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An Investigation of Relationships Between the Educational Background of Two-Year College Geography Instructors and the Geographical Topics Which They Teach

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This thesis, directed and approved by the candidate's committee, has been accepted by the Graduate Committee of The University of New Mexico in partial fulfillment of the requirements for the degree of

Master of Arts in Secondary Education

AN INVESTIGATION OF RELATIONSHIPS BETWEEN THE EDUCATIONAL BACKGROUND OF TWO-YEAR COLLEGE GEOGRAPHY INSTRUCTORS AND THE GEOGRAPHICAL TOPICS WHICH THEY TEACH

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BY

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B.A., University of New Mexico, 1972

THESIS

Submitted in Partial Fulfillment of the
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Albuquerque, New Mexico

May, 1974

With love and admiration
to my grandfather, Boris,
who will never know.

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ABSTRACT

AN INVESTIGATION OF RELATIONSHIPS BETWEEN THE EDUCATIONAL BACKGROUND OF TWO-YEAR COLLEGE GEOGRAPHY INSTRUCTORS AND THE GEOGRAPHICAL TOPICS WHICH THEY TEACH

The purpose of the study was to determine the relationships between two-year college geography and non-geography majors in their use of selected topics in three introductory geography courses.

One-hundred and forty-five instructors participated in the study from two-year colleges in a five state area: California, Illinois, New York, Pennsylvania and Texas.

The hypothesis of the study was that significant differences would occur in the time spent on geographical topics in introductory physical, cultural and world regional geography courses by two-year college geography and non-geography majors.

The instrumentation used in the study was a questionnaire divided into three parts. Part one concentrated on the general background of two-year college geography instructors. Part two surveyed the general education of the instructors. Part three listed twenty-eight geographical topics for the instructors to answer on the basis of how many class periods per semester they used each of those topics.

The one-hundred and forty-five returns made-up 56.42% of the total number of questionnaires mailed. Eleven of the returns were unanswered, which left a total of one-hundred

and thirty-four returns for analysis. The percentage of response for use was 52.14% and included the one-hundred and thirty-four instructors whose replies would be used. Seventy-nine respondents were geography majors while fifty-five were non-geography majors. The geography majors taught two-hundred and two courses, of which fifty-six were introductory physical geography, thirty-three were introductory cultural geography and twenty-seven were world regional geography courses. The eighty-six remaining courses were not applicable to the study, due to the course titles not directly relating to the three courses involved. Non-geography majors taught seventy-five courses, of which thirty-three taught introductory physical geography, fourteen taught introductory cultural geography and eleven taught introductory world regional geography courses. Seventeen course titles were not applicable to the study.

The chi-square test was applied to the data supplied by the one-hundred and thirty-four respondents. The results showed, with few exceptions, that there were no significant differences noted in the way introductory physical, cultural and world regional geography courses were taught by geography and non-geography majors in the two-year colleges.

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CHAPTER I

INTRODUCTION

Background. In 1970, one of the most complete studies of geography's role in the two-year college was undertaken by the Association of American Geographers. The study resulted in the publication of Geography in the Two-Year Colleges. The role of geography in the two-year college was discussed with a profile of courses taught in geography and a profile of geography teachers. In addition, there was discussion of student needs, trends and themes in course content and instructional needs. In the profile of geography teachers, the study concentrated on the ratio between the full-time and part-time teachers. The study also presented highest and lowest degrees earned by the two-year college instructors, and their major and minor field of study while attending a university.

Other studies were conducted on specific interests related to geography's role in the two-year colleges and the status of the teachers. For example, some studies concentrated on the various geography courses offered in the two-year colleges and/or the student enrollment in these geography courses, while other studies concentrated on the educational background of two-year college geography teachers.

The problem. None of the studies mentioned above looked at the possible relationship between geography majors and

geography non-majors in their time spent on topics in the teaching of geography as a possible determinate of the quality of geography being taught in the classroom.

The investigator feels that there is a relationship between geographic training and the way in which geographic topics are taught.

The purpose of the study. The purpose of the study is to go a step further than the Association of American Geographers and other studies have done in their studies of two-year college geography teachers. The investigation will determine the relationship of the average use of time spent on certain selected geographic topics in three introductory geography courses in the two-year college by geography majors compared with non-geography majors. The survey was concerned with the highest degree attained by the two-year college instructors in their established major field of study, and their time spent on geographical topics in the classroom.

