Responsible Publication:** Publish in order to advance research and scholarship, not to advance just your own career. Avoid wasteful and duplicative publication.
- **Responsible Mentoring:** Help to educate, mentor, and advise students. Promote their welfare and allow them to make their own decisions.
- **Respect for Colleagues:** Respect your colleagues and treat them fairly.

- **Social Responsibility:** Strive to promote social good and prevent or mitigate social harms through research, public education, and advocacy.
- **Non-Discrimination:** Avoid discrimination against colleagues or students on the basis of sex, race, ethnicity, or other factors that are not related to their scientific competence and integrity.
- **Competence:** Maintain and improve your own professional competence and expertise through lifelong education and learning; take steps to promote competence in science as a whole.
- **Legality:** Know and obey relevant laws and institutional and governmental policies.
- **Animal Care:** Show proper respect and care for animals when using them in research. Do not conduct unnecessary or poorly designed animal experiments.
- **Human Subjects Protection:** When conducting research on human subjects, minimize harms and risks and maximize benefits; respect human dignity, privacy, and autonomy.

Intellectual honesty and research integrity

Intellectual Honesty: Intellectual honesty is honesty in the acquisition, analysis, and transmission of ideas. A person is being intellectually honest when he or she, knowing the truth, states that truth. Intellectual honesty pertains to any communication intended to inform or persuade. This includes all forms of scholarship, consequential conversations such as dialogue, debate, negotiations, product and service descriptions, various forms of persuasion, and public communications such as announcements, speeches, lectures, instruction, presentations, publications, declarations, briefings, news releases, policy statements, reports, religious instructions, social media posts, and journalism including not only prose and speech, but graphs, photographs, and other means of expression.

Ten Signs of Intellectual Honesty

1. Do not overstate the power of your argument. One's sense of conviction should be in proportion to the level of clear evidence assessable by most. If someone portrays their opponents as being either stupid or dishonest for disagreeing, intellectual dishonesty is probably in play. Intellectual honesty is most often associated with humility, not arrogance.

2. Show a willingness to publicly acknowledge that reasonable alternative viewpoints exist. The alternative views do not have to be treated as equally valid or powerful, but rarely is it the case that one and only one viewpoint has a complete monopoly on reason and evidence.

3. Be willing to publicly acknowledge and question one's own assumptions and biases. All of us rely on assumptions when applying our world view to make sense of the data about the world. And all of us bring various biases to the table.

4. Be willing to publicly acknowledge where your argument is weak.Almost all arguments have weak spots, but those who are trying to sell an ideology will have great difficulty with this point and would rather obscure or downplay any weak points.

5. Be willing to publicly acknowledge when you are wrong. Those selling an ideology likewise have great difficulty admitting to being wrong, as this undercuts the rhetoric and image that is being sold. You get small points for admitting to being wrong on trivial matters and big points for admitting to being wrong on substantive points. You lose big points for failing to admit being wrong on something trivial.

6. Demonstrate consistency. A clear sign of intellectual dishonesty is when someone extensively relies on double

standards. Typically, an excessively high standard is applied to the perceived opponent(s), while a very low standard is applied to the ideologues' allies.

7. Address the argument instead of attacking the person making the argument. Ad hominem arguments are a clear sign of intellectual dishonesty. However, often times, the dishonesty is more subtle. For example, someone might make a token effort at debunking an argument and then turn significant attention to the person making the argument, relying on stereotypes, guilt-by-association, and innocent-sounding gotcha questions.

8. When addressing an argument, do not misrepresent it. A common tactic of the intellectually dishonest is to portray their opponent's argument in straw man terms. In politics, this is called spin. Typically, such tactics eschew quoting the person in context, but instead rely heavily on out-of-context quotes, paraphrasing and impression. When addressing an argument, one should shows signs of having made a serious effort to first understand the argument and then accurately represent it in its strongest form.

9. Show a commitment to critical thinking.

10. Be willing to publicly acknowledge when a point or criticism is good. If someone is unable or unwilling to admit when their opponent raises a good point or makes a good criticism, it demonstrates an unwillingness to participate in the give-and-take that characterizes an honest exchange.

While no one is perfect, and even those who strive for intellectual honesty can have a bad day, simply be on the lookout for how many and how often these criteria apply to someone. In the arena of public discourse, it is not intelligence or knowledge that matters most – it is whether you can trust the intelligence or knowledge of another. After all, intelligence and knowledge can sometimes be the best tools of an intellectually dishonest approach combines good faith with a primary motivation toward seeking true beliefs.

Intellectual honesty is an applied method of problem solving, characterized by an unbiased, honest attitude, which can be demonstrated in a number of different ways including

: • Ensuring support for chosen ideologies does not interfere with the pursuit of truth; • Relevant facts and information are not purposefully omitted even when such things may

contradict one's hypothesis; • Facts are presented in an unbiased manner, and not twisted to give misleading impressions or to support one view over another; • References, or earlier work, are acknowledged where possible, and plagiarism is avoided. Harvard ethicist Louis M. Guenin describes the "kernel" of intellectual honesty to be "a virtuous disposition to eschew deception when given an incentive for deception". Intentionally committed fallacies and deception in debates and reasoning are called intellectual dishonesty. (diversity, 2020)

Research Integrity: Research integrity may be defined as active adherence to the ethical principles and professional standards essential for the responsible practice of research. By active adherence we mean adoption of the principles and practices as a personal credo, not simply accepting them as impositions by rule makers. by ethical principles we mean honesty, the golden rule, trustworthiness, and high regard for the scientific record.

NAS report definition: "For individuals research integrity is an aspect of moral character and experience. It involves above all a commitment to intellectual honesty and personal responsibility for ones actions and to a range of practices that characterize responsible research conduct." These practices include:

1. Honesty and fairness in proposing, performing, and reporting research;
2. Accuracy and fairness in representing contributions to research proposals and reports;
3. Proficiency and fairness in peer review;

4. Collegiality in scientific interactions, communications and sharing of resources;
5. Disclosure of conflicts of interest;
6. Protection of human subjects in the conduct of research;
7. Humane care of animals in the conduct of research;
8. Adherence to the mutual responsibilities of mentors and trainees."

While science encourages (no, requires) vigorous defence of one's ideas and work, ultimately research integrity means examining the data with objectivity and being guided by the results rather than by preconceived notions.

It is expected that all researchers to abide by standards of research integrity.

Honesty in all aspects of research, including:

- presentation of research goals, intentions and findings
- reporting on research methods and procedures
- gathering data
- using and acknowledging the work of other researchers
- conveying valid interpretations and making justifiable claims based on research findings Scrupulous care, thoroughness and excellence in research practice:
- in performing research and using appropriate methods
- in adhering to an agreed protocol where appropriate
- in drawing interpretations and conclusions from the research
- in communicating the results
- Transparency and open communication:
- in declaring conflicts of interest
- in the reporting of research data collection methods, including the reuse of data collected for other purposes
- in the analysis and interpretation of data
- in making research findings widely available, including sharing negative results as appropriate
- in presenting the work to other researchers and to the general public care and respect for:
- all participants in and subjects of research, including humans, animals, the environment and cultural objects
- the stewardship of research and scholarship for future generations

There are several reasons why it is important to adhere to ethical norms in science and research.Society owes a debt to those who work within its norms, according to ethical principles, and always with an eye towards the steady accumulation of better knowledge about the universe and its laws. the majority of scientists act ethically, whether consciously or not , and contribute their knowledge to an ever progressing society.it is expected that the researchers present proposals and data honestly and communicate their best understanding of the work in writing . the use of honest and verifiable methods in proposing, performing, and evaluating research. Reporting research result with particular attention to adherence to rules, regulations, guidelines, and commonly accepted codes or norms.

Scientific misconduct

Scientific misconduct is the violation of the standard codes of scholarly conduct and ethical behaviour in the

publication of professional scientific research. This may occur every stage of the research process (Data generation, recording, review and publication/ dissemination of scientific knowledge).

Research misconduct means fabrication, falsification, plagiarism and violation of authorship rules in proposing, performing, or reviewing research, or in reporting research results. [US Department of Health and Human Services]

Basic Research Misconduct

Known as the three "cardinal sins" of research conduct, falsification, fabrication, and plagiarism (FFP) are the primary concerns in avoiding research misconduct. Any divergence from these norms undermines the integrity of research for that individual, lab, university/corporation, and the field as a whole.

a. Falsification

Falsification is the alteration of the observed result of a scientific experiment. Falsification is the changing or omission of research results (data) to support claims, hypotheses, other data, etc. Falsification can include the manipulation of research instrumentation, materials, processes or changing or omitting data or results such that the research is not accurately represented in the research record. Falsification is the most common form of scientific misconduct, in a study of China 2006 40% of the investigated misconduct cases were falsifications.

Falsification involves making changes for example in the set up or results of an experiment in a way that cannot be scientifically justified.

Most commonly with the intention of improving the results or removing results that do not fit the hypothesis.

b. Fabrication

Fabrication is the invention of data or information. Fabricating data involves creating a new record of data or characterizations that never occurred in the gathering of data or running of experiments. Most commonly fabricated documents are informed consent forms and patient diaries. According to a study from 2004, fabrication is the second most common form of scientific misconduct.

c. Plagiarism

Plagiarism is qualitatively different from the other two because it does not distort scientific knowledge, although it has important consequences for the careers of people

involved, and for the whole scientific enterprise. Copying someone else's intellectual property (information or ideas) as own achievement without giving the credits. Plagiarism is the most frequent type of misconduct and major breach of ethics.

Researchers must be aware to cite all sources and take careful notes. Using or representing the work of others as your own work constitutes plagiarism, even if committed unintentionally. When reviewing privileged information, such as when reviewing grants or journal article manuscripts for peer review, researchers must recognize that what they are reading cannot be used for their own purposes because it cannot be cited until the work is published or publicly available.

Research misconduct does not include the following

- Ordinary errors
- Good faith differences in interpretations or judgments of data
- Scholarly or political disagreements
- Good faith personal or professional opinions
- Private moral or ethical behaviour or views

- Authorship controversy

Why scientific misconduct occur?

- Academic/ career pressure
- Publication pressure
- Personal desire for fame
- Financial gain
- Inability to determine right from wrong
- Cultural differences

Consequences of scientific misconduct

- Could mean the end to career as a researcher.
- Dismissal from faculty Rejection of research grants
- Blacklisted (e.g. reputable research organizations and universities refuse to hire; funding sources refuse to sponsor research work, journals refuse to consider any articles for publication.)
- Fabricators may have previously earned academic achievement taken away.

Why research misconduct matters?

- Difficult to be recognized.
- It is like domestic violence; we did not recognize it, yet we see a lot.
- It undermines public trust in medical research and health professionals
- It corrupts the scientific records and leads to false

Methods to prevent academic research misconduct

- Ensure policy during academic research not only in paper, but to be followed.
- Set standards for supervision
- Enforce expectations for process rigor
- Communicate expectations for accurate accounting of time spent on research activities
- Evaluate the strength of your grant Establish an Office of Research Integrity

II. Redundant publications

Duplicate or redundant publication has been defined as publication of a paper that overlaps substantially with one already published. To avoid confusion and the possibility of authors finding flaws in what is 'substantial', a few journals have provided more specific definitions. For practical purposes, any article that has similar or near similar hypothesis, sample characteristics, methodology, results and conclusions to a published article is a duplicate article, and if it is republished without the knowledge of the editors, it is called duplicate publication.

The authors of the duplicate manuscript may be the same, as in most cases, but it may also be a different author publishing the same article without the knowledge of the initial author. Publication of a manuscript in any form, electronic or print, in a journal or scientific booklet of a conference, and in any language, constitutes a prior publication. Prior publication of only the abstract of a manuscript may not be considered as duplicate publication; however, the editor of the journal should be informed about it.

Publication of the full article in a different language and for a different reader base can be permitted provided the editors of both the journals agree for the same and consider it beneficial for the readers.

Salami Publication

Slicing of data from a single research process or gathered during a single study period, into different pieces, creating individual manuscripts from each piece, and publishing these to different journals or even the same journal is called ‘salami publication’ or ‘salami slicing’.

Publishing the radiological findings of cases of cerebral hydatid disease to a radiological journal and the neurosurgical aspects of it to a neurological journal is salami slicing. Exceptions are large clinical or epidemiological studies with results that cannot be published simultaneously or are such that they address different and distinctly important

questions. For other studies focused to a small population size, with overlapping results, it is best to publish the results together to form a single more cohesive and informative paper than two, without being excessively long. (Abraham, 2000)

III. Selective reporting and misrepresentation of data.

Selective reporting bias is when results from scientific research are deliberately not fully or accurately reported, in order to suppress negative or undesirable findings. The end result is that the findings are not reproducible, because they have been skewed by bias during the analysis or writing stages. Selective reporting is one type of bias which undermines the integrity of academic research. It is a large contributor to the current ‘reproducibility crisis’ facing scientific publishing. It’s the selection of a subset of the original recorded outcomes, on the basis of the results, for inclusion in publication.

Types of selective outcome reporting

Selective reporting of the set of study outcomes- Not all analysed outcomes are reported Selective reporting of a specific outcome- Hutton and Williamson (2000)- Selection from multiple time points- Subscales- Endpoint score versus change from baseline-Continuous versus binary (choice of cut-offs)-Different measures of same outcome, e.g. pain Incomplete reporting of a specific outcome- e.g. “Not significant” or “p>0.05”

Consequences of selective reporting:

- Low reliability of findings
- Impossible to replicate methods
- Impossible to reproduce findings
- Difficulties in implementing findings in practice (or just understanding the papers!)

Misrepresentation of data

A misrepresentation is a false statement of a material fact made by one party which affects the other party's decision in agreeing to a contract. Misrepresentations are false statements of truth that affect another party's decision related to a contract. Such false statements can void a contract and in some cases, allow the other party to seek damages. Misrepresentation is a basis of contract breach in transactions, no matter the size, but applies only to statements of fact, not to opinions or predictions.

There are three main types of misrepresentation:

1. Fraudulent misrepresentation
2. Negligent misrepresentation
3. Innocent misrepresentation

Fraudulent misrepresentation

Fraudulent misrepresentation is based on deceit, where a false representation has been made which has induced someone to enter into a contract. It applies to a false statement that is made Knowingly; Without belief in its truth; or Recklessly or carelessly as to whether it is true or false.

Negligent misrepresentation

Where a statement is made that is found to be negligent and the claimant relied on this statement and suffered a loss as a result, this is negligent misrepresentation.

Negligence occurs when the person making the statement makes it carelessly or without reasonable grounds for believing it to be true.

If the statement can be shown to be false, then the party who made the statement will have to show that they reasonably believed it was true to defend the allegation of negligent misrepresentation.

Innocent misrepresentation

Innocent misrepresentation occurs when a false statement is made by someone who genuinely believes it to be true and the statement then induces someone to enter into a contract.

Conclusion

The concept of 'misrepresentation,' unlike 'fabrication' and 'falsification,' is neither clear nor uncontroversial. Most scientists will agree that fabrication is making up data and falsification is changing data. But 'misrepresentation of data' defined as 'communicating honestly reported data in a deceptive manner.' Deceptive communication is the use of statistics presents researchers with numerous opportunities to misrepresent data. For example, one might eliminate (or trim) outliers when 'cleaning up' raw data. Other ways of misrepresenting data include drawing unwarranted inference from data, creating deceptive graphs of figures, and using suggestive language for rhetorical effect.

However, since researchers often disagree about the proper use of statistical techniques and other means of representing data, the line between misrepresentation of data and 'disagreement about research methods' is often blurry. Since 'misrepresentation' is difficult to define, many organizations have refused to characterize misrepresenting data as a form of scientific misconduct. On the other hand, it is important to call attention to the problem of misrepresenting data, if one is concerned about promoting objectivity in research, since many of science's errors and biases result from the misrepresentation of data.

Module 3: PUBLICATION ETHICS

Unit 1: Publication ethics: definition, introduction and importance

Publication ethics refers to a set of principles and guidelines that govern the behavior of authors, editors, and publishers in the academic publication process. These guidelines aim to ensure the integrity, quality, and validity of published research and scholarly works. The ethical principles cover a wide range of conduct, such as refraining from plagiarism and other types of academic impropriety, making sure that research data is accurate and transparent, securing the necessary authorizations for the use of copyrighted materials, avoiding conflicts of interest, and guaranteeing prompt and impartial peer review of manuscripts.

Publication ethics assist researchers to publish their work in an ethical manner in order to ensure that high ethical standards are upheld throughout the research process, Publication ethics, in general, concentrates on the consideration of ethical issues that arise when subjects are involved in a particular research.

The Integrity, dependability, and trustworthiness of scientific research are vitally dependent on publication ethics.

This includes a set of values and rules that control how authors, reviewers, editors, and publishers behave during the publication process.

MEANING AND DEFINITION

Publication ethics could be defined as a collection of values and principles that support the credibility and excellence of scholarly or professional publications. It involves ethical considerations related to the authorship, peer review, data management, plagiarism, conflicts of interest, and the dissemination of research findings. These guidelines are intended to ensure that scientific research is performed ethically, transparently, and with the proper level of rigor, as well as to prevent any misconduct or ethical violations.

The various definitions of Publication ethics include:

- The Committee on Publication Ethics (COPE) defines publication ethics as "the set of principles and practices that ensure the integrity of scientific, scholarly, and medical publications, through rigorous review, transparent processes, and ethical behavior on the part of all parties involved in the publication process."
- The APA Dictionary of Psychology defines Publication Ethics as "the principles and standards associated with the process of publishing the results of scientific research or scholarly work in general."
- According to Psychology Dictionary, Publication ethics are "rules of conduct generally agreed upon when publishing results of scientific research or other scholarly work."

CHARACTERISTICS OF PUBLICATION ETHICS

Some of the key characteristics of Publication ethics include:

- **Transparency**: Researchers must make sure their research is open to the public and that all data and materials are available for anyone to examine.
- **Authenticity**: Researchers must make sure that their work is original and that all references are correctly credited.
- **Responsibilities:** Researchers are responsible for making sure that all human subjects in their research have given their informed consent and that any conflicts of interest have been appropriately stated.
- **Objectivity**: It is important for researchers to conduct their work impartially and free from any conflicts of interest
- **The ethical treatment of research participants**: Researchers must ensure that any study involving humans or animals must abide by stringent ethical standards.
- **Timeliness**: Timeliness refers to the efficiency with which research findings are communicated to the scientific community.

COMPONENTS OF PUBLICATION ETHICS

Publication ethics comprises of several components which determine the overall meaning and outcome of the academic/research work. These include:

- **Authorship**: In academic and professional publications, accurate authorship attribution is essential. The order of authorship should represent the relative contributions of all authors who have made substantial contributions.
- **Plagiarism**: Plagiarism involves using someone else's work without giving them full credit. Authors must make sure that their work is original and that all references are correctly credited.
- **Data management**: It is the duty of researchers to protect the integrity of their data, make sure it is properly stored and shared when appropriate.
- **Peer review**: Peer review is a crucial step in the publication process. Peer review ensures the validity and

excellence of published research. Reviewers should be chosen based on their expertise and should provide constructive feedback to authors.

- **Conflicts of Interest**: Authors, reviewers, and editors should disclose any conflicts of interest that could influence the publication process or the interpretation of research findings.

SIGNIFICANCE OF PUBLICATION ETHICS

Publication ethics are of paramount importance in academic and professional publishing for several reasons:

- **Upholding integrity**: Adhering to publication ethics helps the researcher to guarantee the accuracy, dependability, and credibility of published research findings. For the scientific community to gain credibility, research integrity must be kept upheld.
- **Fairness**: Publication ethics ensures that all writers, regardless of their gender, nationality, or race, are given adequate credit for their efforts. Additionally, it guarantees the objectivity and fairness of reviewers' and editors' judgements.
- **Prevention of plagiarism**: Plagiarism is a major ethical issue that can damage both the research's and the researcher's credibility. By forcing authors to correctly credit their sources and by deploying plagiarism detection tools, publication ethics assist combat plagiarism.
- **Trust-building**: Adhering to the publishing ethics promotes trust within the scientific community.
- **Encourage the principles of justice and respect for others** that are necessary for collaborative work.

