

Research Ethics FAQ(Graduate School)

2023.12. Research Ethics Center at Office of Research Affairs

1. What is research misconduct?

- According to the university's [Research Ethics Regulations], research misconduct can be defined as follows.

Article 9 (Scope and Verification of Research Misconduct)

① 'Research misconduct' refers to fabrication, falsification, plagiarism, invalid authorship, unjust duplication publication, interruption of research misconduct investigation, etc., carried out in the proposal, execution, reporting, and presentation of research, as defined in the following subparagraphs. It also includes instances where individuals propose, coerce, or pressure others to engage in the aforementioned acts of misconduct. However, this excludes cases caused by minor negligence or differences in the interpretation or judgment of data and research results.

1. 'Fabrication' refers to the act of producing, recording, or reporting primary research materials, research materials, or research results that do not exist.
2. 'Falsification' refers to the act of distorting research content or results by artificially manipulating research materials, equipment, processes, etc., or arbitrarily modifying or deleting primary research materials or research materials.
3. 'Plagiarism' refers to the act in which a third party utilizes other people's original ideas, which are not generally available knowledge, or creations without properly crediting the source and passes them off as their own work. However, the determination of plagiarism is primarily based on the opinions of experts in the relevant academic field, such as scholarly societies.
 - a. Using all or part of someone else's research content without proper citation.
 - b. Modifying some of the words or sentence structures from another person's work while not providing proper attribution.
 - c. Incorporating someone else's original thoughts or ideas without appropriate citation.
 - d. Using another person's work through translation without citing the source.
 - e. Presenting all or part of the core concepts from research content published or presented by someone else as if they were one's own research concepts, without proper citation. This includes cases where research primary data or materials such as graphs, charts, diagrams, or images are different.
 - f. Cases in which the cited material becomes the main content of a new work, even if the source of the original work is acknowledged
 - g. Unfairly using unpublished creative works or ideas of others without proper citation.
4. 'Invalid authorship' refers to the act of not conferring author status, without justifiable reasons, to someone who has made an academic contribution to the research content or results, or conferring

author status to someone who has not contributed academically on grounds of appreciation, courtesy, etc. In these cases, while it generally constitutes improper authorship attribution if it violates the following points, specific judgments may align with the practices and norms within the respective academic field.

- a. Those who significantly contribute to planning the research, data collection, analysis, critical revisions of key content, or substantially contribute to the composition of the research content or results can be considered as authors.
 - b. Individuals responsible solely for securing research funds, data collection, or research management cannot be considered authors, but their assistance in direct or indirect support of the research can be acknowledged in acknowledgments.
 - c. The order of authorship attribution should be determined based on the authors' relative contributions to the research, with consensus among the participating authors.
 - d. The author's affiliation should be indicated based on their affiliation at the time of conducting the research, such as during experimentation and data analysis.
 - e. The corresponding author is responsible for the entire process of writing, submission, revisions, and publication of the paper, and they should inform and receive approval from co-authors.
 - f. A supervising professor should not publish or present a graduate student's thesis in academic journals or elsewhere solely under the professor's name.
5. 'Unjust duplication publication' refers to the act in which a researcher obtains unfair benefits, such as research funds or recognition for separate research achievement, after publishing a work that is identical or substantially similar to previous research without citing the source. When determining whether improper duplicate publication has occurred, the following factors should be considered:
- a. The assessment of duplicate publication typically focuses on papers published in academic journals. However, whether to include theses, research reports, conference papers, and similar works in this assessment depends on the standards and practices within the specific academic field.
 - b. Compiling research results from previously published papers into a book does not constitute duplicate publication. However, appropriate citation should be provided in such cases.
 - c. Publishing content from an academic journal in a popular book or general interest magazine does not constitute duplicate publication.
 - d. Republishing a longer paper (full paper) that includes additional research results, interpretations, or detailed research procedures after publishing a shorter form paper (letter, communication) does not qualify as duplicate publication. However, proper citation is essential in this scenario as well.
 - e. When the same research results are published in a different language, proper citation of the original paper and obtaining prior approval from the respective journal does not constitute duplicate publication.
6. 'Interruption of research misconduct investigation' refers to the act of intentionally interfering in an investigation of misconduct or inflicting harm on the complainants.
7. It includes behavior beyond commonly tolerable scope of each research field

2. What should we know to prevent research misconduct?

- To prevent research misconduct, researchers must ensure throughout the entire research process that (1)

Deliberate research misconduct such as fabrication, falsification, plagiarism, etc., is strictly prohibited, and (2) Unintentional errors stemming from the researcher's incompetence, negligence, or self-deception do not interfere. Hence, researchers should ensure they conduct their research diligently, honestly, and pay sufficient attention to detail to uphold accuracy.