Hypothesis.

1. There are no significant relationships between geography majors and non-geography majors in their time spent on topics in a two-year college introductory physical geography course.
2. There are no significant relationships between geography majors and non-geography majors in their time spent on topics in a two-year college introductory cultural geography course.
3. There are no significant relationships between geography majors and non-geography majors in their

time spent on topics in a two-year college introductory world regional geography course.

Definition of terms.

Two-Year College. A two-year post high school institution "that varies widely as to its sponsorships, aims and range of educational services it provides."[1] The institution may have the purpose of preparing students to transfer to four-year institutions or it may be multipurpose, such as by offering college transfer, terminal and technical/vocational courses.

Geography. Geography is the "science of place."[2] It concerns the relationship of man with the surrounding complex environment of people, soil, climate, water, air, etc. All these are distributed throughout the earth, and they vary accordingly from place to place, and also from time to time.

Geographic topics. A geographic topic is a heading in an outline which comprises a geography course such as the study of landforms and/or climates in physical geography.

Introductory courses in geography. Introductory courses are designed to introduce the student to the field. In two-year colleges, there are at least three types of introductory courses, namely, physical geography, cultural geography and world regional geography.

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[1]"Geography in the Two-Year Colleges" Association of American Geographers (1970), p. 2.

[2]Glen T. Trewartha, Fundamentals of Physical Geography (New York, 1968), p. 9.

1. Physical geography: The study and unification of a number of earth sciences which give the student an insight into the nature of his environment, for example, landforms, soils, climates, etc.
2. Cultural geography (also known as human geography): The study of peoples and their origin, location, growth, behavior, work and economic situation. It is concerned with the past as much as with the present. All of the above is in relation to the physical setting in which man lives.
3. World regional geography: The study of world patterns, divided into selected regions, for example, Africa, providing a summary of all geographical processes. The main purpose of world regional geography is to stress regionality, for example, Anglo America, Latin America, etc.

Qualified instructors. Qualified instructors are those who graduate from a university, preferably with a masters degree and with a certain degree of exposure to the field that they are to teach. Qualifications vary from state to state, for example, the state of Arizona requires the minimum of a masters degree and sixty credit hours in the subject field,[3] while some states have no special requirements for two-year college teachers.[4]

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[3]Mildred R. Noble, Coordinator, Maricopa County Community College District (Phoenix, Arizona), letter, 1973.

[4]Tyrus Hillway, The American Two-Year College (New York, 1958), p. 185.

Delimitations of the study. The study was not concerned with the curriculum of the geography and social studies department in the two-year colleges involved. In addition, the study was not concerned with the manner in which geography courses were organized and offered in the two-year colleges involved. Also, student performance was not considered in any way, since the study was concerned with determining the relationship between the instructor's academic preparation and the topics he is teaching. Strictly speaking then, the study was not concerned with the quality of geography taught in the two-year college.

It is also necessary to emphasize that only two-year colleges offering geography were to be surveyed for the study. Therefore, only a certain percentage of the total number of two-year colleges was considered, with total disregard for those institutions that did not offer geography.

Furthermore, the study did not deal in any great depth with the comprehensive training and/or experience of the two-year college instructor, since the primary concern was his training in geography only, and the way he applied his training in the classroom.

Finally, only those courses that were designated as geography were considered in the study, and not those courses that may have contained geographic concepts, but were designated under a discipline other than geography.

Limitations of the study. The investigator was aware of the many limitations in a questionnaire study. For exam-

ple, not all respondents interpret a question in the same manner, and some respondents are more conscientious about their responses than other respondents. No claim is made that the five selected states of necessity are representative of two-year colleges in the remaining forty-five states or similar institutions in other countries.

Organization of the remainder of the study. Chapter II is a review of pertinent literature.

Chapter III explains the design of the study, from the population description to the plan for analysis.

Chapter IV is a detailed analysis of the results of the study.

The final chapter is a summary with conclusions and with recommendations based on the findings of the study.

Following the final chapter a section designated as APPENDIX is provided of the different percentage tables and sample questionnaire, in addition to other pertinent information for the reader's benefit.