FACTORS AFFECTING PUBLICATION ETHICS

The various factors that affect Publication ethics include:

- **Plagiarism:** Plagiarism is the use of another person's words, ideas, or works without giving due credit. Plagiarism can take many forms, from paraphrasing without the proper reference to duplicating entire publications. It compromises the integrity of the research and publication processes and is seen as a serious ethical offence.
- **Authorship and Contributorship**: Determining appropriate authorship and contributorship is crucial in publication. All individuals who have made a significant intellectual contribution to the research should be recognized as authors.
- **Conflict of Interest**: Conflicts of interest can arise when authors, reviewers, or editors have personal, financial, or professional interests that could influence their objectivity in the publication process. Such conflicts could include financial relationships, academic rivalries, or personal biases. Full disclosure of any potential conflicts of interest is essential to maintain transparency and integrity.
- **Data Fabrication and Falsification**: Fabricating or falsifying research data is a severe ethical misconduct. It involves manipulating or inventing data to support a desired outcome or to hide unfavorable results. This practice undermines scientific integrity and can have far-reaching consequences.
- **Informed Consent and Human Subjects**: Ethical standards is crucial to obtain participants' informed permission to make sure they are aware of the study's goals, risks, and advantages. When reporting data from human people, privacy, confidentiality, and anonymity must all be protected.
- **Duplicate Publication and Redundant Submission**: Publishing the same research findings in multiple journals or submitting similar manuscripts simultaneously to multiple journals is considered unethical. It violates copyright laws, wastes resources, and can lead to the dissemination of misleading or redundant information.

- **Peer Review Process**: Peer Review is essential for assuring the reliability and excellence of published research. Reviews that are unfair or biased, that utilize the material for their own benefit, or that violate confidentially can all raise ethical issues. It is crucial to guarantee a fair and open peer review process.
- **Ethical Oversight and Reporting**: Journals and publishers have a responsibility to establish and enforce ethical guidelines for authors, reviewers, and editors. They should provide clear instructions for ethical conduct, address misconduct allegations, and have procedures for investigating and correcting ethical issues.
- **Publication Bias**: Publication bias happens when study findings are published only when they are statistically significant or satisfies the interests of higher authority researchers/investigators. This can bias scientific understanding in a particular topic and result in an erroneous depiction of the body of data.

METHODS TO PROMOTE ETHICAL PRACTICES IN PUBLICATION

Ethical behavior in publication could be fostered through the implementation of various methods, which include:

•Education and Training

Education and training are critical in promoting publication ethics in academic research. Providing education and training regarding publication ethics can help researchers become aware of the importance of ethical behavior in academic research. This could include learning about the ethical principles that guide research, such as honesty, transparency, responsibility, and confidentiality. Proper training and practice can help researchers understand the specific ethical considerations that are relevant to their field of study. It could also help the researchers understand about the legal and regulatory requirements related to publication ethics, such as data protection laws and requirements for ethics approval, thereby ensuring that researchers comply with these requirements and avoid legal or ethical issues that could arise from non-compliance.

•Clear Ethical Guidelines

Ethical guidelines in research ensures that research is conducted in a responsible and transparent manner. It helps to ensure that the research participants are treated with respect and dignity, and that their privacy and confidentiality are protected. Ethical guidelines complies that research is conducted in a transparent and honest manner, with accurate and reliable data. This helps to build trust among the scientific community and verifies that research findings are credible and reliable.

•Robust Peer Review Process

Peer review is important in research publication, since in promotes accuracy, reliability and quality in research. It improves the deep understanding of the subject matter and can identify any potential flaws or biases in the research. False/misleading information could be identified through the peer review process and can also help to provide valuable feedback to the authors of the paper, which can help them to improve the quality of their work. Peer review also facilitates to promote transparency and accountability, by making the review process publicly available, researchers can see how their work was evaluated and can respond to any comments or criticisms made by the reviewers.

•Identifying Plagiarism

Plagiarism detection is important in research publication because it helps to ensure that the work being published is original and not copied from other sources. This is particularly important in fields such as academia, where original research is highly valued. By using plagiarism detection tools, publishers can establish that the work being published is unique and has not been copied from other sources without proper attribution. Detection of plagiarism ensures that

research is original and well-written, and thus it can be more convincing and influential. This can help to advance the field and promote knowledge and understanding in the subject or area of study.

•Conflict of Interest Disclosure

Conflict of interest is a situation in which a person's private interests may compromise, or appear to compromise, their professional judgment or objectivity. In academic publishing, it is important to disclose any potential conflicts of interest to ensure transparency and avoid bias. The Committee on Publication Ethics (COPE) provides guidelines on conflict of interest disclosure. According to COPE, authors, editors, and reviewers should disclose

any financial or non-financial interests that may influence their work. This includes personal relationships, academic or professional rivalries, and any other conflicts of interest that could be perceived as influencing the work. The level of disclosure required depends on the type of publication and the nature of the conflict of interest.

Publication ethics play an essential in preserving the reliability and validity of academic and scientific research. The sharing of knowledge is done with accountability, fairness, and transparency while the researcher adheres to ethical considerations. Maintaining strong ethical standards, such as refraining from plagiarism, upholding intellectual property rights, declaring conflicts of interest, and engaging in thorough peer review, promotes trust among scientists. The validity and dependability of published work are ensured by following the ethical standards, which also foster collaboration, promotes scientific advancement, and safeguards the rights of authors and study participants.

UNIT2&3

1. Best practices / standards setting initiatives and guidelines: (COPE & WAME)

Publication ethics in ARCC Journals refer to the ethical standards, policies, and guidelines set to ensure the integrity, quality, and validity of published research in science. Academic publishing depends, to a great extent, on trust. Editors trust peer reviewers to provide fair assessments, authors trust editors to select appropriate peer reviewers, and readers put their trust in the peer-review process. Academic publishing also occurs in an environment of powerful intellectual, financial, and sometimes political interests that may collide or compete. Good decisions and strong editorial processes designed to manage these interests will foster a sustainable and efficient publishing system, which will benefit academic societies, journal editors, authors, research funders, readers, and publishers. Good publication practices do not develop by chance, and will become established only if they are actively promoted.

The Committee on Publication Ethics (COPE), the Directory of Open Access Journals (DOAJ), the Open Access Scholarly Publishing Association (OASPA), and the World Association of Medical Editors (WAME) are scholarly organizations that have collaborated to identify principles of transparency and best practice for scholarly publications. This is the fourth version of a work in progress (published September 15, 2022). We encourage its wide dissemination.

The Principles of Transparency and Best Practice in Scholarly Publishing should apply to all published content, including special issues and conference proceedings. Where practices deviate from the standards outlined, editors must transparently communicate the procedures that the journal follows.

These principles also acknowledge that publishers and editors are responsible for promoting accessibility, diversity, equity, and inclusivity in all aspects of the publication. Editorial decisions should be based on scholarly merit. They should not be affected by the origins of the manuscript, including the nationality, ethnicity, political beliefs, race, or religion of the authors. Journals should ensure no policies create an exclusionary environment for anyone wanting

to engage with the journal and should regularly assess their policies for inclusivity.

A) COMMITTEE ON PUBLICATION ETHICS (COPE)

Guidelines on Good Publication Practice

COPE was founded in 1997 to address breaches of research and publication ethics. A voluntary body providing a discussion forum and advice for scientific editors, it aims to find practical ways of dealing with the issues, and to develop good practice.

COPE provides advice to editors and publishers on all aspects of publication ethics and, in. particular, how to handle cases of research and publication misconduct. It also provides a forum for its members to discuss individual cases. COPE does not investigate individual cases but encourages editors to ensure that cases are investigated by the appropriate authorities (usually a research institution or employer).All COPE members are expected to apply COPE principles of publication ethics outlined in the core practices.

Intellectual honesty should be actively encouraged in all medical and scientific courses of study, and used to inform publication ethics and prevent misconduct. It is with that in mind that these guidelines have been produced.

The guidelines were developed from a preliminary version drafted by individual members of the committee, which was then submitted to extensive consultation. They address: study design and ethical approval, data analysis, authorship, conflict of interests, the peer review process, redundant publication, plagiarism, duties of editors, media relations, advertising, and how to deal with misconduct.

1. Study design and ethical approval

Good research should be well justified, well planned, appropriately designed and ethically approved. To conduct research to a lower standard may constitute misconduct.

2. Data Analysis

Data should be appropriately analyzed, but inappropriate analysis does not necessarily amount to misconduct. Fabrication and falsification of data do constitute misconduct.

3. Authorship

There is no universally agreed definition of authorship, although attempts have been made. As a minimum, authors should take responsibility for a particular section of the study.

4. Conflicts of interest

Conflicts of interest comprise those which may not be fully apparent and which may influence the judgment of author, reviewers, and editors. They have been described as those which, when revealed later, would make a reasonable reader feel misled or deceived.

They may be personal, commercial, political, academic or financial.

“Financial” interests may include employment, research funding, stock or share ownership, payment for lectures or travel, consultancies and company support for staff.

5. Peer review

Peer reviewers are external experts chosen by editors to provide written opinions, with the aim of improving the study.

Working methods vary from journal to journal, but some use open procedures in which the name of the reviewer is disclosed, together with the full or “edited” report.

6. Redundant publications

Redundant publication occurs when two or more papers, without full cross reference, share the same hypothesis, data, discussion points, or conclusions.

7. Plagiarism

Plagiarism ranges from the unreferenced use of others' published and unpublished ideas, including research grant applications to submission under "new" authorship of a complete paper, sometimes in a different language. It may occur at any stage of planning, research, writing, or publication: it applies to print and electronic versions.

8 .Duties of editors

Editors are the stewards of journals. They usually take over their journal from the previous editor(s) and always want to hand over the journal in good shape. Most editors provide direction for the journal and build a strong management team. They must consider and balance the interests of many constituents, including readers, authors, staff, owners, editorial board members, advertisers and the media.

9. Media relations

Medical research findings are of increasing interest to the print and broadcast media. Journalists may attend scientific meetings at which preliminary research findings are presented, leading to their premature publication in the mass media.

10. Advertising

Many scientific journals and meetings derive significant income from advertising.

B) WAME – World Association of Medical Editors

Medical journals aspire to select, through peer review, the highest quality science. To achieve this, the entire peer Medical peer review and publication process must be thorough, objective, and fair. Almost every aspect of this process involves review involves important ethical principles and decisions, which are seldom explicitly stated and even less on shared with the important the readership. Journals' reputations depend on the trust of readers, authors, researchers, reviewers, editors, patients, and readership. Research subjects, funding agencies, and administrators of public health policy. This trust is enhanced by describing research describing as explicitly as possible the journal's policies to ensure the ethical treatment of all participants in the publication as publication process.

WAME is a global nonprofit voluntary association of editors of peer-reviewed medical journal who seek to foster cooperation and communication among editors; improve editorial standards; promote professionalism in medical editing through education, self- criticism and self-regulation; and encourage research on the principles and practice of medical editing .WAME develops policies and recommendations of best practices for medical journals editors and has a syllabus for editors that members are encouraged to follow.

WAME is a non-profit voluntary association of editors of peer-reviewed medical journals from countries throughout the world who seek to foster international cooperation among and education of medical journal editors. Membership in WAME is free and all decision-making editors of peer-reviewed medical journals are eligible to join. Membership is also available to selected scholars in journal editorial policy and peer review. WAME has more than 1830 members representing more than 1000 journals from 92 countries (2017 data).

WAME has the following goals:

- to facilitate worldwide cooperation and communication among editors of peer- reviewed medical journals;

- to improve editorial standards, to promote professionalism in medical editing through education, self-criticism and self-regulation;
- to encourage research on the principles and practice of medical editing.
- WAME's founding members also agreed that members of WAME shall be dedicated to high ethical and scientific principles in the pursuit of the following common goals:
- to publish original, important, well-documented peer-reviewed articles on clinical and laboratory research;
- to provide continuing education in basic and clinical sciences to support informed clinical decision making;
- to enable physicians to remain informed in one or more areas of medicine;
- to improve public health internationally by improving the quality of medical care, disease prevention and medical research;
- to foster responsible and balanced debate on controversial issues and policies affecting medicine and health care;
- to promote peer review as a vehicle for scientific discourse and quality assurance in medicine and to support efforts to improve peer review;
- to achieve the highest level of ethical medical journalism;
- to promote self-audit and scientifically supported improvement in the editing process;
- to produce publications that are timely, credible and enjoyable to read;
- to forecast important issues, problems and trends in medicine and health care;
- to inform readers about non-clinical aspects of medicine and public health, including political, philosophic, ethical, environmental, economic, historical and cultural issues;
- to recognize that, in addition to these specific objectives, a medical journal has a social responsibility to improve the human condition and safeguard the integrity of sciences.

A comprehensive policy on publication ethics which addresses all the major areas of ethics we believe contemporary science journals should consider. The aim is to encourage editors of journals to use ethics use these to develop such policies for their journals and make them accessible to their constituents by publishing them in these in print or on the web. The document makes recommendations on what we consider to be the best solutions to address print address these ethical problems, but we expect individual journals to customize the policies to best fit their own situations. However, we believe that every journal should have an explicit policy on each of these issues, and that these policies however, policies should be published in each journal so they are accessible to readers, authors, and reviewers.

- Conflict of Interest in Peer-Reviewed Medical Journals Conflict Journals
- Study Design and Ethics Study Ethics
- Authorship
- Peer Review
- Editorial Decisions
- Originality, Prior Publication, and Media Relations Originality, Relations
- Plagiarism

- Advertising
- Responding to Allegations of Possible Misconduct Responding Misconduct
- Relation of the Journal to the Sponsoring Society

Conflict of interest

A conflict of interest exists when two or more contradictory interests relate to an activity by an individual or an institution. The conflict lies in the situation, not in any behavior or lack of behavior of the individual. That means that a conflict of interest is not intrinsically a bad thing. Examples include a conflict between financial gain and meticulous completion and reporting of a research study or between responsibilities as an investigator and as a treating physician for the same trial participant.

A conflict of interest arises when one's judgment is compromised based on connections, favors, or competing interests, and/or when one's position is used to gain favor or extra rewards. Conflicts of interest are not always immediately obvious, nor does a conflict of interest in-and-of-itself constitute wrongdoing. (Korenman, 2020)

The changing dynamics of research environment and collaborations can often give rise to conflicts of interests and commitments/obligations. Therefore, it is important to maintain transparency in research and publication by both authors and publishers.

Conflicts of interest can arise when a researcher who is heading the research of a product is also a visiting consultant at the parent company. Conflicts of interest can also arise

when an author, researcher, editor, or a peer reviewer has a relationship (personal or financial) that can directly or indirectly affect his/her objectivity in making decisions or influence his/her actions.

Conflicts of interest are "situations in which financial or other personal considerations may compromise, or have the appearance of compromising, an investigator's judgement in conducting or reporting research." AAMC, 1990

"A conflict of interest in research exists when the individual has interests in the outcome of the research that may lead to a personal advantage and that might therefore, in actuality or appearance compromise the integrity of the research." NAS, Integrity in Scientific Research.

Conflicts of interests can arise because of the following:

- Financial relationships: These can include direct employment, consultancies to a related organization/company, stock options, grants, patents, and paid expert testimony.
- Personal relationships: These can include rivalries and bias.
- Intellectual beliefs: These can include moral convictions or personal beliefs that can influence scientific opinions.
- Academic competition: It can include biased judgments because of the direct or indirect competition with peers or colleagues.

Such situations are sometimes unavoidable and finding yourself in such a situation itself is not unethical. Therefore, all the stakeholders, including authors, editors, and reviewers must maintain transparency and disclose all potential or actual conflicts of interest.

Conflicts of Interest represent circumstances in which professional judgments or actions regarding a primary interest, such as the responsibilities of a medical researcher may be at risk of being unduly influenced by a secondary interest, such as financial gain or career advancement.

Conflicts of Interest (COIs) often arise in academic publishing such conflicts may cause wrongdoing and make it more likely. Ethical standards in academic publishing exist to avoid and deal with conflicts of interest, and the field continues to develop new standards. Standards vary between journals and are unevenly applied. According to the International

Committee of Medical Journals, "authors have a responsibility to evaluate the integrity, history, practices and reputation of the journals to which they submit manuscripts".

Conflicts of Interest arise when authors, reviewers or editors have interests that are not fully apparent and that may influence their judgments' on what is published. They have been described as those which, when revealed later, would make a reasonable reader feel misled or deceived. Transparency and objectivity are essential in scientific research and the peer review process.

When an investigator, author, editor or reviewer has a financial/personal interest or belief that could affect his/her objectivity, or appropriately influence his/her actions, a potential conflict of interest exists. Such relationships are also known as dual commitments, competing interests or competing loyalties.

The most obvious conflicts of interest are financial relationship such as:

- Direct: employment, stock ownership, grants, patents.
- Indirect: honoraria, consultancies to sponsoring organizations, mutual fund ownership, paid expert testimony.

Conflicts can also exist as a result of personal relationships, academic competition, and intellectual passion.

An example might be a researcher who has:

- A relative who works at the company whose product the researcher is evaluating.
- A self-serving stake in the research results(potential promotion/career advancement based on outcomes).

Personal beliefs that are in direct conflict with the topic he/she is researching

The Office of Research Integrity (ORI) suggests that to manage or remove conflicts of interest, take the following steps .

- Disclose all interests so that the stakeholders are aware and can take the required steps.
- Monitor research and research results for transparency and integrity.
- Remove the person in question from important processes such as data interpretation or review process.

Researchers have the responsibility to maintain the integrity of the research data. The group members involved in the handling of the data should maintain privacy and confidentiality of the data while recording on hard-copy or electronic evidence. Lapses in the management of research data can give rise to many ethical issues. These issues are more prominent in studies involving human subjects.

Researchers should, therefore, provide data management plan (DMP) to ethics committees for clinical studies/trials for approval. Moreover, informed consent to obtain data and protecting or anonymising a certain part of data during analysis or sharing should also be proactively implemented. An effective data management plan can help to avoid ethical issues

UNIT4&5

Publication misconduct: Definition, concept, problems that lead to unethical behavior and vice versa, types 5. Violation of publication ethics, authorship and contributor ship

Publication misconduct and violations of publication ethics, authorship, and contributorship have become significant concerns in the academic and scientific community. The increasing pressure to publish research findings, secure funding, and advance academic careers has led to a rise in unethical practices that undermine the integrity of scholarly publications.

Publication misconduct encompasses a range of unethical behaviors, including plagiarism, fabrication and falsification of data, duplicate and redundant publication, and selective reporting. These practices not only compromise the reliability of scientific knowledge but also hinder scientific progress and erode public trust.

Violations of publication ethics, such as improper authorship and contributorship, further contribute to the problem. Issues like ghost authorship, where individuals who made significant contributions are not acknowledged, and gift authorship, where undeserving individuals are included as authors, distort the attribution of credit and responsibility.

The consequences of publication misconduct are far-reaching. They can damage the reputation of researchers, institutions, and scientific journals, lead to legal and ethical ramifications, and ultimately hinder the advancement of knowledge. Addressing these issues requires collective efforts from researchers, institutions, and publishers to establish and enforce strict guidelines, promote transparency, and ensure accountability.

Purpose of the Report

The purpose of studying publication misconduct and violations of publication ethics, authorship, and contributorship is multifold:

1. Upholding Scientific Integrity: The primary purpose is to safeguard the integrity of scientific research. By identifying and addressing instances of publication misconduct, the study aims to preserve the credibility and reliability of scholarly publications, ensuring that scientific knowledge is based on accurate and ethical practices.

2. Promoting Transparency and Accountability: Understanding publication misconduct and ethical violations helps establish transparent and accountable publishing practices. By raising awareness about the various forms of misconduct and their implications, the study encourages researchers, institutions, and publishers to adhere to ethical guidelines and take responsibility for their contributions.

