

HOW TO WRITE A THESIS

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Revised and Enlarged Edition



PUBLIC SCHOOL PUBLISHING COMPANY

Bloomington, Illinois.

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TO

MY GRADUATE PROFESSORS, THE MEMBERS OF THE
FACULTY OF THE SCHOOL OF EDUCATION OF THE
UNIVERSITY OF CHICAGO, 1916-19, WHO, BY PRE-
CEPT AND EXAMPLE, STROVE TO INCUL-
CATE IN ME A LARGER RESPECT
FOR SCHOLARSHIP

PREFACE

Produce! Were it but the veriest infinitesimal fragment of a product, produce it in God's name.—*Carlyle*

The requirement that every candidate for a graduate degree must prepare an acceptable thesis is perhaps the most characteristic respect in which a graduate curriculum of a university differs from an undergraduate curriculum. In the work of the undergraduate curriculum the student is guided by his professors at practically every step in his work, but in the work of the graduate curriculum he is placed more and more on his own resources and responsibility; moreover, he is expected to show a high and constantly increasing degree of intellectual independence. Preparing the thesis aids in developing this intellectual independence; furthermore, the quality of the thesis which the student produces is one of the best measures of the degree of intellectual independence which the student has attained; ergo, it is one of the best indexes of whether the student is entitled to a graduate degree.

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The preparation of the thesis is calculated to give the student intensive and scholarly training in the collection, the organization, and the presentation of material. If the task accom-

book is placed on the matter which, common observation has shown, causes the student the greatest trouble, namely, the literary style of the thesis. It is believed that the book contains a fairly comprehensive, reasonably harmonious, and withal practical, set of rules and suggestions on the preparation of theses and other scientific papers.¹ Manifestly, however, the book cannot claim to cover every point, nor to utter the final word on those points which it does cover. Many matters not here included must be taken for granted, and common sense must always be used in applying to each situation as it occurs the rules and suggestions herein set forth. Rules of rhetoric and grammar have not been included, because such helps are already available in many other textbooks, handbooks, and manuals.

The book could hardly have been prepared without the many helpful suggestions which were received from numerous sources. Some printed and mimeographed suggestions—few though they were—were gladly made available by the deans of various graduate schools and departments of universities. Many suggestions

¹ The suggestions have been written with the Master's thesis particularly in mind; they are generally applicable, however, to the Bachelor's thesis and to the Doctor's thesis.

PREFACE

were also freely given by several professors and reference librarians of various universities. For the assistance just mentioned the author is greatly indebted. The author is particularly indebted to his former colleague, Professor B. R. Buckingham, whose sympathetic interest, incisive criticisms, and kind suggestions were an invaluable help in preparing the first edition of the book. In preparing this, the revised, edition of the book, much valuable assistance, particularly on editorial matters, was given by Miss Josephine MacLatchy, editorial assistant of the Bureau of Educational Research of Ohio State University, and the author gratefully acknowledges that help. Alfred O. Brown, of the Public School Publishing Company, gave many suggestions for the improvement of Chapter VII, and that help is hereby acknowledged. He is also indebted to his students who, through their requests for information on the methods of research and the technique of writing theses and other scientific papers, have been the inspiration for most of the suggestions. For any errors, heresies, or other shortcomings which the book may contain the author is alone responsible.

COLUMBUS, OHIO

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CHAPTER I

THE NATURE OF THE THESIS

THE THESIS AS A WORK OF SCIENCE, OR OF ART

The thesis as a scientific document.—In all universities of the world, so far as we have been able to ascertain, a thesis is considered to be a report of a research on a given problem or topic. A thesis is, therefore, a scientific document. It is presumed that the author of the thesis stands ready to defend his work with the data which have been collected and organized; indeed, those ^{石印, 新法} data themselves are the best—perhaps they are the only—defense of the thesis. It is presumed also that a thesis, particularly a Doctor's thesis, will be “a contribution to existing knowledge.” This contribution to existing knowledge may be made in one or both of the following ways: (1) by the derivation of a new method or technique, or by the improvement of an old method or technique; (2) by the use of an old method or technique in making a scholarly collection and organization of data on a given problem or

topic. If it be insisted that a thesis, particularly one for the Bachelor's or for the Master's degree, cannot ^[baet(s)la] always be expected to be a contribution to existing knowledge, certainly in all cases it should be expected to be a *scholarly* document worthy of the degree for which it is submitted.