(1) Guidelines for Preventing Fabrication and Falsification

- (1) Researchers must present research findings honestly without forgery/fabrication, falsification, or inappropriate data manipulation. Altering research images (e.g., microscope images, radiographs, gel electrophoresis images) in a misleading manner is strictly prohibited.
- (2) Researchers should strive to describe methods clearly and distinctly and report results following guidelines. Publications should provide sufficient detail for other researchers to replicate experiments successfully.
- (3) Research reports must be complete. Omitting findings or results that do not support the author's or sponsor's hypotheses or interpretations due to discomfort, inconsistency, or an inability to explain is unacceptable.
- (4) Funders and sponsors of research should not have the authority to reject the publication of unfavorable outcomes related to their products or status. Researchers should not draft agreements allowing sponsors to refuse or control the release of results (excluding exceptional cases such as research classified as confidential by the government due to security concerns).
- (5) Authors should promptly notify the editor if they discover errors in a submitted, accepted, or published paper. If necessary, authors should collaborate with the editor to issue a correction article or retract the paper.

<Source: First Steps in Research Ethics for New Researchers. Korea Research Foundation. 2019>

(2) Proper Citation as Method for preventing Plagiarism

Here are several methods for proper citation for accurate referencing.

1. When using a portion of someone else's work verbatim (copying), paraphrasing, summarizing, or utilizing someone else's ideas, credit must be given for the contributions made by others.
2. When using specific sections of someone else's work verbatim, those sections must be marked with quotation marks (" ").
3. When paraphrasing sections of someone else's work, ensure a complete understanding of the content and rephrase it in your own words while acknowledging the source.
- 4 Any opinions, criticisms, historical facts not originally considered by the researcher should be properly cited whether quoted directly or paraphrased.
5. When uncertain about whether a fact or idea constitutes common knowledge, it's essential to cite the source.
6. Information or data obtained from online sources must be cited just like material or information from one's or others' papers or publications.
7. Factual information acquired through research, such as statistical data, requires proper citation. For instance, when answering a question like "How many people die from heart disease in Korea each year?" relying on someone else's research findings, it's essential to cite the source for that information.

<Source: Understanding and Practicing Research Ethics. Korea Research Foundation. 2011>

(3) Prevention of Self-plagiarism and Improper duplicate publication

► Self-Plagiarism and Improper duplicate publication

※ Caution regarding the utilization of a researcher's previous work in subsequent publications:

- Even if a researcher modifies some content or adds new material from their previous work, if there is no qualitative difference in the argumentation and conclusions between the two works, they are essentially similar publications.
- There exist various types of ethical issues in academic writing, including self-plagiarism, duplicate or redundant publication, salami/segmented publication, and imalas publication.
- Despite being one's own work, copyright often belongs to the journal or publisher. Hence, when utilizing parts or the entirety of one's previous research, proper citation is necessary, and permission from the original journal's editor for the initial publication should be obtained.

► Typical Types of Improper duplicate publication

- Salami Publication:

Dividing a single research paper into two or more smaller papers for publication, for instance, extracting portions from a thesis to publish multiple smaller papers. (However, this may vary across academic disciplines.)

- Imalas Publication:

Presenting, as if it were an entirely new paper, by adding some research outcomes or clinical cases to an already published paper. (However, it is acceptable if there is substantial new academic value even when reusing some of the previous research outcomes.)

<Source: First Steps in Research Ethics for Junior Researchers. Korea Research Foundation. 2019>

(4) Efforts to Prevent Improper Authorship Attribution

An author refers to someone who has made a substantial intellectual contribution to the research, takes responsibility for the integrity of the research, and has reached an agreement among the research team regarding being listed as an author (consent among researchers regarding authorship is crucial)

Authors can be classified into three types:

the first author (primary author), co-author, and corresponding author.

① **First Author (Primary Author):** Refers to an individual who has played a significant role in generating data by collecting it, conducting experiments, interpreting the results, and drafting the manuscript. However, in cases of collaborative research, there can be multiple first authors.

② **Co-Author:** Refers to an individual who has significantly contributed to the research project

alongside the first author, participating in data collection, analysis, interpretation, conclusion drawing, and report writing.

③ **Corresponding Author:** As an author submitting a manuscript to a scholarly journal for publication, it's essential that the corresponding authors is able to communicate easily with the publisher or readers before, during, and after the publication process.

The following improper authorship attributions clearly constitute violations of research ethics, so caution should be exercised during thesis writing.