3. Preserving Public Trust: Publication misconduct can erode public trust in the scientific community and the validity of research findings. The study seeks to restore and maintain public confidence by highlighting the importance of ethical conduct in publishing. It emphasizes the need for accurate reporting, proper authorship attribution, and responsible data handling to ensure that research outcomes are reliable and beneficial to society.

4. Providing Guidelines and Best Practices: The study aims to provide researchers, institutions, and publishers with guidelines and best practices to prevent and address publication misconduct. By offering recommendations for responsible publishing, authorship, and contributorship, it empowers stakeholders to adopt ethical practices and maintain the highest standards of integrity.

5. Strengthening the Scientific Community: Understanding and addressing publication misconduct fosters a culture of collaboration, trust, and accountability within the scientific community. By promoting ethical conduct, the study contributes to the development of a robust research ecosystem, where researchers can confidently build upon previous work, collaborate effectively, and advance scientific knowledge.

Overall, the purpose of studying publication misconduct and violations of publication ethics, authorship, and contributorship is to ensure the credibility, transparency, and trustworthiness of scholarly publications, thereby supporting the advancement of scientific knowledge and benefiting society as a whole.

PUBLICATION MISCONDUCT

Publication misconduct refers to unethical or improper behavior related to the publication of research or scientific works. It encompasses a range of activities, including but not limited to plagiarism, fabrication or falsification of data, improper authorship attribution, duplicate publication, undisclosed conflicts of interest, and failure to adhere to ethical guidelines. Such misconduct undermines the integrity of scientific research and publication, compromises the credibility of the academic community, and deceives readers and peers. Publication misconduct can occur across various disciplines and affects both journals and other forms of scholarly communication. Detecting and addressing publication misconduct is crucial for maintaining the trust and reliability of scientific literature.

- Publication misconduct refers to any unethical or improper behavior related to the publication of research or scientific works.
- It includes actions that violate the principles of academic integrity and can have a negative impact on the reliability, accuracy, and credibility of scientific research.
- It is important to note that publication misconduct can have serious consequences for both the individual researcher and the wider scientific community, and it is crucial that steps are taken to prevent and address such behavior.
- Publication misconduct is a serious offense that can result in loss of reputation, legal action, and sanctions by academic institutions and funding agencies.

Types of Publication Misconduct

Plagiarism

Plagiarism is the act of using someone else's work or ideas without proper attribution, while self- plagiarism is reusing one's own previously published work without acknowledgement. Both forms of plagiarism are considered unethical and can have serious consequences in academic and professional settings.

- Plagiarism can include copying and pasting text from a website, using someone else’s research without citing it, or paraphrasing someone else’s ideas without proper attribution.
- Plagiarism is a serious ethical violation in academic and professional publishing, and it can result in serious consequences such as being retracted from a publication, losing credibility, and facing legal action.
- It is important to always give proper credit to the original source of any information or ideas used in academic work.

Fabrication and Falsification

Fabrication involves creating or inventing information or events that did not occur, while falsification refers to the deliberate alteration or manipulation of existing information or evidence. Both practices involve deception and can undermine the integrity and trustworthiness of the information or claims being presented.

- Data Fabrication is the construction or addition of data, observations, or characterizations that never occurred in the gathering of data or running of experiments. It involves making up research results and data, and reporting them as if they are true.
- This unethical practice jeopardizes the validity of study and has serious implications for individuals and society as a whole.
- Data Fabrication is a violation of research ethics and is considered research misconduct.

- Fabrication can occur at any stage of the research process, from the design of the study to the writing and submission of the final paper.
- Data falsification refers to the intentional manipulation of research data to deceive or mislead.
- Falsification is manipulating research materials, equipment, or processes, or changing or omitting data or results such that the research is not accurately represented in the research record.
- Data falsification can occur in any type of data, including numerical data, qualitative data, or metadata.
- Data falsification can have serious consequences, including damage to the credibility of the data, loss of trust in the organization or individual responsible for the data, legal or financial penalties, and damage to reputations.
- Data falsification can be committed by individuals or organizations, and can occur at any stage of the data collection, analysis, or dissemination process.

Duplicate and Redundant Publication

Duplicate publication refers to the act of submitting and publishing the same research findings or data in multiple journals or venues. This practice is considered unethical as it can lead to the misleading inflation of scientific literature and waste valuable resources. Redundant publication, on the other hand, involves republishing substantial portions of previously published work without adequate justification or acknowledgement. Both duplicate and redundant publication can undermine the integrity of the scientific publishing process and can be subject to disciplinary actions by journals and institutions.

- Duplicate publication refers to the practice of publishing the same research findings or data in more than one journal or publication, without disclosing that the work has been previously published.
- Duplicate publication occurs when an author submits a manuscript for publication that has already been published or accepted for publication elsewhere, or if they submit the same manuscript to multiple publications simultaneously.
- This can be intentional or unintentional, and can result in confusion, duplication of effort, and potentially invalidate the findings of the original study.
- Duplicate publication can be a serious breach of academic integrity and ethical conduct, and can lead to disciplinary action, including loss of credibility and career damage.
- To avoid duplicate publication, it is important to properly cite all sources and to submit original work for publication.

Data Manipulation and Selective Reporting

Data manipulation involves altering, fabricating, or selectively omitting data to achieve desired results or conclusions. Selective reporting refers to highlighting or suppressing specific data or findings to support a particular narrative. Both practices can distort the accuracy and reliability of research, compromising scientific integrity and potentially misleading the public or other researchers.

- Duplicate publication occurs when an author submits a manuscript for publication that has already been published or accepted for publication elsewhere, or if they submit the same manuscript to multiple publications simultaneously.
- This can be intentional or unintentional, and can result in confusion, duplication of effort, and potentially invalidate the findings of the original study.

- Duplicate publication can be a serious breach of academic integrity and ethical conduct, and can lead to disciplinary action, including loss of credibility and career damage.
- To avoid duplicate publication, it is important to properly cite all sources and to submit original work for publication.

Misappropriation of ideas

Misappropriation of ideas occurs when someone takes credit for or uses another person's ideas, concepts, or intellectual property without permission or proper attribution. This unethical practice can lead to the infringement of intellectual property rights, stifle innovation, and undermine the rightful recognition and benefits that should be given to the original creator or innovator.

Impropriety of Authorship

Impropriety of authorship refers to unethical practices related to assigning or claiming authorship in scholarly or scientific publications. This can include undeserved inclusion or exclusion of individuals as authors, guest authorship (where someone is listed as an author without making a substantial contribution), or ghostwriting (where significant contributors are not acknowledged). Such impropriety can distort the credit, accountability, and fairness within academic and research communities.

Failure to comply with Legislative and Regulatory requirements

Willful violations of rules concerning the safe use of chemicals, care of human and animal test subjects, inappropriate use of investigative drugs or equipment, and inappropriate use of research funds.

Violation of Generally accepted Research practices

This can include the proposal of the research study, manipulation of experiments to generate preferred results, deceptive statistical or analytical practices to generate preferred results, or improper reporting of results to present a misleading outcome.

Salami slicing

- Salami slicing is a technique in publishing where it may involve taking an original idea or work and breaking it down into smaller, less significant parts or rearranging the order of the content to make it seem like the original work has been significantly altered.
- Salami slicing in publication refers to the unethical practice of dividing research work into multiple smaller publications in order to increase the number of publications and maximize the author’s publication count, without adding significant new knowledge or value to the field.
- Salami slicing can be harmful to the scientific community as it wastes the resources of publishers, reviewers, and readers by producing a large volume of low-quality publications that do not contribute to the advancement of knowledge.
- It can also skew metrics that rely on the number of publications, such as citation counts and h-indices, leading to distorted assessments of researchers’ productivity and impact

VIOLATION OF PUBLICATION ETHICS

Authorship and Contributorship

Authorship refers to the act of creating or originating a piece of work, such as a book or article. It signifies the individual or individuals who are responsible for the content and ideas presented. Contributorship, on the other hand,

acknowledges the individuals who have made significant contributions to a collaborative work, recognizing their involvement and impact.

•Misconduct in authorship can occur when individuals are unfairly excluded or included as authors without their consent.

•This can result in a breach of academic integrity and harm the reputation of the individuals involved.

•It is important for researchers to follow proper procedures for authorship, including obtaining consent from all authors and acknowledging the contributions of all individuals involved.

•Reporting instances of authorship misconduct is important for maintaining academic integrity and preventing further harm to individuals or the research community.

• **Ghost Authorship**

Ghost authorship refers to the practice of concealing the true author's identity and attributing authorship to someone else. This can occur in various fields, such as academic research or literary works, and is often done to give the appearance of credibility or authority to the falsely attributed author.

• **Gift Authorship**

Gift authorship, also known as honorary or guest authorship, is the inclusion of individuals as authors of a work without their substantial contribution. It is often done as a favor or recognition, rather than based on actual intellectual or creative input.

• **Guest authorship**

Happens when influential individuals “lend” their name to a study to boost its credibility.

However, these people weren’t involved in the actual research.

Honorary authorship:

This occurs when someone is included as an author as a reward or in recognition of their status or position, even though they did not contribute significantly to the study

Authorship Disputes

Authorship disputes arise when multiple individuals claim authorship of a work. These conflicts can occur due to disagreements over contributions, credit allocation, or contractual obligations, and may require resolution through legal means or academic arbitration.

Misrepresentation and Misconduct in Research

Misrepresentation and misconduct in research involve the intentional or negligent distortion, fabrication, or falsification of data, results, or methodologies. It undermines the integrity of scientific inquiry and can lead to severe consequences, such as retractions, loss of credibility, and disciplinary actions.

Conflicts of Interest

Conflicts of interest occur when individuals or entities have competing personal, financial, or professional interests that may compromise their objectivity, judgment, or decision-making in a given situation, potentially leading to biased or unethical behavior.

•A conflict of interest is anything that interferes with, the full and objective presentation, commissioning, peer review, editorial decision-making, or publication of research or non- research articles submitted to Publishing Journals.

•Conflict of interest exists if a person or institution has a relationship, personal or otherwise, which has the potential to compromise or in any way interfere with professional objectivity or judgment in issues related to the relationship.

•The Committee on Publication Ethics (COPE) in its Guidelines on Good Publication Practice (2003) states that:

•Conflicts of interest arise when authors, reviewers, or editors have interests that are not fully apparent and that may influence their judgments on what is published. They have been described as those which, when revealed later, would make a reasonable reader feel misled or deceived.'

IMPLICATIONS OF PUBLICATION MISCONDUCT

• Academic Integrity

Publication misconduct undermines academic integrity by compromising the honesty and ethical standards of research. It damages the reputation of individuals and institutions, erodes trust in scholarly publications, and diminishes the overall credibility of the academic community. Upholding academic integrity requires stringent measures to detect, address, and prevent publication misconduct.

• Scientific Progress and Trust

Publication misconduct has detrimental effects on scientific progress and trust. It compromises the validity and reliability of research findings, hindering the development of knowledge. It erodes trust in the scientific community and undermines public confidence in scientific research, which is vital for informed decision-making and societal progress.

• Reputation Damage

Publication misconduct damages the reputation of individuals and institutions involved. It undermines trust in their integrity and credibility, leading to skepticism about their research and findings. Reputation damage can have long-lasting effects, impacting career prospects, collaborations, funding opportunities, and overall standing within the scientific community.

• Legal and Ethical Consequences

Publication misconduct can have both legal and ethical consequences. Legal ramifications may include lawsuits for copyright infringement or defamation. Ethical consequences involve violations of research integrity and professional ethics, leading to loss of credibility, damage to reputation, and potential disciplinary actions, such as retraction of papers or sanctions by professional organizations.

.PREVENTION AND DETECTION

Education and Awareness

Education and awareness about publication misconduct and violation of publication ethics are crucial. Researchers, institutions, and publishers should promote responsible conduct, provide training on research ethics, and foster a culture of integrity. Clear guidelines and resources should be available to ensure transparency, honesty, and adherence to ethical standards in scientific publishing.

Journal Guidelines and Policies

Journal guidelines and policies regarding publication misconduct and violation of publication ethics are crucial for maintaining integrity. They typically outline expectations for authors, including avoiding plagiarism, data manipulation, and disclosing conflicts of interest. Journals may have procedures for reporting misconduct,

conducting investigations, and imposing sanctions, such as retraction or banning authors.

Peer Review Process

The peer review process plays a crucial role in detecting and addressing publication misconduct and violations of publication ethics. Through rigorous evaluation, peer reviewers can identify potential issues such as plagiarism, data manipulation, or undisclosed conflicts of interest. Their expertise helps ensure the integrity and quality of scholarly publications, promoting ethical standards and research integrity.

Ethical Oversight and Reporting Mechanisms

Ethical oversight of publication misconduct involves the establishment of clear guidelines, codes of conduct, and institutional review boards. Reporting mechanisms, such as anonymous reporting channels and whistleblower protection, are crucial for individuals to report violations. Journal editors, peer reviewers, and professional organizations play a pivotal role in investigating and addressing allegations of publication misconduct and ethics violations.

INTERNATIONAL INITIATIVES AND GUIDELINES

Committee on Publication Ethics (COPE)

The Committee on Publication Ethics (COPE) is an international organization that provides guidance and support to publishers, editors, and researchers in promoting integrity and addressing publication misconduct. COPE offers resources, guidelines, and forums for discussion to foster ethical publishing practices and maintain the integrity of scholarly literature.

- COPE, or the Committee on Publication Ethics, is a nonprofit organization that provides guidance and support to editors, publishers, and researchers on publication ethics. The organization was founded in 1997 and has since grown to become a leading authority on publication ethics.
- Membership: COPE has over 16,000 members from around the world, including journal editors, publishers, and researchers.
- Guidelines: COPE provides guidelines on publication ethics, including ethical standards for research, authorship, peer review, and conflicts of interest.
- Education and training: COPE offers education and training programs to help editors, publishers, and researchers understand and implement ethical publishing practices.
- Case consultation: COPE provides advice and support to members who are facing ethical dilemmas or issues related to publication ethics.
- Advocacy: COPE advocates for ethical publishing practices and works to promote transparency, integrity, and accountability in academic publishing.

International Committee of Medical Journal Editors (ICMJE)

The International Committee of Medical Journal Editors (ICMJE) is a global organization composed of prominent medical journal editors. ICMJE develops and updates the Uniform Requirements for Manuscripts Submitted to Biomedical Journals, which sets ethical and editorial standards for medical publications. It aims to promote integrity, transparency, and consistency in medical research and publishing.

World Association of Medical Editors (WAME)

The World Association of Medical Editors (WAME) is a global organization that promotes excellence in medical

publishing and editing. WAME provides a platform for medical editors to collaborate, share best practices, and address ethical and practical challenges in the field. It offers resources, guidelines, and educational opportunities to enhance the quality and integrity of medical publications.

BEST PRACTICES FOR RESPONSIBLE PUBLISHING

Transparent Reporting and Data Sharing

Transparent reporting and data sharing are essential practices in scientific research. Transparent reporting ensures that research methods, findings, and limitations are clearly and accurately communicated. Data sharing involves making research data publicly available to promote reproducibility, facilitate collaboration, and enable further analysis, validation, and knowledge advancement in the scientific community.

Proper Authorship and Contributorship Practices

Proper authorship and contributorship practices are crucial for acknowledging individuals' contributions to research. It involves accurately identifying authors who have made substantial intellectual contributions and ensuring their accountability for the work. Clear guidelines and discussions on roles and responsibilities help maintain fairness, transparency, and integrity in assigning authorship and contributorship credits.

Ethical Data Handling and Analysis

Ethical data handling and analysis encompass practices that prioritize the privacy, confidentiality, and informed consent of research participants. It involves ensuring data security, proper anonymization, and adherence to ethical guidelines and regulations. Transparency, integrity, and responsible use of data are fundamental to maintain public trust and protect research participants' rights.

Conflict of Interest Disclosure

Conflict of interest disclosure involves transparently revealing any financial, personal, or professional relationships or affiliations that may influence or be perceived to influence research outcomes. It ensures transparency, integrity, and credibility in scientific publications, allowing readers to assess potential biases and make informed judgments about the research findings.

Publication misconduct and violations of publication ethics are significant concerns in the scientific community. They include practices such as plagiarism, data fabrication, selective reporting, and inadequate authorship attribution. These actions undermine the integrity and credibility of research, impeding knowledge advancement and misleading stakeholders. Publication misconduct leads to reputational damage for individuals and institutions involved, impacting career prospects and funding opportunities. It can also have legal consequences, including copyright infringement or defamation lawsuits. Ethical oversight, reporting mechanisms, and organizations like COPE and ICMJE play a crucial role in promoting ethical publishing practices, investigating allegations, and maintaining the integrity of scholarly literature. Transparent reporting, data sharing, proper authorship and contributorship practices, ethical data handling and analysis, and conflict of interest disclosure are vital for upholding ethical standards in scientific publishing.

6&7

1. IDENTIFICATION OF PUBLICATION MISCONDUCT, COMPLAINTS AND APPEALS

Publication of the research work is an important aspect for communicating research work with the rest of the world. The author gets an opportunity to share their thoughts, ideas, and methods with the community. It creates a permanent record of your contribution in that field and gives recognition and acknowledgment for the efforts.

Readers will be aware of the work being conducted in their area and benefit them in their work. It is very crucial to pay due attention to publication ethics. Publication ethics plays an important role in producing quality research literature. Publication misconduct generally tend to occur due to lack of awareness among authors, pressure for publication with respect to professional advancements, financial gain and lack of monitoring and control mechanisms in place.

Publication is the process by which a researcher publishes his work in a journal, a book or a magazine to bring recognition of his work. It is made public then. The researcher who wants to work on same area collects information from that book and enrich themselves. But when the researchers violate the ethical requirements, misconduct occur. This includes Plagiarism, Fabrication, Falsification, Authorship conflict, Redundant Publication, Salami Slicing etc

TYPES OF PUBLICATION MISCONDUCT

1.Plagiarism is one of the most dangerous misconducts in research. "Plagiarism is the appropriation of other people's material without giving proper credit" (the European Code of Conduct for Research Integrity) . "Plagiarism is the appropriation of another person's ideas processes, results or words without giving appropriate credit." (Us Federal Policy on Research Misconduct).

There are different types of plagiarism:

• Direct plagiarism in which a portion of someone's writing is copied word by word.

• Self Plagiarism in which the researcher presents his or her own previously published data.

• Mosaic Plagiarism in which a student uses someone's writing without quotation marks.

• Accidental Plagiarism in which the researchers does not cite their sources or even misquotes without giving proper attribution.

2.Fabrication: In the European Code of conduct fabrication is defined as "making up results and recording them as if they were real". It is the act of making up data and reporting the made-up data as a true reflection of never conducted research study (Martyn, 2003). Data fabrication are undertaken by immoral and moral individuals (Gerrets,2016).

3.Falsification: is the changing or omission of research data to present an incorrect result (Martyn,2003). In this way the data is manipulated and a false impression is created. According to Irving Hexham "Falsifying is the deliberate undertaking to deceive the pursuer through the designation and depiction as one's own work".

4.Authorship Conflict: Authorship is identifying the person who has given his contribution in a noteworthy way to the particular research work.

5.Acknowledgement: The ICMJE guidelines state that "All others who contributed to the work who are not authors should be named in the acknowledgement".

6.Contributorship: The ICMJE guidelines recommend that "author should provide a description of what each contributed and editor should publish that information".

7.Ghost author: It is seen that some writer's role is not acknowledged though the name should be there according to the ICMJE guidelines. They involve themselves in data collection and data interpretation. Guest authorship /Gift authorship: There are some persons whose names are listed but actually they did not make a significant contribution. They do not fulfill the ICMJE guidelines. They are often senior figures. Sometimes the name is added on understanding.

8.Redundant Publication It is the publication of a paper which is similar to a published paper by the same author. He does this without acknowledging the source. It is an example of 'poor scholarship' and the study contributes very less. It is turned to be a wastage to the editor and reviewer in every way.

9. Salami Slicing: Sometimes the researcher wants to enhance their publication number. As a result, they divide the data set. It would have been a meaningful paper with the whole data but due to splitting different papers have been formed. It affects the importance of the data. This is called the salami publication or salami slicing.