The thesis as a work of art.—The definition of a thesis which has just been given seems to close the door to theses, which, though they might be works of art and might make real contributions, are not scientific documents. For example, the definition apparently closes the door against the student who might create a great novel, an immortal poem, a beautiful painting, a great music-composition, an inspiring architectural design, or a famous work of sculpture, and submit such as a thesis. For universities to close the door to such contributions would be a serious mistake. Instead of closing it, the door should be left wide-open for every type of creative genius—that person in ten thousand or ten million—, and perhaps university requirements for graduate degrees should be reformulated to make it clear to every student that the “latch string is always out” to the creative genius. ^{门门, 占有, 碰锁}

In brief, our universities should encourage in every practicable way all efforts at creative work, and they should never be guilty of formulating requirements which would discourage, stifle, or kill such efforts. Who will say that the artist has made a lesser contribution to civilization than the scientist? A world constituted of all science and no art would be a cold, unfeeling, unlovely, and futile habitat; no one would care to live in that world which would be void of beauty and inspiration.

THE NATURE AND PURPOSE OF RESEARCH

What research is.—An excellent statement of the boundaries, the nature, and the purpose of research and science is found in an inaugural address of a university president; because the statement is helpfully pertinent it is quoted herewith:¹

There exists in the public mind much uncertainty as to the nature and purpose of research. The problem of research is the problem of searching for the truth—of searching for what is 'so,' as the man in the street would probably express it. It is not a search for those fragments of truth which have already been found and are now described in books, more or less scarce, or obscure, but a search

¹ W. W. Campbell, "Universities and the Truth," *School and Society*, XX (September 6, 1924), pp. 294-295.

for existing truth which has not yet been found by anybody. A professor engaging in research work is looking for something that already exists. He does not invent the truth, he does not develop the truth, he does not do anything whatever to the truth except to uncover it or discover it, and expose it to the comprehension of his fellowmen. . . .

We must guard against a too narrow use of the words 'research' and 'science.' When a scientist is spoken of, most people have the chemist or biologist or astronomer or the modern farmer in mind. The chances are that they will leave out the student of Greek or of the history of religions; and that is frequently a mistake. A classical scholar who devotes himself seriously to the study of the evolution of the Latin language, or who searches for the forces which produced the wonderful Greek civilization, and for the other forces which later operated to destroy it, is as truly a scientist as he who studies X-rays or the decomposition of radium. If a professor of history endeavors to trace the effects of the continuous working of ethnic, economic, climatic, religious, and other forces upon the development of nations and civilizations, he is a real scientist. A scientist is one who studies any subject with due and impartial regard to the facts, and always with reference to cause and effect.

What research is not.—There is, of course, much waste, sham, and pretense in our efforts at research. Probably only a small percentage of the research endeavors of our scholars advances human progress; but, the small per-

centage which does advance human progress more than pays the way of the valueless research. If space permitted, and if we were not afraid of being trite, we could discuss at length ^{研究} the importance of research in a progressing civilization. A trenchant ^{有力} plea for more valuable research, together with an ^{攻击} attack on so-called research, which in fact is *not* research, is made in a recent editorial of the *School of Education Record, of the University of North Dakota*; that statement follows:¹

We have heard much during the last few years of what is called 'research.' True and genuine research is one of the finest performances of human intelligence and ingenuity. But 99 percent of the so-called 'research' in both undergraduate and graduate work is far from *research*: indeed, much of it is a veritable 'idol of the theatre.' The work of ^{为符其名} some men is genuine research; but where you find one such piece of work you will find thousands and thousands of mediocre students who are kept busy collecting and collating, in small pattering ways and sometimes with the scissors, work that is passed off and palmed off in ponderous theses as research. It would remind one of Carlyle's saying that 'some people are noted for fussy littleness and an infinite deal of nothing.' Professors set students to collecting data that might be gathered by an eighth-grade pupil and call it research.

¹ Quoted from *Educational Research Bulletin*, V (October 6, 1926), p. 302.

The result is only what is of common knowledge and in most cases it leads nowhere. As someone has aptly said of such research, 'It is trying to find out for the hundredth time what everybody knows and then expressing it in language which nobody understands.' Much of the so-called research work is absolute inflation, and the theses embodying it very soon find their place on musty and dusty shelves to be heard of no more.

