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Writing Assignment 2

A primary research article, also called an empirical study, is an original report that presents new scientific findings collected and analyzed by the authors. These articles usually follow a structure with sections such as Introduction, Methods, Results, and Discussion, which lets other scientists see exactly how the research was done. Their defining feature is that they present firsthand data rather than summarizing someone else's work. For example, in genetics a primary article might describe experiments using CRISPR to inactivate a gene in fruit flies, explaining the design of the study and reporting the observed changes in traits. Because they share both methods and results, primary articles allow other scientists to repeat the experiment or test the findings in a different way.

Review articles are different because they do not present new experiments or original datasets. Instead, they summarize and compare the results of many primary studies on the same topic. Their purpose is to highlight what researchers agree on, where they disagree, and what questions remain unanswered. For example, a review article in genetics might bring together decades of studies on tumor suppressor genes to explain overall patterns and research gaps. These articles are especially helpful for students or professionals in the field who want to quickly understand a field without reading every individual paper. By combining the results of many studies, review articles can provide a broader picture of what is known and what still needs more research.

Both primary and review articles go through the peer review process, which is the system of quality control in scientific publishing. After a researcher writes a manuscript, the journal editor first decides whether it is appropriate for that journal. If it passes this step, the editor sends the paper to experts in the same field, often called referees, who evaluate its quality. Reviewers

ask whether the research is original, whether the methods are sound, whether the conclusions match the data, and whether the findings are important. Based on their evaluations, the editor may reject the paper, accept it, or request revisions. This process can take months or even years, and top journals often reject the majority of submissions. While not perfect, peer review remains the main way to ensure that published studies are reliable and contribute useful knowledge. It is important to remember that “peer-reviewed” describes this evaluation process, while a “review article” is a type of article that summarizes research — two concepts that are often confused but not the same.