REASON OF PUBLICATION MISCONDUCT

- ➢ Lack of awareness about research and publication ethics
- ➢ Pressure for publication
- ➢ Financial enticement to compromise integrity
- ➢ Wish for massive curriculum vitae
- ➢ Academic advancement and promotion
- ➢ Competition among the colleagues
- ➢ Professional supremacy

CONSEQUENCE OF PUBLICATION MISCONDUCT

- It could mean the end to career as a researcher. He may be dismissed and rejected.
- Academic achievement may be taken away.
- It means a huge loss of fund, time, reputation to the editor and reviewer as well as the researcher.
- Destroy the public trust on researchers because people in general have lot of faith on the researchers. Ethical Requirements
- Honesty and Carefulness
- Objectivity and Integrity
- Transparency and Confidentiality
- Responsible publication and Responsible Mentoring
- Non-Discrimination and Competence
- Legality Conclusion Publication of research work is very much important. The published work helps the young researchers to enrich their knowledge. They gather information from that. But there is research ethics. All researchers must be aware of that standard procedure to avoid publication misconduct. As discussed, researchers are found guilty and they have been deregistered and their papers are being retracted. The misconducts have immense impact. Govt. and Research Institutes must enforce effective policies to guide research studies across the world.

2. PEDATORY PUBLISHERS AND JOURNALS

In the year 2008 Jeffrey Beall coined the term predatory journals and started awareness about these predatory journals by creating a Beall list. "Predatory journals and publishers are entities that prioritize self-interest at the expense of scholarship and are characterized by false or misleading information, deviation from best editorial and publication practices, a lack of transparency, and/or the use of aggressive and indiscriminate solicitation practices" (Grudniewicz et al., 2019).

Predatory journal is also called fraudulent, deceptive, or pseudo-journals. They are publications that claim to be legitimate scholarly journals, but misrepresent their publishing practices. Predatory publishers are a growing phenomenon in the world of academic publishing. There is no one standard definition of what constitutes a predatory publisher but generally they are those publishers who charge a fee for the publication of material without providing the publication services an author would expect such as peer review and editing. A predatory publisher is an opportunistic publishing venue that exploits the academic need to publish but offers little reward for those using their services. These journals exist solely for profit without any commitment to publication ethics or integrity of any kind. Predatory publishers may cheat authors through charging publishing-related fees without providing the expected or industry standard services. Predatory publishers may also deceive academics into serving as editorial board members or peer reviewers. In short, fake scholarly publications lack the usual features of editorial oversight and transparent policies and operating procedures that are expected from legitimate peer-reviewed publications. The phenomenon of predatory publishing grew with the emergence of online publishing, coupled with a widespread academic climate of research evaluation linked to journal title prestige and journal-level metrics.

When the researcher's manuscript is rejected by the reputed publishers, they get the negative feedback that their contents or outputs are not up to the mark or findings expected by the reputed journals after regular submissions and due to their inexperience in finding the right journal for their publications they publish in predatory journals. It is also difficult for the inexperienced authors to find which journal is authenticate and which journal is predatory and they publish in these non-credible journals. scientific community most suffers from this who publishes in these predatory journals. In Indian scenario the UGC (University Grant Commission) grants high credit for the articles published in high impact factor journals and this has may led inexperienced authors to publish their articles in these predatory journals which shows high impact factor. The authors who feel to increase their curricular vitae publishes in these journals. These predatory journals falsely claims that they have highly reputed experts on their editorial board.

Predatory publishing not only harms or degrades academic reputations but also wastes time, money, resources, and efforts (Shrestha et al., 2020). Predatory publications pose a danger that could undermine the quality, integrity, and reliability of published scientific research works. Predatory publications also harm the reputation of the universities and research organizations which are connected with these publications. Universities and research organizations should educate researchers, especially juniors, about the existence of predatory journals, the dangers they pose, and ways to avoid them (Shrestha, 2020).

Common Characteristics of Predatory Journals

- Claims to be a peer reviewed open access publication but does not provide adequate peer review.
- Advertises a Journal Impact Factor or other citation metric on the website that is incorrect or cannot be verified.
- May advertise an unrealistic timeline for publication.
- Publishes all articles for which authors pay an APC even if the article is low quality, unrelated to the topic of the journal, or nonsensical.
- Publishes articles that have many grammar mistakes (little or no copyediting).
- Editorial board includes people who do not exist, do not have credentials relevant to the topic of the journal, have affiliations that cannot be verified, or are real people who are not aware that they are listed as members.
- Mimics name or website of other well-known, legitimate journals.

- Aggressively targets potential authors through emails.
- May state that offices are in one country but contact details are in another.
- Solicitation emails contain grammatical errors of phishing scams.
- Lack of transparency about acceptance process or APCs, so that authors do not how much they will be charged until their article is accepted.
- Requires authors sign away their copyright to the article at the time of submission, making it impossible for the author to submit the article to another publisher.
- Publishes articles submitted before the authors have signed the publishing agreement, then refuses to take the article down if the author withdraws the submission.
- Removes articles or entire journals from the web without warning or informing authors.

Dangers of Publishing in a Predatory Journal

1. Lack of Peer-Review: Predatory publishers often promise rigorous, yet speedy peer-review process even though rigorous peer-review is a time- consuming process. In reality, predatory publishers often publish papers that have not gone through any peer-review process.

2. The peer-review process: establishes the validity of research; prevents falsified work from being accepted and published; and allows authors to revise and improve papers prior to publication.

3. Work Could Disappear: Unlike legitimate publishers, predatory publishers are not committed to preserving your published work. Papers published in predatory journals could disappear from their website at any time making it difficult to prove that your paper was ever published in said journal when applying for promotion or tenure.

4. Work Will be Difficult to Locate: Predatory publishers often claim to be indexed in popular databases, when they are not actually indexed in these resources. Fortunately, it is easy to double check this claim by doing a simple search for the journal in these databases.

5. Reputation may be Lost: Publishing in a predatory journal can hurt the reputation of the researcher as well as the institution.

RPE 04: OPEN ACCESS PUBLISHING (4hrs.)

1. Open access publications and initiatives

2. SHERPA/RoMEO online resource to check publisher copyright & self-archiving

policies

3. Software tool to identify predatory publications developed by SPPU

4. Journal finder/journal suggestion tools viz. JANE, Elsevier Journal Finder,

Springer Journal Suggester, etc.

1. Open access publications and initiatives

Open access is a new trend in scholarly communication which aims at providing free access to scholarly literature over the internet and has gained enormous momentum in the recent years. Although OA started and has grown from the pockets of regional initiatives in the developing countries, it is appealing to developing countries and is spreading throughout the world quickly facilitated by common technical standards and open source software. OA endeavors to reduce the price and permission barriers to scholarly communication and the scholarly literature are

freely accessible now without any hindrance.Open Access (OA) initiative emerged as a revolutionary movement that promotes free access to scholarly publications over the Internet, removes the price and permission barriers and ensures the widest possible dissemination of research. OA exists where there is free, immediate and unrestricted availability of digital content. In India poor access to international journals and the low visibility of research papers are the major problems facing Indian researchers. OA is viewed as a solution to remedy this problem.A number of workshops and training events were organized in India during this period, where a few thousand libraries and computer professionals received training in open source software for building open access repositories.

Prior to the advent of the Internet publishers and academic societies dominated scholarly communication, and researchers channeled their research output solely through authoritative publishers and academic societies. Now when Internet has become a part of our lives, it continues to make changes in every aspect of our society and reshapes scholarly communication in many ways. Exponential growth of scholarly literature has put a severe hindrance on their accessibility, and the libraries, particularly in the developing countries is vexed with the problem of providing access to the vast amount of literature. In addition, the increase in the prices of academic journals by their publishers has posed a major threat to libraries which support academic researcher's research activities. Today journals are being published electronically and distributed in bundled databases controlled by large commercial publishers and libraries and users are facing restrictive licensing terms on their access and usage.To communicate the fruits of scholarly literature to a world wide community of researchers and scientists, the Open Access (OA) initiative emerged as a revolutionary movement that promotes free access to scholarly publications over the Internet, removes the price and permission barriers and ensures the widest possible dissemination of research. OA journals and literature are now expected to be read more often than those with subscriptions thereby having a higher impact rates.OA literature and journals and are expected to be read more often than those with subscriptions thereby having a higher impact rate. Additionally OA significantly accelerates the publication and use of new research by reducing the time lag between the actual completion of a piece of research and its publication.

Open Access (OA)

Open Access is simply the free online availability of digital contents, scholarly journal articles, research results which authors publish without expectation of payment and is based on an ethical argument that research funded by the public should be available to the public. OA operates within the legal framework and own the original copyrights to for their work. Authors can transfer the rights to publishers to post the work on the web or else can retain the rights to post their work on the archives.

The Budapest Open Access (2002) Initiative defines open access as "free availability on the internet, permitting users to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal or technical barriers other than those inseparable from gaining access to the internet itself." Bjork (2004) defines OA as that a reader of a scientific publication can read it over the internet, print it out and even further distribute it for non-commercial purposes without any payments or restrictions.

According to Suber (2006) Open Access to scientific article means online access without charge to readers or libraries. Committing to open access means dispensing with the financial, technical and legal barriers that are designed to limit access to scientific research articles to paying customers. In fact, open access is a step ahead of "Free Access" which removes just the price barriers by providing free access to end users. Under OA, the end user not only has free access to the content but also have the right to further distribute the content.

Definitions

1."Open access literature is digital, online, free of charge, and free of most copyright and licensing restrictions." - Budapest Open Access Initiative (BOAI)

2."Open access means making research publications freely available to all, with no paywalls or subscription fees." - European Commission

3."Open Access (OA) refers to the practice of providing online access to scientific information that is free of charge to the user and free of most copyright and licensing restrictions." - World Health Organization (WHO)

4."Open Access is a publishing model that provides immediate, worldwide, barrier-free access to the full text of research articles without requiring a subscription to the journal in which these articles are published." - Directory of Open Access Journals (DOAJ)

Salient features of Open Access

1. Open access literature is digital, free of charge and free of copyright ;
2. OA is compatible with copyright, peer review, revenue, print, preservation, prestige, career advancement, indexing and supportive services associated with conventional scholarly literature;
3. OA campaign focuses on the literature that authors give to the world without expectation of payment;
4. OA is compatible with peer review and all the major AO initiatives for scientific & scholarly literature insist on its importance.
5. OA allows for faster dissemination of research: Since OA publications are freely accessible online, they can be disseminated more quickly and widely than traditional publications, which may require a subscription or payment to access.
6. OA can increase the visibility and impact of research: By making research freely accessible online, OA can increase the visibility and impact of research, as it can be accessed and cited by a wider audience.
7. OA can promote collaboration and innovation: By allowing researchers to access and build upon each other's work more easily, OA can promote collaboration and innovation, leading to new discoveries and breakthroughs.
8. OA can benefit developing countries and underfunded institutions: By providing free access to research materials, OA can help to level the playing field for researchers and institutions in developing countries or with limited resources.
9. OA can lead to cost savings for institutions and researchers: Since OA publications do not require subscription fees or paywalls, they can lead to cost savings for institutions and researchers, who may otherwise have to pay for access to research materials.

A publication is considered in Open Access if

- Its content is universally and freely accessible , at no cost to the reader, via the internet or otherwise
- The author or copywrite owner irrevocably grants to all users, for an unlimited period, the write to use , copy and distribute the article on condition that proper attribution is given.
- It is deposited immediately, in full and in suitable electronic form, in at least one widely and internationally recognize open access repository committed to open access

(Source: UNESCO)

Open Access publication includes

- Journal article
- Books
- Conference proceedings
- Reports
- E-books
- E-thesis
- Presentations
- Data

Types of Open Access

- Gold OA
- Hybrid OA
- Green OA
- Diamond OA
- Browns OA

GOLD OA

Gold Open Access (OA) is a type of OA publishing in which the final published version of an article is made freely available to readers immediately upon publication. This means that readers can access the article without having to pay for a subscription or without encountering a paywall. To cover the costs of publishing, authors or their institutions are typically required to pay an Article Processing Charge (APC) to the publisher. The APCs for Gold OA can vary widely, and some publishers may offer discounts or waivers for authors from low-income countries or institutions. The APCs can range from a few hundred to several thousand dollars per article, depending on the publisher, the type of journal, and the subject area. Gold OA publishing is becoming increasingly popular, and many funders and institutions now require that research publications resulting from their funding be made available as Gold OA. This is because Gold OA publishing offers several benefits, such as increased visibility and impact of research, faster dissemination, and increased opportunities for collaboration and innovation.

- Both subscription based (commercial) and OA journals for the same publisher
- Refers to work published in an open access journal and accessed via the journal or publishers website
- Allows the final published version of your article to be freely and permanently accessible to everyone immediately after publication
- Article processing charge paid by author / institution of project funding body
- Copyright with author

Hybrid OA

Hybrid OA journals offer a middle ground between traditional subscription-based journals and fully open access journals. They allow authors to choose whether to make their articles open access, and they provide a way for authors to pay for open access without having to fund a full open access journal.

Advantages to hybrid OA journals.

1. They allow authors to make their work more widely accessible, which can help to increase citations and research impact.
2. They provide a way for authors to pay for open access without having to fund a full open access journal. This can be a more affordable option for authors, especially those who are not funded by a research grant.
3. Hybrid OA journals can help to bridge the gap between traditional subscription-based journals and fully open access journals. This can help to promote the transition to open access publishing.

Disadvantages to hybrid OA journals.

1. They can be more expensive for authors than traditional subscription-based journals.
2. They can create a two-tier system of publishing, with open access articles being more visible and accessible than subscription-based articles.
3. They can be seen as a way for publishers to profit from open access publishing.

Hybrid OA journals are typically run by the same publishers that run traditional subscription-based journals.

- The APC for hybrid OA journals varies from journal to journal.
- There are a number of funders that will cover the APC for hybrid OA articles.
- Hybrid OA journals are a growing trend in academic publishing.
- If you are considering publishing in a hybrid OA journal, I recommend that you do your research and compare different journals before making a decision.
- In subscription based (commercial) journal few articles are made OA as per authors demand
- Article processing charge (APC) paid by author/ institution/ project
- Copyright with publisher

Green OA

Green open access (OA) is a type of open access publishing that allows authors to make their research papers freely available online, typically by self-archiving their final peer-reviewed manuscript in an open access repository. Green OA is a cost-effective way for authors to make their research papers more widely accessible. It is also a way for authors to comply with funder mandates that require them to make their research papers open access. Refers to the self- archiving of published or pre-publication works in a repository or database after the embargo period set by the publisher

- The practice of depositing a version of your manuscript in to a repository to make it openly accessible
- Along with publication in commercial journal , authors self archive a copy OA mode
- Also known as self archiving
- Payment of a publication charge is not required
- Copyright with the publisher

Green OA can be done in two ways:

- Preprint self-archiving: This is when authors deposit a copy of their manuscript before it has been peer-reviewed.
- Post print self-archiving: This is when authors deposit a copy of their manuscript after it has been peer-

reviewed and published.

Diamond OA

Diamond open access (OA) is a type of open access publishing that allows authors to make their research papers freely available online without any fees to authors or readers. Diamond OA journals are typically run by nonprofit organizations or academic societies.

Diamond OA is a cost-effective and equitable way for authors to make their research papers more widely accessible. It is also a way for authors to comply with funder mandates that require them to make their research papers open access.

- Reference to journals that are completely free to publish and to read
- Diamond OA is also known as free OA
- No charge on APC
- They are managed by funded by institutions, scholar societies, universities, research institutions, etc.
- Follows all standard publication standards
- Diamond OA is a growing trend in academic publishing
- Copyright with publishers

Advantages of diamond OA:

- It is free for both authors and readers.
- It is a cost-effective way for authors to publish their research.
- It is a way for authors to comply with funder mandates.
- It is a way to make research more widely accessible.

Disadvantages of diamond OA:

- Diamond OA journals may not have the same level of prestige as traditional subscription- based journals.
- Diamond OA journals may not have the same level of peer review as traditional subscription-based journals.
- Diamond OA journals may not be as widely indexed as traditional subscription-based journals

Bronze OA

Bronze open access (OA) is a type of open access publishing that allows authors to make their research papers freely available online, but without a clearly identifiable license. This means that the articles are typically not available for reuse. Bronze OA is a relatively new type of open access publishing, and it is not yet clear what its impact will be. However, it is possible that bronze OA could lead to a decrease in the quality of research, as authors may be less motivated to produce high-quality work if they know that their articles will be freely available without any restrictions.

- Bronze OA is also known as unfree OA.
- Bronze OA articles are typically published in journals that are owned by commercial publishers.
- There are a number of funders that will not cover the costs of bronze OA publishing.
- Bronze OA is a growing trend in academic publishing.

Advantages of bronze OA:

- It is free for readers.
- It is a way for authors to comply with funder mandates.
- It is a way to make research more widely accessible.

Disadvantages of bronze OA:

- Articles are not available for reuse.
- Bronze OA journals may not have the same level of prestige as traditional subscription- based journals.
- Bronze OA journals may not have the same level of peer review as traditional subscription-based journals.
- Bronze OA journals may not be as widely indexed as traditional subscription-based journals.

Open Access Benefits

- Accelerated discovery
- Inclusive
- Faster research
- Global visibility
- Knowledge economy
- Immediate use
- Retention of copyright

Open publications

Open access covers all types of peer-reviewed publications, both journal articles and books (monographs). Initially, the open access movement focused mainly on journal articles and the business model of journals themselves, giving rise to open access journals. The DOAJ (Directory of Open Access Journals) now lists over 13,500 fully open access journals. Some publishers then offered the option of open access publication of individual articles from journals with a subscription model, for a fee (e.g. Springer Open Choice). We call journals that offer this option 'hybrid' journals. Academic institutions do not support the hybrid approach because these journals are paid for twice: via subscriptions and APCs.

Open access for books did not happen until later. This is because there is often still a need for a printed copy of a book alongside the online version and the costs of the printed copy need to be recouped. It is not easy to find a cost-covering business model for open access books. A pioneering project relating to open access for books was the European OAPEN (Open Access Publishing in European Networks) project. The result was the OAPEN Foundation, an international initiative to further expand open access for books. It currently offers two services:

The Directory of Open Access Books (DOAB) is a database that refers readers to open access books on publishers' websites. These are peer-reviewed books that are published under an open access licence (the CC BY licence) – in other words, books that are 'free to read' and 'free to share'. DOAB contains 12,000 books or chapters from 280 publishers

The OAPEN library is a repository of 3,500 full-text books. Publishers can choose to place their open access books in the OAPEN library. The OAPEN library also contains books that are only 'free to read'More open access publications can be found:

Large international open-access platforms are the European based OpenAire (over 22 million publications) and the global OAIster (50 million publications).70,000 Dutch doctoral theses are available as open access material on the portal of NARCIS (635.000 open access publications) and the international theses platform DART-Europe E-theses Portal (800,000 theses, including those in NARCIS, from 613 universities in 28 countries).

Open Access Initiatives in India

OA was initiated in the developed countries and later many developing countries including India have joined the effort. In the wake of the open access movement, some policy frameworks have already been established by member communities to foster inclusive, plural and development oriented knowledge societies, A number of open access declarations /statement were made during the past decade, where the world leading research institutions agreed on the open access mandates. The United Nations – backed world summit on the Information Society.

(WSIS) strongly supported open access to information and Knowledge. Thus confirms that number countries of the United Nations will take appropriate strategic decisions to bring scholarly literature, produced from public fund research initiatives or state-supported researchers, under the umbrella of open Access.