One often wonders if there is not so much pretension and inflation in the whole modern educational world that there is very likely to be a 'blow-out' in the near future: it would suggest the truth of Æsop's fable of the frog. Nearly every institution and every department seems to be 'playing' research in order to exploit itself in a public and advertising way: they must know that much of it is only a game.

I know that when one strikes at one extreme he is likely to be accused of the other extreme by those who are unable to think straight, to infer sanely, and to interpret justly. It is only the sham work that I am hitting—there is nothing finer than genuine research and artistic expression and formulation.

There is now a woeful and lamentable amount of this sham work in the academic world. There is so much froth and foam and so little body, so much chaff and so little wheat, so much verbiage and so little that is new, so much 'hot air' and so few refreshing breezes, so much pretension and so little realization, so much mere propaganda, personal, departmental, and social, that it is not surprising that the keen practical man in the world of deeds looks upon it all as merely academic and visionary.

MAIN CHARACTERISTICS OF SCIENTIFIC DOCUMENTS

If it is to be a scientific document, and most universities require that it shall be such, the thesis should bear the earmarks of such documents. Among the most characteristic of those earmarks are the following:

Accuracy.—Because of the harm which it may do in disseminating erroneous information, an investigation which is not accurate is worse than no investigation—in fact, such an investigation is unforgiveable. It is worth emphasizing that all statistical data of the thesis should be collected, organized, and reported with meticulous care. It is a good plan ~~to check and to recheck~~ all statistical data of the investigation until the author has complete confidence in their accuracy. An adoption of the plan just mentioned will save an author many embarrassments in having to apologize for any inaccuracies when they have been brought to light by other more careful workers. Moreover, all names, titles, and similar information should be exactly correct, because it is possible for an author to be inaccurate in matters other than the use of statistical data.

Typists and compositors, who type or set up the manuscript, are human and they therefore have the human propensity for making errors; their work, therefore, should be carefully checked. An author is responsible for supervising and checking the work of all his agents; any errors which they make and which he does not correct, will be charged against him. An author's reputation as a scholar depends very largely on the carefulness with which his work is done. It is impossible to secure and to maintain an enviable reputation as a scholar when inaccurate work is produced. It is better not to have a reputation than to have a *bad* reputation; a bad reputation is more difficult to live down than a good reputation is to acquire.

Objectivity.—The thesis should be objective, not subjective, in its method; that is, real facts and verifiable evidence (objective data) must buttress the document, and not merely the unsupported opinion (subjective data) of the writer. Subjective statements such as "I believe that was the cause and this is the result" should usually be avoided in a thesis. For the establishment of any point, only objective data can be relied upon. If the author's opinions are given, they should either be supported with

data collected in the investigation of the thesis problem, or the reader should be cited to other investigations which substantiate the opinions expressed. It is well to keep in mind that facts and evidence can solve, or help to solve, problems, but mere opinion can never solve them. However, on many topics at present,—perhaps on some topics it will always be thus—only opinion can be secured as evidence; in such instances, opinion—particularly the opinion of several qualified persons—may be used as evidence, but it should not be used as conclusive evidence; someone has aptly said that “the ignorance of many is of less value than the intelligence of a few.” Most theses, particularly when first submitted for professorial criticism, have as one of their greatest shortcomings the violation of the principle of objectivity. *公正.*

Impartiality.—An author should not permit any prejudices, feelings, and preconceived notions about the thesis problem to vitiate his work on the problem. He should not start out to prove that a certain theory is the *correct* theory, but should start out to find, and be interested only and always in finding, the *truth*. Only the truth is wanted, and it should be as-

siduously and impartially sought and recorded however much against the author's feelings, personal interests, or anything else it may be. If there are two or more sides to the question being investigated—and there frequently are—the author should be fair to all sides. The aim should be to discover and report “the truth, and nothing but the truth.” St. Paul's admonition, “Prove all things, hold fast that which is good,” is another way to express the aim which should always guide the scientist. This penchant for the truth is the guiding aim of all true scientists, all other aims being corollary and secondary to it.

抄錄 **Verification.**—The investigation should be so reported that, if desired, it may be readily duplicated and verified by some other person. Therefore, the method of attack employed, the sources of data used, and other aspects of the investigation, should be carefully indicated. Frequently, those data of minor import, which, if presented in the thesis would tend to clutter it, may well be filed somewhere, say, in the university library where they would be readily available, if needed, to other investigators.

易讀, 易懂, 有趣味 **Readability.**—Although it may be most excellent, research which is not read will not af-