① Granting authorship despite no intellectual contribution or involvement in the research content or outcomes

- Coercion Authorship: When a senior researcher within a research lab or department uses their position to pressure junior researchers to include their name in a paper.
- Honorary Authorship: Including the name of a well-known figure who did not contribute to the research (done either to gain favor with the individual or to enhance the credibility of the paper).
- Mutual Support Authorship: Adding the name of a well-known individual who hasn't contributed to the research (done either to flatter the individual or enhance the credibility of the paper).

② Failure to attribute authorship despite intellectual contributions or contributions to the research content or outcomes.

- Ghost authorship: When someone who significantly contributed to the research is excluded from the paper's authorship (also considered plagiarism as they might have used another person's research results without proper citation).

<Source: First Steps in Research Ethics for New Researchers. Korea Research Foundation. 2019>

3. Frequently Asked Questions (FAQ)

(1) When the source is cited in the main text, is it necessary to cite the source again when it is mentioned in the Korean abstract, introduction, conclusion, etc.?

Abstracts summarize the nature of a research paper in the author's own words and generally do not require source citations for references. This is because when summarizing significant ideas or expressions from others cited in the main text, their sources can be traced back to the main body of the paper. However, when restating content quoted from the main text in the introduction or conclusion, it is necessary to provide the sources.

<Source: Integrated Guide to Research Ethics for Practitioners. 2021>

(2) How should the results of a 'plagiarism detection program' be utilized? If the plagiarism check result percentage meets the criteria set by the academic society of 'plagiarism probability 10% or less', is it safe to submit the manuscript?

The sentence similarity percentage (%) from plagiarism detection software alone cannot determine whether it's plagiarism. The numeric result simply indicates the similarity between sentences in Work A and Work B, implying similarity but not directly equating to plagiarism. However, it's reasonable to speculate that higher sentence similarity percentages suggest a greater likelihood of plagiarism.

Depending on the nature of the academic field or the research topic—for instance, in disciplines requiring extensive citation of classical texts or in papers focusing on reviewing existing research—the sentence similarity score may naturally be high. However, it's crucial not to hastily conclude plagiarism in such cases. Instead, a meticulous examination should determine whether the similar content represents someone else's original and crucial ideas or unique research content rather than common knowledge. Conversely, even a single similar sentence might constitute plagiarism if it includes essential content or original ideas from another work. Therefore, it's advisable for experts in the respective academic fields to accurately determine cases of plagiarism.

Sentence similarity checks serve as auxiliary tools to quickly identify the likelihood of potential plagiarism and for preventive measures. However, they cannot precisely detect cases such as plagiarism in a single sentence. Relying solely on the numerical results of these checks for assurance is not advisable. Therefore, even if the sentence similarity check meets the criteria set by the academic community, it's essential to thoroughly review the parts highlighted as 'suspected plagiarism' in the assessment results. Strengthening citations and references by cross-referencing the original text is advisable. To truly avoid plagiarism, it's crucial to express one's thoughts in one's own words above all else.

<Source: Integrated Guidebook on Research Ethics for Practitioners, 2021>

- (3) I am currently in a doctoral program in the field of science and engineering, and I intend to publish some of my research work in a journal before including it in my doctoral thesis. Would publishing research content in a journal first and then using that content in my thesis be considered self-plagiarism or duplicate publication? Conversely, would presenting a paper in a journal based on the research results of my thesis after obtaining the degree be considered duplicate publication?**

An article published in a recognized academic journal has undergone peer review and is officially published. Therefore, utilizing significant data or research content from this publication in a doctoral thesis is not considered duplicate publication as long as proper attribution is provided. How previously published papers are cited in a doctoral thesis should comply with the regulations outlined in the university's guidelines for thesis submission.

In the opposite scenario, whether the content in a doctoral thesis can be published in an academic journal depends on whether the academic field considers a doctoral thesis an official publication or the publishing policy regarding submissions based on theses in that particular journal. Therefore, it is crucial to review any regulations or established practices governing this matter and proceed

accordingly.

In engineering and natural sciences, utilizing research outcomes from a doctoral thesis for publication in domestic or international academic journals is generally viewed as acceptable without constituting duplicate publication. However, in humanities and social sciences, there are academic journals where using thesis content for journal articles is prohibited. Even in cases where it's allowed, these journals may require acknowledgment that the article is based on a doctoral thesis. Therefore, authors need to verify the publication ethics standards of the relevant journals when publishing articles based on their theses.