Some of the major open statements or declarations made during the past decade are given below:

- ARIIC Open Access Statement (Australian Research Information Infrastructure Committee) [www.caul.edu.au/scholcomm/OpenAccessARIICstatement.doc]
- Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities [http:// oa.mpg.de/openaccess-berlin/berlindeclaration.html]
- Bethesda Statement on Open Access [www.earlham.edu/~peters/fos/bethesda.htm]
- Budapest Open Access Initiative Statement [www.soros.org/openaccess/]
- ERCIM Statement on Open Access (European Research Consortium for Informatics and Mathematics) [www.ercim.org/publication/Ercim_News/enw64/ercim-oa.html]
- IFLA Statement on Open Access to Scholarly Literature and Research Documentation
- NKC Statements on Open Access (National Knowledge Commission, India) [http:// knowledgecommission.gov.in/downloads/documents/wg_lib.pdf & http:// knowledgecommission.gov.in/downloads/documents/wg_open_course.pdf]
- OECD Declaration on Access to Research Data from Public Funding
- Washington DC Principles for Free Access to Science: A Statement from Not-for-Profit Publishers [www.dcprinciples.org/statement.htm]
- Wellcome Trust Position Statement in support of open and unrestricted access to published research [www.wellcome.ac.uk/doc_WTD002766.html]
- WSIS Declaration of Principles and Plan of Action (World Summit on the Information Society) [www.itu.int/wsis/docs/geneva/official/dop.html & http://www.itu.int/wsis/docs/geneva/ official/poa.html]

India has spearheaded the 0pen access movement in developing countries since the last decade upscaling print based scholarly journals into open access electronic journals and establishing a number of open access repositories, both at national and institutional levels embracing free end open source software (FOSS). Various Indians R&D organizations, leading scientific research Institutions (such as Indian Institute of Science, IITs, ISI, Institutes under the CSIR and Indian council of Medical Research etc.) are now taking part in the open access movement by

establishing institutional and digital repositories to provide worldwide access to their research literature.

The NKC's Working Group on Open Access and Open Educational Resources and Working Group on Libraries have strongly recommended open access to public-funded research literature and supported establishment of open courseware repositories for countrywide dissemination of quality courseware to many cross-sections of people. If implemented, these recommendations will have far-reaching implications in the knowledge creation and dissemination cycle. The scholarly literature and lifelong learning materials produced by state- sponsored institutions would then be made accessible through open access channels such as national and institutional repositories. This way the NKC's recommendation on peer-reviewed research papers resulting from public-funded research would be validated by subject experts when making these resources available through open access channels.

Today, establishment of open courseware and cross-archive services are new fronts of open access initiatives. Indian information professionals are experimenting with open source software in the establishment of Institutional Repository (IR) systems in local libraries, using Greenstone,DSpace or EPrints software. Once an IR is successfully implemented in the local library set up, it is then upscaled to institution-wide application through campus networks or intranet. Similarly, it may open up to wider audiences once the authorities of the institution are convinced.

Open Access Journals

Open Access Journals maintain the traditional values of journals- notably perr review, but also editing and formatting and marketing. According to Velterop there are three criteria for a journal to be open access i.e. free accessibility to all articles, the depositing of all articles in an archive/ repository, and a license granted for the right to copy or disseminate.

OA movement has made the Indian Journals reach the target audience of the world's communities and now more than hundred Indian Journals provides provide free access to full text contents. India is placed in the 6th position in the list of open access journals which is well ahead of countries such as the Netherlands, China, Germany, Australia etc. No matter the number or quality of OA journals and repositories in India, it has shown a great commitment amongst the developing world.

Open access is a new trend in scholarly communication which aims at providing free access to scholarly literature over the internet and has gained enormous momentum in the recent years. It is largely achievable in a country where policy frameworks, institutional frameworks, information infrastructure, trained manpower and financial resources are adequately available. The future of the OA movement is to fill up repositories, providing open access to full text and diversification of content where it does not exist. INFLIBNET mandates to improve computer and networking facilities in Indian libraries. Open access to scientific journals is beneficial to scholars and has wide support as a concept, but it needs viable revenue models and great commitment among its promoters. The emphasis should be primarily on setting up open achieves rather than on persuading journal publishers to make their journal open access. Further DRTC plans to include open access journals in library Science. Several national and international conferences, seminar and symposia were also organized in India, where library professionals discussed methods and techniques of digitization, digital library development, institutional repository development and digital preservation. Today various initiatives are likely to arise in future which is supposed to establish a strong OA scenario in India.

2.SHERPA/RoMEO online resource to check publisher copyright &self-archiving policies Brief History

The original SHERPA partnership was formed for the SHERPA project (2002-2006) and drew from research-led universities with an active interest in establishing an example of a then-new concept - an Open Access institutional repository. (Website: http:// www.sherpa.ac.uk/).

Sherpa Romeo is an online resource that aggregates and analyses publisher open access policies from around the world and provides summaries of publisher copyright and open access archiving policies on a journal-by-journal basis.

It is developing Open Access institutional repositories in universities to facilitate the rapid and efficient worldwide dissemination of research.

Reason for using RoMEO:

If an academic author wants to put their research articles online, they are faced with an increasingly complex situation. Evidence shows that citations to articles made openly accessible in this way are taken up and cited more often than research that is simply published in journals. Also some funding agencies require Open Access archiving for their research, to increase the use of the information generated. However, some publishers prohibit authors from using their own articles in this way. Others allow it, but only under certain conditions, while others are quite happy for authors to show their work in this way. Authors can be left confused.

RoMEO helps to clarify the situation. RoMEO contains publishers' general policies on self-archiving of journal articles and certain conference series.Each entry provides a summary of the publisher's policy, including what version of an article can be deposited, where it can be deposited, and any conditions that are attached to that deposit.The policy information provided through this service primarily aims to serve the academic research community. Since the service launched over 15 years ago, publisher policies and the open access sector have changed a lot.

Open access policy can be complex and varies according to geographical location, the institution, and the various routes to open access — all of which affects how and where you can publish your research. (About Sherpa Romeo, 2020)

Authors at times find it difficult to do self-archiving due to some apprehensions about publishers' policies. This is why SHERPA RoMEO is existing - to offer list of publisher permissions policies with respect to self-archiving.

Publisher policy icons

Sherpa Romeo now contains an iconography scheme that represents aspects of publisher policy. Publisher policies are stored in Sherpa Romeo as a set of pathways. Each pathway represents a different way in which a document can become open access. Pathways have different policies, and the icons represent the properties within the pathways. The icons were selected by Jisc's team of open access specialists and were user tested with a sample of industry professionals.

Registering an open access policy

To register an open access policy for a publisher or a journal that is not already listed in Romeo, you will need to complete the relevant form in as much detail as possible. Remember to check our inclusion criteria to ensure the publisher or journal meets our requirements. The forms can be found on our Contact Us page.

The team will review the request by visiting the publisher and policy sites and will then assess it against the Romeo inclusion criteria. If the publisher and policy meet the requirements, they will be added to the directory, along with the related journals, and we'll notify you once that's done.

Updating an open access policy on Romeo

To update an existing record, need to complete an ‘Update Record’ form which can be found via the ‘Suggest an update for this record' button at the bottom of the record.If a person is a publisher who wishes to update multiple titles in his catalogue, you can submit a spreadsheet containing the necessary information to help@jisc.ac.uk.

The team confirms all update suggestions with the publisher; therefore, it may take some time for any changes to appear.

Inclusion criteria

a.Journals

- Journals must have a valid ISSN Note that also accept serial publications and conference proceedings with valid ISSNs
- Each website must clearly state its editorial board
- All licences, open access policies and copyright statements must be readily available online

b.Publishers

- The governing body must be clearly stated on the website
- Contact details must be readily available
- Publication ethics policies must be clearly stated on the website

If use COPE Guidelines on publication ethics as a guide to best practice when evaluating publishers for inclusion.SHARPA Romeo recommend that publishers follow these guidelines.

- Linking to a specific record

All records listed in Romeo have their own persistent URI which can be used to link to a specific record. The URI can be found in each record's Record Information section.

- Re-using Sherpa Romeo data

Our data is available under a CC-BY-NC-ND licence. For more information, please visit the Jisc re-use policy page.

- API access

Data stored in Romeo is available over the Sherpa APIs. The Sherpa APIs (application programming interfaces) provide access to the functionality and datasets that Sherpa Services operate across.

- User accounts

You will need a user account, which comes with an API key. View your API key by clicking on the 'Admin' tab and logging in.

- Metadata schema

Please see metadata schema documentation for more information about the structure of our objects when requested as JSON.

- Object retrieval API

The object retrieval API provides a machine interface for downloading object metadata.

It is developing Open Access institutional repositories in universities to facilitate the rapid and efficient worldwide dissemination of research SHERPA services and the SHERPA Partnership are both based at the Centre for Research

Communications at the University of Nottingham.

SHERPA services include:

- RoMEO - Publisher's copyright & archiving policies.
- JULIET - Research funder's archiving mandates and guidelines.
- OpenDOAR worldwide Directory of Open Access Repositories.
- SHERPA Search - Simple full-text search of UK repositories.
- Searching and browsing

Sherpa Romeo now contains more options for searching and browsing than the previous version, to help you find the information you need more quickly and reflecting the requirements of different users of the service.

Options for searching and browsing

You can search for the information you need from the Sherpa Romeo landing page, and the Sherpa Romeo search page.

The new options for searching and browsing now include:

- Search by:
- Journal title
- ISSN
- Publisher
- Browse publications by publisher

Thus, RoMEO helps to clarify the situation. RoMEO contains publishers' general policies on self-archiving of journal articles and certain conference series. Each entry provides a summary of the publisher's policy, including what version of an article can be deposited, where it can be deposited, and any conditions that are attached to that deposit.

SHERPA RoMEO Services Overview

SHERPA services and the SHERPA Partnership are both based at the Centre for Research Communications at the University of Nottingham. SHERPA services include:

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- OpenDOAR -worldwide Directory of Open Access Repositories.
- SHERPA Search - Simple full-text search of UK repositories.

Sherpa Romeo is an online resource that aggregates and presents publisher and journal open access policies from around the world.

- Every registered publisher or journal held in Romeo is carefully reviewed and analysed by specialist team who provide summaries of self-archiving permissions and conditions of rights given to authors on a journal-by-journal basis where possible.
- The policy information provided through this service primarily aims to serve the academic research community.
- Since the service launched over 15 years ago, publisher policies and the open access sector have changed a lot.

- Open access policy can be complex and varies according to geographical location, the institution, and the various routes to open access — all of which affects how and where you can publish your research.

RoMEO – Publishers' Copyright and Archiving Policies

RoMEO is a searchable database of publisher's policies regarding the self-archiving of journal articles on the web and in Open Access repositories.

Thus, RoMEO helps to clarify the situation. RoMEO contains publishers' general policies on self-archiving of journal articles and certain conference series. Each entry provides a summary of the publisher's policy, including what version of an article can be deposited, where it can be deposited, and any conditions that are attached to that deposit.

- RoMEO is a necessary tool for a researcher for making a self-archiving decision.
- The data base used a colour coding system initially to classify publishers according to their self-archiving policy
- This shows authors whether the journal allows preprint/ post print archiving in their copy right transfer agreements.
- It currently holds 22000 peer-reviewed scholarly journals, covering many print, electronic and open access journals available worldwide.

Application of RoMEO website for different purposes, such as:

- Use RoMEO to assist when depositing articles to institutional repository.
- Use RoMEO to find out if publishers' copyright rules allow to deposit in institutional repository.
- RoMEO summarizes publishers' conditions and categorizes publishers by colors, indicating level of author rights.
- RoMEO shows which publishers' comply with funding agencies' conditions on open access.

The Sherpa Romeo evolved to meet the changing needs of the sector and continues to provide a service that helps users to overcome the challenge of understanding publisher and journal policies. It is used by researchers, repository staff and research support teams across the world. SHERPA's most notable service is RoMEO, is a database aggregating publisher archiving policies which allows researchers quick access to copyright and self-archiving policies of more than 23,000 global publishers.

MAHATMA GANDHI UNIVERSITY, KOTTAYAM 2023

SCHOOL OF PEDAGOGICAL SCIENCES

Ph.D. COURSE WORK

COURSE CODE: SPSDCIC1304

RESEARCH AND PUBLICATION ETHICS

ASSIGNMENT

MODULE 4; UNIT 3

Topic: Software tool to identify predatory publications *developed by SPPU*

Submitted to,

PROF. Jaya Jaise

School of Pedagogical Sciences

Mahatma Gandhi University, Kottayam

Submitted by,

HARISANKAR V P

Research Scholar

School of Pedagogical Sciences

Mahatma Gandhi University, Kottayam

SPSDC1CI304 : RESEARCH AND PUBLICATION ETHICS

ASSIGNMENT

Topic : RPE04: Open Access Publishing

Unit 3: Software tool to identify predatory publications developed by SPPU (Savitribai Phule Pune University)

INTRODUCTION

Research is a systematic study or investigation conducted to discover new information, solve a problem, or test a hypothesis. It plays a vital role in many aspects of our lives, from technological progress to social and economic development. Research helps in the better understanding of the world around us because it helps us make informed decisions, develop new technologies, and improve our lives in many ways. Through research, we are able to anticipate and accept new challenges and opportunities and adapt to changing circumstances. The world is constantly Evolving and research can help us cope with these changes.

In practice, open access publishing refers to a publishing model that allows unfettered, free access to scholarly research papers and other content online. It provides readers with the ability to access, view, download, copy, distribute, print, and use the published content without any financial or administrative constraints. Open access seeks to eliminate these barriers by making research freely available to anyone with an internet connection, encouraging the free exchange of knowledge.

PREDATORY PUBLISHING

Predatory publishing generally refers to the systematic for-profit publication of purportedly scholarly content (in journals and articles, monographs, books, or conference proceedings) in a deceptive or fraudulent way and without any regard for quality assurance. These journals

cleverly camouflage themselves by closely approximating the forms of existing credible journals via having similar titles as very well-established or -credible journals. Predatory publishers may cheat authors (and their funders and institutions) through charging publishing-related fees without providing the expected or industry standard services. Such publishers may steal intellectual property through deception, engage in fraudulent or fake peer review, or list respected researchers on their editorial boards without their knowledge or consents. Predatory publishers often prey on innocent researchers who are unaware of the threats of predatory publishing. Predatory publishing has become a significant problem in recent years, with an estimated 75,000 predatory journals operating worldwide. These publications can have serious consequences for researchers, universities, and the wider academic community. They can damage reputations, undermine the credibility of research, and create confusion among readers. In order to avoid falling prey to predatory publications, researchers should be cautious while selecting journals for submission or review. Researchers are to check the journal's reputation, peer review process, and publishing standards before agreeing to publish with them. Predatory publishers often prey on innocent researchers who are unaware of the threats of predatory publishing.

At present, there are numerous software tools which are available to assist the researchers and academicians to detect the predatory publications and prevent future publications in such journals. These softwares can detect whether a paper has been plagiarized from other sources, which can be a sign of poor research practices. Some examples of plagiarism detection software include Turnitin, Grammarly, and Duplichecker.

CHARACTERISTICS OF PREDATORY PUBLICATIONS

Some of the most common characteristics of predatory journals could include:

- Quick acceptance of articles with little or no peer review and quality control.
- Extensive campaigning and publicity for academics to submit the articles.
- Addressing the list of academics as members of editorial boards without getting their permission, and also, not allowing academics to resign from editorial boards.
- Appointment of false academics to their editorial board.

- Copying the name of the journal and website style of more established and popular journals.
- Making misleading claims about the publishing operation, such as a false location.
- Improper use of ISSN.
- Citing or non- existent impact factors.
- Hidden or unclear author fees.
- The lack of quality peer review of articles by experts in the field.
- Guarantee of acceptance and/or the promise of very fast publication times (eg, within one week or 48 hours).
- Incomplete or misleading reporting of policies (including copyright and user licenses), processes, performance, and affiliations in the journal's website or correspondence,
- Poor language usage (including poor grammar) and low production quality, both in the presentation
- The lack of ethics policies and need for ethics declarations, particularly related to animal and human studies,
- Conflicts of interest, and study funding,
- The lack of any corrections/retractions of articles

SAFEGUARDING AGAINST PREDATORY PUBLICATIONS

While publishing, the authors could adopt a number of practices in order to safeguard against the threats by predatory publications. This include:

- Adopting institutional publishing guidelines, maybe as part of the rules of good scientific practice, and appointing responsible contact persons.
- Providing advice and information by trained staff (e.g. open access officers) at information and training events, including teaching people how to identify dubious forms of publication
- Referring to existing whitelists or creating whitelists of serious specialist journals
- Excluding publications in predatory journals from evaluation processes, appointment processes and publishing funds
- Labelling frequent emails from dubious publishers and journals as spam.

SOFTWARE TOOL TO IDENTIFY PREDATORY PUBLICATIONS DEVELOPED BY SPPU (Savitribai Phule Pune University)

The step towards academic integrity that was taken by Savitribai Phule Pune University (SPPU) to make sure ethics are followed by students pursuing a PhD in various faculties. The Savitribai Phule Pune University (SPPU) on 27 March 2015, appointed a committee which was reconstituted on 16 April 2015 to look after the issues of the predatory journals. The committee has developed a protocol with objective criteria for identifying journals that do not follow good publication practices.

In July 2018 the SPPU had announced its Centre for Publication Ethics, after a group of six academicians under the leadership of the former UGC vice chairman Bhushan Patwardhan in collaboration with the Ministry of Human Resource Development. The Centre for Publication Ethics that had came up with an eponymous course, which has been made compulsory by UGC for all university students pursuing a doctorate. A course termed as research and publication ethics (RPE), providing two credits, has been made compulsory as a pre-registration module. The committee studied hundreds of UGC approved journals and found 88 per cent of them to be dubious. The center was then formed to keep watch on research journals mushrooming across the board, and to check if any professors get their research papers published in these sub-standard publications, for ultimately elevating their rank or getting a promotion.

MAJOR OBJECTIVES

- To strengthen the Research Portal of SPPU
- Development and maintenance of list of credible journals
- Create awareness about publication ethics and research integrity
- Raise resources from Government and private sectors
- Provide support to UGC and other bodies to promote Publication ethics
- Develop research projects, e-learning modules and courses on publication ethics
- Prepare guidelines for ethical publishing and good publication practices
- To critically review current status of predatory journals and publishers in India
- Develop objective criteria for identifying predatory journals and publisher
- Critically analyze UGC-approved list of journals based on the criteria

STUDY ON JOURNALS

The committee studied a total of 1336 journals, that were randomly selected from 5699 in the university source component of the UGC-approved list. The committee analyzed 1009 journals after excluding 327 indexed in Scopus/Web of Science. About 34.5% of the 1009 journals were disqualified under the basic criteria because of incorrect or non-availability of essential information such as address, website details and names of editors; another 52.3% of them provided false information such as in- correct ISSN, false claims about impact factor, claimed indexing in dubious indexing databases or had poor credentials of editors. The results suggested that over 88% of the non-indexed journals in the university source component of the UGC-approved list, included on the basis of suggestions from different universities, could be of low quality. In view of these results, the current UGC-approved list of journals were found to be needed serious re-consideration.

GUIDELINES AND RECOMMENDATIONS PUT FORWARD BY THE RESEARCH COMMITTEE

The committee of SPPU introduced a number of guidelines to avoid the practice of predatory publishing. These include:

- The committee found that there was an immediate need to control publications in false journals, and periodicals, etc.
- The committee observed the present policy of the University to strengthen the research culture by providing support from its own resources is good, however more stringent methods are needed to evaluate the impact and outcome of the research.
- Papers published in private in- house journals, proceedings of workshops, seminars, refresher/orientation courses should not be considered as research publications.
- In accordance with the UGC Regulations 2010, University should develop a comprehensive department- wise list of quality Journals and reputed publishers in each subject. This should be used as a reference when dealing with research guides recognition, Ph.D. / M.Phil submissions, selection, confirmation, increments, career advancement, as well as for considering scores under categories III A and B of the API.

- To qualify individual publications in peer- reviewed / reputed/refereed journals mere ISSN number is not sufficient. The publisher/journal should be indexed in globally accepted databases, should preferably be members of reputed bodies like COPE, and must follow publication ethics in a transparent manner where all true, correct, and vital information is available on the journal website.
- A good journal that complies with ethics in publishing, which is indexed in reputed agencies like Scopus, Web of Science, Science Direct, Pubmed, SSRN, etc should be considered as reputed journals. Various types of tools and metrics developed by reputed agencies like Thomson Reuters (Science Citation Index, Impact Factor), Scopus, Scimago (h index, SJR) are reliable indicators.
- The record of citations to a particular publication in other reputed journals is also a very useful parameter to judge the quality of a research paper. In open access, Google Scholar offers citation records and h5- index, which can also be considered in the primary evaluation. However, it should be kept in mind that many predatory journals have managed to enter Google Scholar. Therefore, it is always better not to rely on any single metrics agency but it is best to ensure that the Journals are indexed in at least three of the reputed indexing/metrics agencies and databases.
- Research publications in Marathi, Hindi, and other languages constitute an important aspect especially for the Faculties of Arts, Fine Arts, Humanities, and Social Sciences. Due recognition to Marathi and other language journals should be given. The modalities to identify reputed research journals in Marathi and other languages should be decided by a committee of senior social science professors together with external national experts duly approved by the Vice- Chancellor.
- The faculty-wise lists should be developed by independent committees to be appointed by the Vice- Chancellor consisting of senior professors from the university and external experts including national research professors, Directors of National Institutes, Fellows of National Academies, and such other distinguished academicians. Journals published by National Academies, National Institutions, and National Societies should be published in annual reports and displayed prominently on the University website.
- Classification of Journals like national or international and ranking merely based on impact factors is not relevant today especially because a large number of predatory

journals with names starting with 'international' 'global', 'world' etc are in plenty as also several counterfeit impact factor agencies are in existence. Because many counterfeits and spurious agencies have cropped up giving fake h index and impact factors, utmost care needs to be taken before including any journal in the official list of the University.

- Many fake indexing agencies, societies; academies have created a false identity to sound similar to reputed agencies. Beall's list provides primary guidance and information on predatory publishers, predatory standalone journals, misleading metrics companies, and hijacked journals
- Very careful due diligence should be done while developing a comprehensive faculty-wise list of approved journals.
- Research publication ethics and guidelines should be widely circulated and undertaking should be obtained from Ph.D. guides and the research students, stating that he/she has understood the guidelines and violating them can lead to appropriate actions by the University.
- As a good publication practice, manuscripts proposed to be published as research articles, thesis, a dissertation may preferably go through screening by individual Departmental Research Committee consisting of internal and external experts duly approved by the Vice- Chancellor. All such research manuscripts should be scanned through reputed anti-plagiarism software like Turnitin, or to which your University has subscribed.
- University should create more awareness about predatory publishers and the importance of publication ethics so that faculty and students are encouraged to do high- quality rigorous research and not surrender to desperation to publish poor quality work by taking shortcuts and easy ways.
- The quality of any publication can be best judged after considering the amount of work, rigor, methodology, novelty, etc, which can be evaluated by external experts in the field in an anonymous manner. As a long term policy, the University should strengthen its research culture and bring a stringent external peer review system to critically evaluate its research output.
- These guidelines and comprehensive department wise lists of Journals in each subject should be published in the University Annual Report and prominently displayed on the University website for creating awareness and dissemination of information.

CONCLUSION

Identifying predatory journals is a crucial step for researchers and academics to ensure the credibility and integrity of their work. Predatory journals pose a significant threat to the scientific community by publishing low-quality or even fraudulent research, thereby compromising the dissemination of reliable knowledge. To effectively identify predatory journals, several tools and strategies can be employed.

The initiatives put forward by the SPPU has gained nation-wide attention as effective path breaking steps towards tackling the threats by Predatory journals in research publication.

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Consent sheet is missing

29/05/'23

MAHATMA GANDHI UNIVERSITY SCHOOL OF PEDAGOGICAL SCIENCES

PH.D. COURSE WORK 2022 ADMISSION

(REGULAR/FULL TIME)

SPSDCIC1304: RESEARCH AND PUBLICATION ETHICS (RPE)

Time : 1 Hour **Marks : 25**

PART A

Multiple Choice questions

1. What is the purpose of research?

a) To make money

b) To solve problems and discover new information

c) To deceive readers

d) To hinder technological progress

2. What is open access publishing?

a) Publishing restricted content

b) Publishing without peer review

c) Publishing research freely accessible to anyone

d) Publishing only in reputable journals

3. What is predatory publishing?

a) Publishing research in reputable journals

b) Publishing research without peer review

c) Publishing research in fraudulent and deceptive journals

d) Publishing research in open access journals

4. What are some consequences of publishing in predatory journals?

a) Damage to reputations and credibility of research

b) Increased visibility and impact of research

c) Enhanced research collaborations

d) Promotion of open access publishing

5. Which of the following is a characteristic of predatory publications?

a) Rigorous peer review process

b) Transparent publication ethics

c) Quick acceptance with little or no peer review

d) High-quality language usage

6. How can researchers safeguard against predatory publications?

a) Avoid publishing altogether

b) Check journal reputation and publishing standards

c) Submit to as many journals as possible

d) Pay high publication fees

7. Which university developed a software tool to identify predatory publications?

a) Harvard University

b) Stanford University

c) Savitribai Phule Pune University (SPPU)

d) Oxford University

8. What is the objective of the Centre for Publication Ethics at SPPU?

a) Promote predatory publishing practices

b) Monitor research papers published in sub-standard publications

c) Increase the number of predatory journals

d) Encourage universities to publish more research papers

9. How should journals be evaluated for inclusion in the university's approved list?

a) Based on the number of citations received

b) By checking if they are indexed in reputed databases

c) By considering the journal's impact factor alone

d) Based on the length of time they have been in operation

10. What is the importance of research publications in regional languages?

a) They are irrelevant to academic research

b) They provide a unique perspective in certain disciplines

c) They hinder research collaboration

d) They are less rigorous than publications in English

PART B

Short Answer Questions

11. What are some common characteristics of predatory journals?
12. How can researchers safeguard against predatory publications?
13. What guidelines and recommendations have been put forward by the SPPU research committee?

Answer key

PART A

1. b) To solve problems and discover new information
2. c) Publishing research freely accessible to anyone
3. c) Publishing research in fraudulent and deceptive journals
4. a) Damage to reputations and credibility of research
5. c) Quick acceptance with little or no peer review
6. b) Check journal reputation and publishing standards
7. c) Savitribai Phule Pune University (SPPU)
8. b) Monitor research papers published in sub-standard publications
9. b) By checking if they are indexed in reputed databases
10. b) They provide a unique perspective in certain disciplines

PART B

11. **Answer**: Some common characteristics of predatory journals include quick acceptance with minimal or no peer review, false claims about editorial board members, copying the names and website styles of established journals, improper use of ISSN, misleading impact factor citations, hidden author fees, lack of quality peer review, and promises of fast publication times.
12. **Answer**: Researchers can safeguard against predatory publications by adopting institutional publishing guidelines, checking whitelists of reputable journals, excluding predatory journals from evaluation processes and funding decisions, labeling emails from dubious publishers as spam, and using software tools to detect plagiarism and unethical practices.
13. **Answer**: The SPPU research committee has recommended several guidelines, including developing comprehensive lists of quality journals, considering reputable publishers indexed in globally accepted databases, evaluating research papers based on citations and metrics.

creating awareness about predatory publishers and publication ethics, conducting peer reviews by external experts, and publishing guidelines in the university's annual report a website.

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4. Journal finder/journal suggestion tools viz. JANE, Elsevier Journal Finder, Springer Journal Suggester, etc.

If one completed a research manuscript, the next step is to choose a suitable target journal to submit the prepared paper. The challenge is the uncertainty of journal that would be the best fit for the research work. From the enormous number of scholarly journals, it is hard to shortlist possible reputed journals for our research paper. Finding the right journal to submit a paper is one of the most important steps during the process of paper publishing. For most authors, this job is difficult because many journals have a very wide diversity of topics, and many articles involve several academic disciplines or professional specializations. According to the records from the Scopus database, from 1992 to 2002, 12 million peer- reviewed papers have been published. This number has doubled between 2003 and 2013. With the rapid growth of new journals and papers each year, the task to select a correct journal to submit a paper becomes more and more difficult. There are many academic research tools to help you select the best-suited journal. Here are some valuable tools that provide suggestions or recommendations for choosing the right journals.

Journal finder/ journal suggestion tools

Journal Finder is a tool that allows to locate whether if any, databases contain the full text of articles and for what date ranges by searching using the title of the publication in which they appear. The name "Journal Finder" is a bit misleading, because not only it locates the full text of journals, but also the full text of magazines and newspapers as well.

There are a number of journal finder/ suggestion tools some of them are listed below:

1. The Journal/Author Name Estimator (JANE)
2. Elsevier Journal Finder
3. Springer Journal Suggester

1. The Journal/Author Name Estimator (JANE)

The Journal/Author Name Estimator (JANE) is a free online bibliographic journal selection tool. Journal selection tools, also known as journal matching or journal comparison tools, are popular resources that help authors determine the most appropriate in scope journal to publish their manuscripts. JANE is one of the earliest journal selection tools, debuting in 2007.

The resource is web-based and allows users to input keywords, abstract text, or author names and view related articles based on user-supplied terms. At the time of this writing, no formal mobile app or browser extension has been developed to utilize the resource. There is an application programming interface (API) freely available in beta version that is available to users who want to integrate JANE into their own applications.

JANE's simple search interface allows users to easily input data into an open text box. The home page search field defaults to a larger expanded "Title and/or Abstract" search box. Users can also select the keyword link to be taken to a smaller text box where keyword terms can be searched. Keyword searching also works when text is entered in the "Title and/or Abstract" search box (Figure 1).

Both search boxes include a "Show extra options" button, where users can limit results by language (English, French, German, Italian, Japanese, Russian, and Spanish); publication type (case reports, various phases of clinical trials, meta-analyses, reviews, etc.); open access journal options; and journals only indexed for PubMed Central.

The JANE website achieves its goal of journal matching, journal comparison, and relevant author retrieval. While the site offers a satisfactory amount of transparency on how the resource works, users who have questions or seek clarification can reach out directly to resource creator.

2. Elsevier Journal Finder

Elsevier® Journal Finder helps to find journals that could be best suited for publishing scientific article. Elsevier journal finder, a comprehensive journal recommender system that covers all major scientific domains and more than 2,900 peer-reviewed Elsevier journals. It uses a machine learning algorithm to create a list of recommended journals to publish research in. The minimum amount of information that the algorithm needs is abstract, but including title also helps the algorithm to search for suitable journals.

ScienceDirect is Elsevier's platform for online electronic access to its journals and over 40,000 e-books, reference works, book series, and handbooks. The articles are grouped in four main sections: Physical Sciences and Engineering, Life Sciences, Health Sciences, and Social Sciences and Humanities. For most articles on the website, abstracts are freely available; access to the full text of the article (in PDF, and also HTML for newer publications) often requires a subscription or pay-per-view

purchase.

3.Springer Journal Suggester

The Springer Journal Suggester is an academic research tool that enable users to select the best-suited journal for their research. The automated process can enable journal selection from a database of over 2,600 Springer publications. The web-based semantics technology refines a list of relevant journals, based on inputs of manuscript title, abstract, and publishing model. A refined list of potential journals can thereby assist authors to delineate a core publication for their final manuscript submission. Springer Journal Suggester has thousands of academic journals available today, with many new titles being launched each year. It can therefore be difficult to know which one would be most suitable for publishing a work, especially if we're working on interdisciplinary research. For transparency, the entire database of Springer Open Access journals scanned during the automated refining process is also available online.

The web-based Journal Suggester is easily accessible, requiring only an abstract/description of the unpublished manuscript to find matching journals. When manually selecting the right journal for manuscript submission, stepwise instructions below,via Springer and BioMed Central can offer general guidance.

Conversely, the online Journal Suggester automatically considers the same key points, during the process of personalized recommendations which are given below.

1. Choosing the theme: Focus on the research discipline best suited for the unpublished manuscript. Consider the best fit of the study within research models of applied science, clinical research, basic research, or translational research. Browse a list of journals by subject area.

2. Choosing the audience: Consider the target audience. Choose a specialized journal or a broader publication covering a range of topics for accessibility of the study outlined.

3. Type of article: Ensure the possibility of publishing the article in our journal of choice. Depending on the study and journal publication guidelines, submit the manuscript as an original research article, a review, or a case study.

4. Impact Factor: This is not a key requisite for publication. However, enquire about the metrics as a measure of the journal's reputation, in alignment with the quality of impending publication.

5. Publication timeline: Estimate the timeline for peer review and the turnaround time for publication in the journal of interest. To reach a broader audience, consider options from open access journals

We can further refine the web-based recommendations tool by including the following parameters to the semantics analysis:

1. Minimum impact factor sought
2. Article acceptance rate
3. Time to first decision
4. Indexing services
5. View (choice of all journals, fully open access journals only, or subscription journals).

The practice of research publication from proposal to journal article should align with best practices and codes of conduct. To begin with, therefore, publishing ethics highlight the researcher's responsibility towards publication of the finalized manuscript. Selecting a journal via Journal Suggester depend on inputs of the unpublished manuscript's abstract, research description, or a sample text. We can refine the results based on the defined parameters of 1) Publishing model, 2) Impact Factor and 3) Journal access.

With a list of journals at hand for the manuscript of interest, the following user guide will assist in the publishing process:

1.Manuscript preparation: Select a journal of your first choice from the refined list provided via Journal Suggester. Follow journal-specific guidelines on content style and the submission process—detailed as "Instructions for Authors", on the individual journal's homepage.

2.Language: Ensure the manuscript clearly articulates its message in the English language. We may either ask a native English-speaking colleague to review your manuscript for clarity or we may use a professional language editing service to help refine our manuscript.

3.Referencing style: Depending on the discipline refined via Journal Suggester, select the referencing style of your Springer journal of choice. Sample referencing styles are within your journal's "Instructions for Authors". Springer also provides output styles supporting the formats of both EndNote and LaTeX.

4.Artwork: For Springer publications, all of your artwork requires submission in an electronic format. Next, the publication will meticulously produce the artwork to the highest standards, while directly reflecting its quality as provided.

5.Cross Check: The shortlisted Springer journal will crosscheck your manuscript for plagiarism detection and ensure originality of content.

6.E Supplementary: It is possible to publish further dimensions of the article as electronic supplementary materials (animations, movies, audio, etc.). Springer accepts electronic files for publication in the online version only.

7.Author helpdesk: For further assistance with article publication on the selected Springer journal, fill in the online helpdesk.

RPE05: PUBLICATION MISCONDUCT

A. Group Discussions

1. Subject specific ethical issues, FFP, authorship

2. Conflicts of interest

3. Complaints and appeals: examples and fraud from India and abroad

Education is an on-going process. We are always received and passing on it. Sometimes we will introduce something to it but education industry is an important process. It required well defined ethics, values, the outline of the regulation of exchange and distribution. However, ethics is an important role in our educational system and also many ethical issues. There are teachers and students are direct involvement of facing these problems. Many single blogs are list out the solution of these ethical issues but not changing. Students are most important person to identifying such issues and it is a great idea because they writing ethical dilemmas about their own school.

ETHICS

- Interpret the discipline dealing with whether is good or bad with commitment and moral duty.
- The establishment of measuring right and wrong
- It classified the unique values like integrity and discipline, honesty etc. in daily routine
- It permit to make the right options in each individual
- Impact the behaviour

- To manage our life with responsibility

ETHICS IN EDUCATION

- It sets the standard of what is acceptable or what's not to protect the interest of both teachers and students
- Education are accessible both teachers and students
- Teachers are the responsible person to transform it on their students
- School management are responsible person to transform it on teachers
- It is an segment of the human right to education
- The first motive is to grow intellectual dimensions that will authorize People to recognize the ethical dimensions of issues and address ethical issues in various field
- It develop the critical thinking skills, intentional on one's purpose
- It is an abstraction about moral values and rules.

TYPES OF ETHICAL ISSUES

1. Voluntary participation

- it means that all research subjects are free to choose to participate without any pressure or coercion
- all participants are able to withdraw from or leave the study at any point without feeling an obligation to continue
- The participation of each individual does not need to provide a reason for leaving the study.
- there is no negative consequences to the participation

2. Informed consent

- It is a situation in which all potential participants receive and understand all the information they need to decide whether they want to participate
- It includes information about the study's benefits, risks, funding and institutional approval

3. Anonymity

- You don't know the identities of the participants
- Personally identifiable data is not collected
- It may be impossible to truly anonymize data collection

4. Data pseudonymization

- It is an alternative method where you replace identifying information about participants with pseudonymous or fake identifiers
- The data can be linked to participants but harder to do

5. Confidentiality

- It means you know who the participants are, but you remove all identifying information from your report
- All participants have a right to privacy, so should protect for their personal data as long as you store or use it

6. Potential for harm

- Physical, social, psychological and all other types of harm are kept to an absolute minimum

7. Results communication

- You ensure your work is free of plagiarism and research misconduct

PRINCIPLES OF ETHICS IN EDUCATION

- Honesty
- Confidentiality
- Conflict of interest
- Responsibility

MAIN ETHICAL ISSUES IN EDUCATION SYSTEM

- Social inequality
- Cheating
- Special treatment
- Social diversity
- Discipline
- Grading exams
- Bulling
- Uniforms

ETHICAL ISSUES IN RESEARCH

1. Study design and approval

- According to COPE “good research should be well adjusted, well planned, appropriately designed and ethically approved. To conduct research to a lower standard may constitute misconduct.”

2. Data analysis

- It is the responsibility of the researcher to analyse the data appropriately
- It ensured all sources and method used to obtain and analyse data should be fully disclosed
- The inappropriate data leads to misinterpret the results without considering possibility of the study being underpowered.

3. Authorship

- It refers to individuals or groups that create or develop the publication that disseminates that intellectual work.
- Various disciplines governing and to preserve the lineage of the creation and qualities of the work and its origins
- It conveys significant privileges, responsibilities and legal rights and may have implications for career advancement
- publishers provide clear, transparent guidance and policies for authors and they are the responsible person to protect the author rights and licensing law
- Authors are responsible for obey the policies and discipline of specific guidelines
- Questions arising any submission to post-publication
- COPE is the guider

a) It provides key information’s
b) core policy guideline for editors
c) notes on the scope of submission guidelines
d) resources for managing pre and post publication authorship disputes
e) guidelines for institutions to manage and support authorship integrity

- Two minimum requirements define authorship across all definitions making a substantial contribution to the work and being accountable for the work and its published form.
- Acknowledgements may be used to denote contributions to the work that do not meet the criteria of Authorship

- Referring to recognised guidelines can help manage respectful negotiation of authorship, especially in relationships with power imbalance.
- All journals should have a basic policy on what they consider qualifies someone to be an author of a research paper; stated clearly in the journal's information for authors, and confirmed in a statement of authorship provided before publication.
- Journals should have a process for handling authorship issues and disputes identified or raised during the review and publication process, and after publication.
- Institutions and organisations should be prepared to contribute to the investigations of authorship disputes.

4. Conflicts of Interest

- It happens when the researchers have interests that are not fully apparent and what may influence their judgements on what is published.
- It include personal, commercial, political, academic or financial interest
- A researcher need to take extra effort to ensure that their conflict of interest do not influence the methodology and outcome of the research
- It should be declared to editors and readers will judge for themselves whether the research findings are trustworthy.

5. Redundant publication

- It is also called salami publication
- It refers that two or more papers without full cross reference, share the same hypothesis, data, discussion points or conclusions
- Self-plagiarism is a form
- Self-plagiarism concerns recycling or borrowing content from previous work without citation

BASIC RESEARCH MISCONDUCT

- Making up or falsifying data, manipulating data analyses or misrepresenting results in research reports called research misconduct
- It is a form of academic fraud
- It is committed intentionally and can have serious consequences
- It is not a simple mistake or a point of disagreement about data analyses
- It is a serious issue because it can undermine scientific integrity and institutional

credibility

- It leads to a waste of funding and resources that could have been used for alternative research
- It is also called three cardinal sins of research conduct
- Falsification, Fabrication, Plagiarism (FFP) is the primary concern

FALSIFICATION

- It is the change or omission of research results to support claims, hypotheses, other data etc
- It include manipulation of research instrumentation, materials or processes
- It considered the manipulation of images or representations in a manner that distorts the data or read too much between the lines

FABRICATION

- It is the construction and/or addition of data, observations or characterizations that never occurred in the gathering of data or running of experiments
- It can occur when "filling out" the rest of experiment runs is an example.
- An incomplete or assumed result is a form of fabrication. That is Claims about results need to be made on complete data sets but the claims are made on the incomplete or assumed results.