In engineering and other technical fields, there are opinions that you don't need to cite your thesis in a research paper since it's considered an unpublished work, like an unpublished doctoral dissertation or master's thesis. However, considering today's internet access where theses are converted into PDFs and readily available, it's advisable to provide the source whenever possible, when using information from a thesis in scholarly articles.

<Source: Integrated Research Ethics Guidebook for Practitioner., 2021>

(4) Can parts of a jointly published research paper be reused in a thesis?

Reusing certain research content included in a thesis that was previously presented in a scholarly journal is a common practice in the field of science and engineering, not only in Korea but also in many other countries. However, when crafting the thesis based on content already published in a journal, it's crucial to acknowledge that the same content was published in the journal by providing citations.

There's a critical aspect that requires particular attention in this context. For instance, if a student, as one of the authors in a jointly published academic paper involving multiple researchers, directly incorporates the entire content of that paper into their thesis, it could raise issues of plagiarism and copyright infringement. Including any part of data or text produced by others in their thesis without explicit consent is a violation of copyright. Even with prior consent, using someone else's content without proper acknowledgment constitutes plagiarism and research misconduct. If there's a necessity to refer to others' data, it must be cited within the text. Discussing and obtaining consent from the advisor or supervisor beforehand when constructing a thesis based on previously published research outcomes is crucial in preventing such issues.

<Issues and Answers in Research Ethics, 2016>

(5) Is it possible to present the results obtained from project participation in both a thesis and a scholarly journal article?

In engineering and related fields, research often involves professors securing research funds and conducting studies jointly with graduate students. The graduate students, under the guidance of their professors, conduct research and subsequently write their theses based on this research. Consequently, after completing a research project, a final research report and the student's thesis may emerge, where research methods or data might overlap.

If the student's thesis is submitted first, it's possible to use the research methods, data, interpretation, conclusions, etc., from this thesis to compose a research report. In the realm of engineering research, utilizing a graduate student's thesis as the basis for a research report submission isn't generally considered an ethical concern due to the nature of research practices. However, when presenting the research outcomes from such projects in the form of a thesis or academic paper, it's important to appropriately comply with guidelines specified in research project agreements, considering the guidelines or conditions outlined by the supporting institution regarding the presentation and use of research outcomes. Sometimes, approval from the supporting institution may be necessary or citations might be required when utilizing research results.

In general, research funding is expected to support new findings on topics that have not yet been explored. It's acceptable to utilize the results from a new research topic funded by a grant for both a thesis and as a report for the funding source. However, if the thesis has already presented certain research findings, and later, similar findings from a related grant-funded project are to be published in an academic journal, this might raise ethical concerns. It could be considered as not planning for a new topic from the point of applying for the research grant, as the content was already disclosed. This could be seen as deceiving the research funding institution, which anticipates results from a new research topic, as well as the readers who trust in the credibility of the research.

<Source: Q&A on Research Ethics, 2016>

(6) What is the scope of review for the Institutional Review Board (IRB)?

The application of the <Bioethics and Safety Act> applies to research that (1) qualifies as research and (2) involves subjects of human (or human-derived materials).

Simple surveys (exit polls, opinion surveys), investigations related to business activities (market research, product satisfaction surveys), and other surveys based on generalized knowledge not systematized as research do not fall under research and are therefore not subject to IRB review.

In the case of project research, it is generally mandatory to undergo IRB review during the research process.

However, for dissertations at the master's or doctoral level, the decision to undergo review is at the researcher's discretion. Nevertheless, in the case of research involving human subjects, researchers should be cautious as it could pose an issue if they submit and publish academic papers in domestic and international journals based on their thesis after its completion.

(7) Can research data collected through surveys be separated and published as individual papers?

The primary consideration should be why one would seek to divide the data collected for four variables through a single survey into separate publications rather than presenting it in an integrated form. It's important to reflect on whether the original intention wasn't to collect data for multiple variables under the guise of the inconvenience or difficulty of data collection and then publish individual papers by analyzing each variable. This is crucial because if presenting the data separately (often referred to as 'salami slicing') results in a lack of comprehensiveness and coherence compared to presenting it together, it becomes challenging to justify the data separation.

If sufficient justification is possible within the first consideration, given that each paper utilizes different variables, it can be deemed acceptable to publish them separately. However, since the subjects, methods, and duration of the surveys are likely the same, and this data has already been utilized in the doctoral dissertation and will be used similarly in subsequent academic papers, it's crucial to clearly indicate the sources for previously used data or related content. Furthermore, describing the connections, differences, and the significance of other variables from the same sample across the doctoral dissertation and later journal articles can aid readers in understanding the differences between the two papers despite their overlapping aspects.

<Source: Research Ethics Q&A, 2016>