PLAGIARISM

- It is a most common form of research misconduct
- It refers using or representing the work of others as your own work
- It check out the citation of resources and taking notes on researchers
- Researchers must recognize that what are reading in reviewing grants or journal article manuscripts for peer review cannot use their own purpose because it cannot be cited until the work is published or publicly available
- It is checked in many software's such as Turn it, Urkundu, Scribers, Grammerly etc

FALSIFICATION FABRICATION PLAGIARISM (FFP)

- It occurs in federally funded research
- It is a federal crime that punishable with fines, loss of funding eligibility and even imprisonment
- It is sometimes extensive and difficult to undo

- It may not seem like a complex issue but it can be complex in one's lab or department

COMPLAINTS AND APPEALS

Complaints

- Any type of unhappiness or dissatisfaction regarding the publication and polices of the journal called the complaints
- The policy of the journal protecting the authors, reviewers, editors and the publishers of the journal
- The process of complaints and appeals handling with the guidelines of the Committee Of Public Ethics (COPE)
- Authors, reviewers and readers may register complains and appeals
- Falsification, fabrication, plagiarism, duplicate publication, authorship dispute, conflict of interest, ethical treatment of animals, informed consent, bias or unfair inappropriate competitive acts, copyrights, stolen data, defamation and legal problem are the complaints and appeals
- It should be provided concrete data with answers to all factual questions such as who, when, where, what, how and why
- Editor, editorial board or editorial office is the responsible authority
- The consequence of resolution will follow the guidelines of COPE

APPEALS

- A appeal considered against the Editor's decision under Highly specific circumstances and usually only where a clear breach of policy can be demonstrated
- The rejection of a paper, the author may appeal to the editor
- Authors have the right to appeal an editor's decision on their article
- All appeals are sent to the journal's Editor- in- chief, who will assess your article and the details of the peer review process before the final submission

TYPES OF COMPLAINTS

- Complaints from the author
- Complaints about plagiarism
- Duplicate publication or submitting the article to various journal at the same time
- Research results misappropriations
- Complaints regarding the research errors and fraud

- Violations of research standards
- Conflict of interest
- Bias behaviour of reviewers

EXAMPLES OF COMPLAINTS AND APPEALS

Case 1: Multiple redundant submissions from the same author (2016)

- Complaints and appeals
- Intellectual property
- Post-publication discussions and corrections

Case 2: Author displays bullying behaviour towards handling editor (2020)

- Authorship and contributorship
- Complaints and appeals

Case 3: Editor and reviewers requiring authors to cite their own work (2018)

- Allegations of misconduct
- Complaints and appeals
- Journal management
- Peer review processes

Case 4: Stolen article (2017)

- Authorship and contributorship
- Complaints and appeals

Ethics is an essential part of our educational system or research process. We should be must follow publication ethics in research our research process and responsible for making a good research work. There are lot of issues involved in education such as Social inequality, Cheating, Special treatment, Social diversity, Discipline, Grading exams, Bulling and Uniforms. Study design and approval, data analysis, authorship, conflict and interest, redundant publication, falsification, fabrication and plagiarism are some of the issues faced in our research and also many complaints and appeals are in publication misconduct in India and Abroad.

B. Software tools

1. Use of plagiarism software like Turnitin, Urkund and other open source software tools

Turnitin

Turnitin is an American commercial, Internet-based plagiarism detection service which is a subsidiary of Advance. Founded in 1997, universities and high schools typically buy licenses to use the software as a service (SaaS) website, which checks submitted documents against its database and the content of other websites with the aim of identifying plagiarism. Results can identify similarities with existing sources, and can also be used in formative assessment to help students learn to avoid plagiarism and improve their writing.

Students may be required to submit work to Turnitin as a requirement of taking a certain course or class. The software has been a source of controversy, with some students refusing to submit, arguing that requiring submission implies a presumption of guilt. Some critics have alleged that use of this proprietary software violates educational privacy as well as international intellectual- property laws, and exploits students' works for commercial purposes by permanently storing them in Turnitin's privately held database. (Wikipedia, Turnitin, 2020)

Urkund: Urkund is a ant plagiarism system which checks the content and similarity. The different steps are submission of the document, relevant sources are retrieved, machine learning powered analysis, and report creation and analysis. The analysis overview will be given in different colours according to the similarity of the document.

Anti-plagiarism software

“Software that searches the Web for duplicate textual content. It may be a stand-alone program installed in the user's computer or a function of a website, such as www.turnitin.com. Universities increasingly use anti- plagiarism software to determine if students have copied someone else's prose, and writers use it to see if others are using their copyrighted work in full or in part” (Source: www.pcmag.com).

Anti-plagiarism software/tool cannot stop or prevent the plagiarism. Find/detect the sources of contents which are matching

Plagiarism Detection Tools by Subscription (Not free)

- Turnitin
- Plagiarism Detect.org
- Academic Plagiarism
- Blackboard

- Grammarly
- iThenticate

Open Access Plagiarism Detection Tools

- Plagiarism Checker
- Dupli Checker
- PaperRater
- Plagiarisma
- Plagium
- Copyleaks
- PlagTracker
- PlagScan

1. Turnitin

Turnitin is a plagiarism detection service provided to check possible cases of plagiarism especially in students' written work. Checking plagiarism through Turnitin needs license. When a paper is submitted to Turnitin, it compares the work with its own database and many other educational databases. It claims that apart from preventing plagiarism, Turnitin supports high quality writing by proper feedback.Turnitin, a plagiarism.org partner, considers themselves to be "the world's most widely recognized and trusted resource to prevent Internet plagiarism". Free trials are also available, and subscription costs vary depending on the type of plan chosen.

- Turnitin is a web-based plagiarism detection software provided by Turnitin.com.
- Turnitin is a tool to find and indicate the matching contents.
- Turnitin's plagiarism prevention tool generates originality reports that show how much of a document is original, cited from other sources, or unoriginal.
- For students to identify their mistakes or weaknesses in citations so as to improve their academic writing skills.
- Compares with huge collections of e-resources available around the world
- Turnitin is used by more than 30 million students at 15,000 institutions in 150 countries.

Turnitin Coverages

The major databases coverages of Turnitin

- Springer
- EBSCO Host
- ProQuest
- Thieme
- Elsevier
- PubMed
- Medline
- Sage
- Crossref
- Oxford University Press
- De Gruyter
- Peter Lang
- UCSanDiego

Features of Turnitin

- Easy to submit your papers, articles, book chapters, theses, and etc.;
- Find and get source of the matching contents;
- Instant receipt of submission;
- Feedback through same interface; and
- Useful for checking referencing before submission.

Turnitin - Subscription

There are four types of subscriptions:

- Consortium - A top level account containing a number of institutional accounts for clients with multiple locations which may be geographically separated.
- Institution -The institutional or ‘single campus’ account allows the administrator to create multiple departmental accounts beneath it for purposes of statistical tracking or to allow departmental level administrators to access the service
- Department -This account type can only allow individual instructor accounts to be created as sub-accounts.
- Individual- A single user Turnitin account. Only a single instructor profile can be joined to an individual account.

Turnitin differentiates the levels of index

Blue-No matching words

Green -1% - 24% similarity index

Yellow-25% - 49% similarity index

Orange-50% - 74% similarity index

Red -75% - 100% similarity index

2. URKUND

URKUND is a completely automated system against plagiarism (Anti- plagiarism software) and is being successfully used at universities and colleges all around the world. URKUND's system checks all documents against three central source areas:

a. The Internet

b. Published material such as Journals, Books etc.

c. previously submitted student material (e.g. memoranda, case studies and examination works)

URKUND never determines what a plagiarism is, but Urkund compares textual similarity and subject similarity. The reports generated by Urkund to your teachers consist, in the event of its finding similarities, of a text comparison. Urkund marks your documents that are similar to other sources, in URKUND's archives, on the Internet and in published material, and give the teacher access to the original material where Urkund have found the similarity.

Universities who have signed MoU with INFLIBNET Centre, which come under section 12(B)/2f of UGC Act and eligible for funding from UGC, will be getting the software free of cost from INFLIBNET Centre. Universities such as private, which are not eligible for grants from UGC, may contact M/s. eGalactic for placing the order directly for getting access of Urkund software. The price benefit of the product negotiated by the INFLIBNET are extended to those universities which have signed MoU with INFLIBNET Centre.

3.iThenticate

iThenticate is the leading provider of professional plagiarism detection and prevention technology used worldwide by scholarly publishers and research institutions to ensure the

originality of written work before publication. iThenticate helps editors, authors and researchers prevent misconduct by comparing manuscripts against its database of over 50 billion web pages and 130 million content items, including 40 million works from 590 scholarly publisher participants of CrossCheck, a service offered by CrossRef and powered by iThenticate software. iThenticate is developed by Turnitin, the leader in plagiarism and originality checking for educational institutions worldwide. The company is headquartered in Oakland, California with an international office in Newcastle, United Kingdom

4.Dupli Checker

Dupli Checker is a free online plagiarism detection tool. The users need not register to avail the service of this free software. The writers can check the content through the search engines like Google, Yahoo and MSN. The users can type a few phrases or paste their article in the box given for checking on this free plagiarism tool. To check plagiarism users have to select the search engine. The software will check the cases of plagiarism and will show the result when clicked on the search button. Hence, the plagiarism check is at one's finger tips

5.Plagiarism Checker

Plagiarism Checker is a free online plagiarism detection tool. It checks the text submitted by the users by splitting up the piece into small, distinct fragments. After identifying plagiarism it will report the results. It is fully free and no registration or paid membership is needed for checking plagiarism through 'Plagiarism Checker'

6.Viper Plagiarism Scanner

Viper Plagiarism Scanner is a freeware which can be downloaded from http://www.scanmyessay.com. Viper has an easy to use interface and it scans about 10 billion resource to check cases of plagiarism. It also provides editing service and helps to avoid spelling and grammatical errors in the assignments and papers. It also helps to provide a standard bibliography with consistent standard.

RPE 6 DATABASES AND RESEARCH METRICS

A. Databases

INDEXING DATABASES AND CITATION DATABASES: WEB OF SCIENCE, SCOPUS ETC.

Indexing databases

Journal indexing databases are specialized databases that catalogue and provide access to scholarly journals and their articles. These databases play a crucial role in academic research, as they allow researchers to discover relevant articles and access them for further study. Researchers, scholars, students, and other stakeholders rely on these indexing databases to find relevant literature for their research and stay updated with the latest publications.

An index is a list of items pulled together for a purpose. Journal indexes (also called bibliographic indexes or bibliographic databases) are lists of journals, organized by discipline, subject, or type of publication. Journals included in an index are considered of higher quality than journals that are not. This is because journals have to go through a vetting process to be included, or indexed, in reputable bibliographic databases.

A database index is a physical access structure for a database table that tells the database where records are physically stored on the disk. A database index functions similarly to a textbook index. Adding appropriate indexes to large database tables is the most important aspect of database optimization. A database index is a data structure that improves the speed of data retrieval operations on a database table at the cost of slower writes and increased storage space. The creation of indexes involves one or more columns of a database table, which provides random lookups and efficient access to ordered records. The database index requires comparatively less storage space than the original table.

The citation index (indexing) is an ordered list of cited articles, each accompanied by a list of citing articles. The citing article is identified as the source and the cited article as a reference. An abstracting and indexing service is a product, a publisher sells or makes available. The journal contents are searchable using subject headings (keywords, author's names, title, abstract, etc.,) in the available database. Being represented in the relevant online abstracting and indexing services is an essential factor for the success of a journal. Today search is done online, so a journal must be represented in the relevant online search system. A citation index is a kind of bibliographic database, an index of citations between publications, allowing the user to easily establish which later documents, and cite which earlier documents.

A form of citation index was first found in the 12th century in Hebrew religious literature. Legal citation indexes were found in the 18th century and were made

popular by citators such as Shepard's citations (1873). In 1960, the Eugene Garfields Institute for Scientific Information (ISI) introduced the first citation index for papers published in academic journals, first the science citation index (SCI) and later the social science citation index and the arts and humanities citation index. The first automated citation indexing was done by “CiteSeer” in 1997. Other sources for such data include Google Scholar and Elsevier's Scopus.

Citation databases

A citation database is a form of bibliographic index which provides a record of citations between publications, enabling a user to see which publications have cited which other publications. Such a database will show which authors have cited a publication and how many times an author has been cited.

Citation databases have been developed as a means of evaluating publications, allowing a user to establish citation counts and to check, for example, which publications and authors are the most cited.

Citation analysis and bibliometric indicators have been made possible by such databases. However, citation count in itself should not be taken as a guarantee of quality and there can be many reasons for a particular citation (e.g. negative citations, self-citation).

Citation databases tend to focus on journal articles but may cover other material such as books, conference papers, dissertations or reports. No citation database covers all publications. Note also that some disciplines (e.g. the sciences) are more heavily covered than others (e.g. the arts). Citation databases do not tend to provide a user with full-text access to the publications which have been indexed.

Citation databases compile the citations in the reference lists (bibliographies) of scholarly publications. Citation database records also include bibliographic content that identifies a publication: article title, journal name, author, abstract, etc.

Why use a citation database?

Citation databases enable you to find newer papers that reference a paper or author you already know about. You might want to do this to:

- Find more papers on a topic
- Trace how an idea has been confirmed, applied, extended or corrected in later

publications

- See which other researchers are citing your work or the work of your labmates
- Find citation numbers and metrics to report on job or grant applications, evaluations, etc.

Three major databases allow interdisciplinary citation searching: Web of Science (WoS), SciVerse Scopus, and Google Scholar. Some other databases, such as SciFinder Scholar (chemistry), PsycInfo and PubMed, allow citation searching of smaller sets of journals and/or journals focused on specific disciplines.

- WoS provides complete citation data back to 1900, making it the most accurate for identifying core or classic articles published before 1996.

- The Journal Impact Factor has been used as a benchmark in the biomedical sciences for several decades. Although research benchmarks are evolving, most research scientists will likely be asked at some point to report the Journal Impact Factor of the journals in which they publish. (MSSM, 2020).

Importance of journal index databases

Journal indexing databases play a crucial role in the academic and research community.

1. Access to Scholarly Literature: Journal indexing databases provide a centralized and organized platform for researchers, scholars, and students to discover and access a vast amount of scholarly literature. These databases act as comprehensive repositories, allowing users to search for articles based on keywords, authors, subjects, or specific criteria. They enhance the discoverability of relevant research and make it easier to access articles from various disciplines and sources.

2. Literature Review and Research: Journal index databases are invaluable for conducting literature reviews and research. Researchers rely on these databases to identify existing knowledge, explore previous studies, and understand the current state of research in their fields. By searching through indexed journals, researchers can access relevant articles, examine related work, and build upon existing research to advance their studies.

3. Staying Updated with Research: Indexing databases help researchers stay up to date with the latest developments and publications in their areas of interest. These

databases continuously add new articles from journals, ensuring researchers have access to the most recent research findings and scholarly work. By subscribing to alerts or notifications, researchers can receive updates on new articles, ensuring they stay current with advancements in their field.

4. Research Evaluation, Citation Tracking and Impact Assessment: Many indexing databases provide citation data, allowing researchers to track and analyze the impact of their work and the work of others. Citation metrics such as citation counts, h- index, and citation networks help researchers assess the influence and visibility of specific articles or authors within their research communities. This information is valuable for evaluating research impact, identifying influential articles, and establishing collaborations.

5. Interdisciplinary Research: Journal indexing databases cover a wide range of disciplines and subject areas. They facilitate interdisciplinary research by enabling researchers to explore literature and findings beyond their specific fields of study. Researchers can identify connections, draw insights, and leverage knowledge from diverse disciplines, fostering interdisciplinary collaborations and innovation.

6. Quality and Credibility: Journal indexing databases often include reputable and peer-reviewed journals. The inclusion of high-quality journals ensures that the articles available through these databases undergo a rigorous review process, enhancing the credibility and reliability of the information researcher's access.

Web of Science (WoS)

Clarivate Analytics/Web of Science is a subscription-based online citation indexing service that provides access to multiple databases referencing interdisciplinary research, enabling comprehensive citation search and in-depth investigation of specialized subfields within a scientific discipline. It consists of 6 core databases, several specialist collections as well as regional databases and currently contains more than 160 million records and over 1.7 billion cited references. A select number of Atlantis Press journals and reports are indexed in Web of Science databases such as the Science Citation Index Expanded (SCIE), the Emerging Sources Citation Index (ESCI), and the Conference Proceedings Citation Index (CPCI).

Scopus

Scopus by Elsevier is the world's largest abstract and citation database of peer-reviewed scholarly journals, books and conference proceedings, covering research topics across all scientific, technical and medical disciplines. The database currently contains more than 75 million records and over 1.4 billion cited references and also offers various intelligent tools and metrics for tracking, analysing and visualizing research results.

PubMed Central (PMC)

PubMed Central (PMC) is a free, full-text digital archive of biomedical and life science journal literature developed and maintained by the National Center for Biotechnology Information (NCBI), a division of the US National Library of Medicine (NLM) and the US National Institutes of Health (NIH). To date, PMC contains more than 5.9 million full-text articles spanning several centuries of biomedical and life science research (late 1700s to present). Publishers' participation in PMC is voluntary, however, participating journals must meet certain scientific and technical standards and content must be deposited under the NIH Public Access Policy.

Directory of Open Access Journals (DOAJ)

The Directory of Open Access Journals (DOAJ) is a community-curated online directory of Open Access journals intended to serve as a starting point for all information searches for high-quality, peer-reviewed Open Access material. DOAJ's mission is to increase the visibility, accessibility, reputation, use, and impact of high-quality, peer-reviewed, open- access scholarly research journals worldwide, regardless of discipline, geography, or language. The directory currently contains more than 14,000 open-access journals from 133 countries and more than 4.6 million open-access articles from all areas of natural sciences, technology, medicine, social sciences and humanities.

PubMed

PubMed is a free search engine that provides access to biomedical and life science references and abstracts published by the National Center for Biotechnology Information (NCBI), a division of the U.S. National Library of Medicine (NLM), developed and maintained by the US National Institutes of Health (NIH). PubMed contains more than 30 million citations and abstracts, primarily from MEDLINE, but also from PubMed Central (PMC) and other life science journals and books, covering the fields of biomedicine and health, as well as parts of life sciences, behavioural

sciences, chemical sciences and bioengineering. Many PubMed records also contain links to full-text articles, some of which are freely available (often in PMC).

Ulrich web

ProQuest's Ulrichsweb is the standard online library directory and database for journals, magazines, newspapers and other journals. As such, it is considered the global authority on journal knowledge and analysis, comprising more than 383,000 journals from over 90,000 publishers, covering 977 subject areas and 200 different languages. Records include searchable TOCs, ISSN, title, publisher, online availability, subject area, language, list prices and more.

Google Scholar

Google Scholar is a freely accessible web search engine that indexes the full text or metadata of scholarly literature across a range of publication formats and disciplines. The Google Scholar Index includes most online peer-reviewed scholarly journals and books, conference papers, theses and dissertations, preprints, abstracts, technical reports and other scholarly literature, including court opinions and patents. It is estimated to contain more than 160 million documents and still covers around 90% of all articles published in English.

ERIC

The Education Resources Information Center (ERIC) is an online library of education research and resources. It includes articles from education-related journals, reports, conference papers, and other publications.

JSTOR

JSTOR is a digital library that primarily focuses on the humanities, social sciences, and arts. It provides access to a vast collection of academic journals, books, and primary sources. JSTOR offers both current and archival content, making it useful for historical research as well.

These databases employ indexing techniques to organize and categorize journal articles based on various attributes, such as author names, keywords, publication dates, and subject classifications. Users can search these databases using keywords, author names, article titles, or specific criteria to retrieve relevant articles. The indexing process involves the systematic collection, categorization, and metadata enrichment of

the articles to enhance discoverability and facilitate efficient searching.

Journal index databases are essential resources for researchers, scholars, and students. They serve as centralized repositories for scholarly literature and provide organized access to a variety of research articles from different disciplines. By providing efficient search capabilities, these databases allow users to quickly find and retrieve relevant literature. Journal index databases play a crucial role in keeping researchers informed of the latest advances in their field. They contribute to the dissemination of knowledge, facilitate interdisciplinary research and promote collaboration between scientists. Additionally, these databases provide citation data and metrics that aid in research appraisal, impact assessment, and identification of influential works.

RPE 6

B. Research Metrics (3 hrs)

Research metrics are the fundamental tools used across the publishing industry to measure performance, both at journal- and author-level. For a long time, the only tool for assessing journal performance was the Impact Factor – more on that in a moment. Now there are a range of different research metrics available. This “basket of metrics” is growing every day, from the traditional Impact Factor to Altmetrics, h-index, and beyond.

Journal metrics measure, compare, and often rank research and scholarly publications. They can also be referred to as journal rankings, journal importance, or a journal's impact. Journal metrics allow scholars and researchers to compare scholarly periodicals.

The original citation impact metric is the Journal Impact Factor, created in the 1950s, and available through Thompson Reuters' Journal Citation Reports. More recently, a variety of other free journal metrics have been created, including CiteScore, Eigenfactor, Google Scholar Metrics, SCImago Journal & Country Rank (SJR), and Source Normalized Impact per Paper (SNIP).

Each journal ranking metric uses its own formula to determine a journal's importance to the research community. Many include counting the number of times the journal has been cited in other works. The differing formulas and methodology mean the results will differ from metric to metric. For example, an Eigenfactor score takes into consideration the size of the journal, allowing larger journals more weight, while other

metrics do not take this into account. Comparing results from more than one metric will provide a better picture of the real impact of a journal.

Impact Factor of journal as per journal citation report, SNIP, SJR, IPP, Cite Score.

The impact factor (IF) is a measure of the frequency with which the average article in a journal has been cited in a particular year. It is used to measure the importance or rank of a journal by calculating the times its articles are cited.

How Impact Factor is Calculated?

The calculation is based on a two-year period and involves dividing the number of times articles were cited by the number of articles that are citable.

Calculation of 2010 IF of a journal:

A = the number of times articles published in 2008 and 2009 were cited by indexed journals during2010.

B = the total number of "citable items" published in 2008 and 2009.

A/B = 2010 impact factor

Tools to Measure Journal Impact (Impact Factor)

• Journal Citation Reports (more)

• SCImago Journal Rank (SJR) (more)

• SNIP (Source Normalized Impact per Paper)

Journal Citation Reports

Journal Citation Reports provides ranking for journals in the areas of science, technology, and social sciences. For every journal covered, the following information is collected or calculated:

Citation and article counts, Impact factor, Immediacy index, Cited half-life, citing half-life, Source data listing, Citing journal listing, Cited journal listing, Subject categories, Publisher information.

• Limited to the citation data of Journals indexed in Web of Science

• Process to determine journals included in the tool

• Indexes over 12,000 journals in arts, humanities, sciences, and social sciences

You can enter a journal title in the Search box under "Go to Journal Profile". Because impact factors mean little on their own, it's best to view the journal you are interested

in comparison to the other journals in the same category. To determine the impact factor for a particular journal, select a JCR edition (Science and/ or Social Science), year, and Categories, found on the left of the screen. Click Submit. Scroll the list to find the journal you are interested in. The list can be resorted by Journal time, Cites, Impact Factor, and Eigenfactor**.**

Eigen factor

Eignenfactor scores can be found in the above listed Journal Citation Reports or at eigenfactor.org.Journal Citation Reports or at eigenfactor.org. Eigenfactor scores are intended to give a measure of how likely a journal is to be used, and are thought to reflect how frequently an average researcher would access content from that journal.

Scopus (Elsevier)

The Scopus Journal Analyzer provides a view of journal performance, enriched with two journal metrics - SJR (SCImago Journal Rank) and SNIP.

SCImago Journal Rank (SJR) (Elsevier)

“The SCImago Journal & Country Rank is a portal that includes the journals and country scientific indicators developed from the information contained in the Scopus® database (Elsevier B.V.).”Scopus contains more than 15,000 journals from over 4,000 international publishers as well as over 1000 open access journals. SCImago's "evaluation of scholarly journals is to assign weights to bibliographic citations based on the importance of the journals that issued them, so that citations issued by more important journals will be more valuable than those issued by less important ones."

SNIP (Source Normalized Impact per Paper)

Source Normalized Impact per Paper (SNIP) measures contextual citation impact by weighting citations based on the total number of citations in a subject field. The impact of a single citation is given higher value in subject areas where citations are less likely, and vice versa. Unlike the wellknown journal impact factor, SNIP corrects for differences in citation practices between scientific fields, thereby allowing for more accurate between-field comparisons of citation impact. CWTS Journal Indicators also provides stability intervals that indicate the reliability of the SNIP value of

a journal. SNIP was created by Professor Henk F. Moed at Centre for Science and Technology Studies (CWTS), University of Leiden. (UIC, 2020).

CiteScore:**CiteScore** is the number of citations received by a journal in one year to

documents published in the three previous years, divided by the number of documents indexed in Scopus published in those same three years.

Scopus can be used to measure the prestige of a particular journal within the database. Scopus Journal Analyzer uses the following metrics to analyze journals and articles. Scopus also analyzes the scholarly output and impact of authors, institutions, and countries.

SJR (SCImago Journal Rank) indicator

It expresses the average number of weighted citations received in the selected year by the documents published in the selected journal in the three previous years, --i.e. weighted citations received in year X to documents published in the journal in years X-1, X-2 and X-3.

SNIP (Source Normalized Impact per Paper)

A corrective metric to account or difference in citation potential in different fields. (LIU, 2020)

B. Research Metrics

Metrics: h-index, g index, i10 index, altmetrics

Researchers use different metrics to measure the quality of the published papers in journals. It basically gives an idea of the impact of any research paper. These metrics can be applied to any publication on any subject across the world. Through research metrics, one can monitor and quantify the published articles. These citation metrics ultimately help in getting a university's ranking.

Research metrics are one of the most established ways to measure the quality of research work. It tells the importance of particular research. Nowadays, H-index, G-index, i-10 index, altmetrics are commonly used research metrics. These metrics help in measuring how much a researcher article is cited by the co-researchers. It helps in increasing the impact of the research work. Researchers can use these metrics for availing various fellowships and scholarships, gaining job opportunities across the world.

What metrices means

- A system or standard of measurement
- Metrics are measures of quantitative assessment commonly used for assessing, comparing and tracking performance or production.

Why do we discuss on it?

- To support applications for promotion, ugc care, ugc rules 2018
- By a researcher to maintain their own research profile
- In department and faculty reviews and national assessment exercise

Research metrics aim to quantify and monitor the importance of published research. Research metrics are the fundamental tools used across the publishing industry to measure performance. both journal- and author level.

- Research metrics is the quantitative analysis of scientific and scholarly research outputs and their impacts.
- Research metrics include a variety of measures and statistical methods for assessing the quality and broader impact of scientific and scholarly research, as well as to track researcher impact.
- Research metrics measure impact and provide insight into the influence of specific journal publications, individual articles, and authors.
-

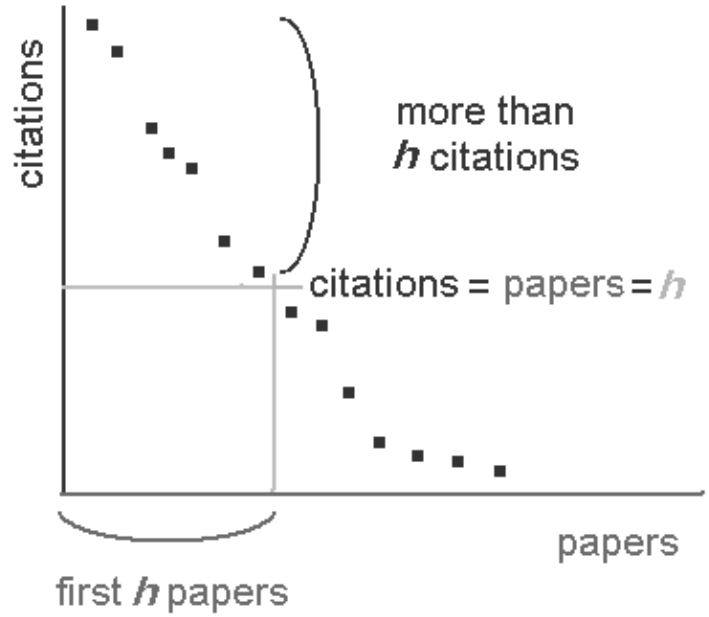
- **H Index**
- **G index**
- **I10 Index**
- **Altmetrics**

H INDEX

H-index (or Hirsch index), is the most used author metric. It was created by the physicist Jorge E. Hirsch in 2005 (California University). It is based on the number of publications and the number of citations.

What it is:

The Hirsch Index, or h-index, is an aggregate measure of an individual researcher's productivity (number of published papers) and impact (number of citations). It is a simple calculation where an individual has an h-index of *h* if *h* papers have been cited at least *h* times.



What it is used for:

The h-index was created as a mechanism for measuring both productivity and impact so that comparisons between researchers could be made. It is often used to identify researchers that are influential within a given field and is invoked by granting agencies, hiring committees, and tenure and promotion review committees.

The h-index is a simple measure that, if properly contextualized, can be more effective than other single metrics (IE: total publications, total citations, citations per publication) to articulate a researcher's output or to predict future scientific achievement.

Although it is widely recognized and frequently used, there are a few important characteristics of the h-index to note before you proceed.

- The h-index is one among many measures that can be used to describe your productivity and impact.
- The h-index is a cumulative measure, favouring tenured faculty over early career researchers.
- The h-index should only be used to make comparisons within disciplines or subdisciplines.
- The h-index includes self-citations and excludes citation context.
- The h-index is subject to the biases and inconsistencies of the database used to calculate it.
- Always note which source you used to calculate your h-index (IE: Web of Science or Google Scholar).
- Ambiguities of the h-index have inspired a multitude of variants.

How to find it:

H-indices are compiled and calculated by indexing and abstracting services. Because they index different content, a researcher's h-index will differ between each of them.

- Web of Science (available through the libraries)

    - Use Author Search to find a researcher by name. Select the person you are looking for and a summary page will include the h-index in the right-hand column. Click on "View Full Citation Report" for more details.
    - Alternately, click on an author name from any document record and be brought to their summary page.
- Google Scholar (freely available)
    - To view your own h-index, you first need to set up a Google Scholar Profile. Your Google Scholar Profile page will include all of the documents that Google has indexed under your authorship, and h-index information is listed at the top of the right-hand column.
    - To view someone else's h-index, search their name in Google Scholar. If they have a public profile, you will be able to view their h-index.
- Publish or perish (free download from Harzing.com)
    - Based on Google Scholar and Microsoft Academic data, Publish or Perish is a program that helps you calculate your h-index.

Advantages of h-index

- It relies on citations to your papers, not the journals, which is a truer measure of quality
- It is not dramatically skewed by a single well-cited, influential paper (unlike total number of citations would be)
- It is not increased by a large number of poorly cited papers (unlike total number of papers would be).
- It minimizes the politics of publication. A high impact paper counts regardless of whether your competitor kept it from being published in the top tier journals.
- It's good for comparing scientists within a field at similar stages in their careers.
- It may be used to compare not just individuals, but also departments, programs or any other group of scientists.
- Since the most highly cited articles contribute to the h-index, its determination is a simpler process.
- The h-index is intended to measure the quality and quantity of scholarly published papers simultaneously.

Disadvantages of h-index

- The h-index does not provide a significantly more accurate measure of total number of papers published by a given scholar.
- The h-index does not provide a significantly more accurate measure of impact than the total number of citations for a given scholar.
- The h -index only counts the number of papers (n) of an author which have n number of citations. It does not give any idea on the accounting for the rank in the sequence of authors.
- The h-index does not provide any idea on total time duration the published papers took to reach current h-index value.
- The scholars researching in a unique area may not get many citations so that even if they publish more papers their citations and hence the h-index may be at low value.

- The scholars with less number of publications but more citations per paper may have low value of h- index.
- h-index cannot be used to measure the annual research performance of the authors.
- h-index value does not give accurate value of author's publications as well as citations and hence confusing. For example, an author has 20 publications with citations more than 20 and 100 publications with citations close to 20 and his h-index is only 20. Another author has 20 publications only with citations more 20 and his h -index is also 20.
- The h-index only requires a minimum of n citations for the least-cited article in the set and thus ignores the citation count of very highly cited papers.
- h-index has a drawback of not considering self-citations of the authors. Self-citation by an author is like any other citation essential to present a research paper which is continuation of their work.

g- index

The g-index is an index for quantifying scientific productivity based on publication record. It was suggested in 2006 by Leo Egghe.

The index is calculated based on the distribution of citations received by a given researcher's publications:

- Given a set of articles ranked in decreasing order of the number of citations that they received, the g-index is the (unique) largest number such that the top g articles received (together) at least g2 citations.
- In simple terms, this means that an author that produces n articles is expected to have, on average, n citations for each of them, in order to have a g-index of n. In this way, it is similar to the h-index, with the difference that the number of citations per article is not explicit

Advantages of g-index

- Improved version of h-index and hence represents both number of publications and number of citations.
- G-index calculation methodology gives more weightage to highly cited papers.
- The g -index is an alternative for the h index is an alternative for the h -index, which index, which doesn't average the numbers of citations.
- In a group of authors of the same field, the variance of the g-indexes will be much higher than the one of the h-indexes which make a comparison between authors concerning their visibility in the world more apparent.

Disadvantages:

- Like the h-index, the g-index is a natural number and thus lacks in discriminatory power.
- Like h -index, g index, g -index failed to give absolute index failed to give absolute value of a total number of papers published by an author during a given period.
- G-index also fails to represent the total citations of an author during a given period.

i10 INDEX

The i10-Index, used solely by Google Scholar, was introduced in July 2011. It calculates the number of academic publications an author has written that have at least ten citations from others.

It can define as a measure of having publications with at least 10 citations. For example, if an author/researcher's i-10 index is 6, it indicates that six of his/her publications are cited 10 times. i-10 index also helps in increasing the weightage of any student profile. The main advantage of the i-10 index is that it can be calculated very easily. Google scholar provides easy and free access to find out these metrics.

- The i10-Index, used solely by Google Scholar, was introduced in July 2011. It calculates the number of academic publications an author has written that have at least ten citations from others.
- This is one way to gauge the productivity of an author. i10-Index = the number of publications with at least 10 citations

Advantages of i10 INDEX

- Very simple and straightforward to calculate.
- My Citations in Google Scholar is free and easy to use.
- Authors can identify the important papers out of their publications which have contributed for the continuation of research based on received at least 10 citations.
- i10 index gives an idea of quantity and quality of scholarly published papers of an author simultaneously.

Disadvantages of i10 INDEX

- Used only in Google Scholar
- i10-index becomes stagnant once all published papers reach 10 citations.
- It does not count number of publications or number of total citations of an author.
- It does not signify the position of the author in the sequence of authors of the published paper. It does not identify single author papers, annual research contribution of an author

ALTMETRICS

Altmetrics are metrics and qualitative data that are complementary to traditional, citation-based metrics. Sourced from the Web, Altmetrics can tell you a lot about how often journal articles and other scholarly outputs like datasets are discussed and used around the world. They can include (but are not limited to) peer reviews on citations on Wikipedia and in public policy documents, discussions on research blogs, mainstream media coverage, bookmarks on reference managers like Mendeley, and mentions on social networks such as Twitter. For that reason, Altmetrics have been incorporated into researcher's websites, institutional repositories, journal websites, and more.

How they work:

You probably already know that nearly everything on the internet is tracked. What you click can be used to inform website design, serve targeted adds, or as a simple measure of popularity. Altmetrics uses this ability to track interaction with online items as a way of measuring research impact and reach.

Altmetrics can answer questions such as:

- How many times was it downloaded?
- Who is reading my work? (on Mendeley, bookmarking sites, etc.)
- Was it covered by any news agencies?
- Are other researchers commenting on it?
- How many times was it shared? (on Facebook, Twitter, etc.)
- Which countries are looking at my research?

What can altmetrics do?

- Explore the impact of your research beyond "traditional" journal-level metrics. See how different audiences—from fellow researchers to middle school students—are engaging with your scholarship on the open web.
- Show funders the broad reach of an article that was produced from your grant research.
- Manage your scholarly reputation. Keep abreast of who is talking about your research and what they are saying. Include altmetrics on your CV and professional website.
- Compare your work to others in your field. Discover what articles at Pitt and other institutions are getting the most attention and work to improve the reach of your own work.

Examples

- Discussion--Twitter, Facebook, blogs
- News--News outlets, newspapers, wire services
- Shares--Twitter, Facebook
- Views and downloads- publisher website, repositories
- Ratings--Amazon.com, Speaker Deck
- Likes/dislikes--Youtube, Slideshare
- Holdings--Worldcat (number of libraries worldwide which own a particular book)

Advantages :

- **Capture elements of societal impact**
  Altmetrics data can inform researchers of elements of the societal impact of their research. For example, altmetrics data can help researchers understand how their research is being interacted with by the public, government, policy makers, and other researchers.

- **Complement traditional metrics**
  Altmetrics provide a wider range of data, from a wider range of sources than

traditional metrics. Altmetrics data is also highly nuanced and can be provided in high detail and in the context in which it originates.

- **Offer speed and discoverability**
  Altmetrics data accumulates at a faster speed compared to traditional metrics. In disciplines where citations grow slowly, or in the context of new researchers, this speed helps determine which outputs are gaining online attention.

- **Open access advantage**
  Providers like Altmetric.com and ImpactStory provide access to their API and source code. Altmetrics providers also pull their data from open sources, who give access to their APIs or raw usage data, which makes altmetrics data more easily replicable than data in proprietary databases.

Disadvantages:

- **altmetrics lack a standard definition**
  The field of altmetrics remains undecided on what altmetrics truly measure. However, the NISO Alternative Assessment Metrics (Altmetrics) Initiative is currently working to create a standard definition of the term and has a draft of its definition open for public comment.

- **altmetrics data are not normalized**
  It is not advised to compare between sources and data sets for altmetrics, as different providers collect different kinds of data. Instead, we suggest using altmetrics to tell a story about your research - see the "Use Cases" tab for more information.

- **altmetrics are time-dependent**
  Altmetrics provide information about the use of the work, but much of this use has a lifespan - and that lifespan is unknown. For older works, there may not be much altmetrics activity, but that does not necessarily mean that the work is not heavily used.

- **altmetrics have known tracking issues**
  Altmetrics work best with items that have a Digital Object Identifier (DOI). PlumX is one provider that can track usage of an item with only a URL, but not all providers provide the same level of tracking for items without DOIs.

Research metrics are quantitative tools used to help assess the quality and impact of research outputs. Metrics are available for use at the journal, article, and even researcher level. However, any one metric only tells a part of the story and each metric also has its limitations. Therefore, a single metric should never be considered in isolation. The h index is a metric for evaluating the cumulative impact of an author's scholarly output and performance; measures quantity with quality by comparing publications to citations. The h index corrects for the disproportionate weight of highly cited publications or publications that have not yet been cited. G-index is introduced as an improvement of the h-index of Hirsch to measure the global citation performance of a set of articles. If this set is ranked in decreasing order of the number of citations that they received, the g-index is the (unique) largest number such that the top g articles received (together) at least g^2 citations. The i10-index is the newest in the line of journal metrics and was introduced by Google Scholar in 2011. It is a simple and straightforward indexing measure found by tallying a journal’s total number of published papers with at least 10 citations. Altmetrics are metrics that measure the amount of attention research is receiving online. This data can be useful for monitoring your personal impact

with other scholars, practitioners, policy makers and the public. Using all these metrices you can analyse the impact of a research paper.