CHAPTER II

REVIEW OF THE LITERATURE

Literature related to the study was thought to involve the following categories:

A. Literature on Pertinent Publications About Geography in the Two-Year Colleges.

B. Literature Related to the Educational Background of Two-Year College Instructors.

Literature on Pertinent Publications About Geography in the Two-Year Colleges

Limited research has been done on geography's position in the two-year college. One publication relating to geography's position in the two-year college was undertaken by the Association of American Geographers Commission on College Geography. The publication, namely, Geography in the Two-Year Colleges, was divided into five parts:

1. Introduction: The introduction section concentrated on the characteristics and importance of the two-year college in American education. It described the two-year college as an institution that offers its students alternatives to education, whether terminal or transfer. In addition to the above, the section described the position of geography within the community, explaining the image it holds among students, the challenge that it is faced with

and its role in general education.

2. Survey of geography in two-year colleges: The survey was divided into three parts: a) representation of geography in the two-year colleges, b) profile of courses taught in geography, and c) a profile of the geography teachers.

a) In the representation section, all of the institutions offering geography were selected and then the survey reports were divided by regions of the nation and discussed, for example, the southeast.

b) In the profile of courses taught, the commission described those offered by two-year colleges and came up with five types consistently found in the two-year college curriculum: physical, world regional, economic, cultural and introduction to geography. The commission pointed out that the courses offered are found in four year universities as freshman or sophomore level courses.

c) In the profile of geography teachers, the survey showed the ratio between full-time and part-time instructors. In addition, the instructor's teaching load in geography compared with other fields was divided by regions of the country. The survey also showed the highest and lowest degrees earned by the teacher, and his major and minor field of study while attending a university. The statistics were also divided by regions of the country.

3. Introductory courses in two-year colleges: The section concentrated on the terminal student and the satisfying of his needs, which are not the same as the needs of the transfer student. In addition, the section concentrated on the trends and themes in course content in the four most common geography courses taught in the two-year college. The courses included physical, world regional, cultural and economic geography.

4. Instructional needs: The section concentrated on the minimum qualifications a two-year college geography instructor should have, from his first to his last geography course so as to meet the requirements to teach geography satisfactorily in the two-year college. The section also explained that the teacher should not only be acquainted with the field, but also with techniques of teaching it. Therefore, it is necessary for education courses to be included in his studies. Some of the courses should be devised to prepare the future instructor to use classroom equipment and certain library texts he may need.

5. Summary and recommendations: The section brings the report to a close by giving fourteen recommendations that might help to improve the position of geography in the nation's two-year colleges. As a result, the geography courses may become more interesting to the student, and thereby allow geography's position in education to become more popular than it present-

ly is. The shorter articles available limited their studies to specific roles of geography instructors in the two-year colleges. For example, Senninger stated in his article on the status of geography in the public two-year colleges of Michigan, that they are a very important part of Michigan's higher educational institutions, because in 1958 there were twenty-four publicly supported institutions and fifteen of them were two-year colleges. In addition, there were a possible twenty more two-year colleges that had been surveyed for a study done by Martorana, entitled, The Community College in Michigan.

Senninger, furthermore, gave data on course offerings, geography class enrollment and instructor training and experience. In the later, he found that some of the instructors were not adequately trained to teach geography. Seven out of eighteen instructors had a major either in geology, history, business administration, elementary education or social studies. The remaining had majors in geography. Two out of eighteen had their doctorate while eleven had received their graduate training in various Michigan universities. The teaching experience of the instructors varied from one to thirty-six years.

In conclusion, Senninger first emphasized that geographers need to realize the importance of two-

year colleges, and then he gave five suggestions that might help to improve the present situation of geography in the nation's two-year colleges.

A second relevant article was one by Koch, entitled, Geography Programs in the Junior Colleges. Koch observed that Alabama's two-year colleges are not able to find academically competent instructors, and that the present instructors holding teaching positions are trained in general education and, as a result, are combining several disciplines into the social and general sciences. He noted that the main reason Alabama's two-year colleges did not offer as much geography was because there were no adequately trained teachers available to teach geography. Out of a total of thirty-nine geography courses taught in the two-year colleges throughout Alabama, three faculty members had graduate degrees in geography. At least seven instructors had no college work at all in geography. Koch concluded that "if quality of instruction can be directly related to academic preparation, then the quality of geography instruction in the two-year colleges cannot be good."[5]

A third example was an article written by

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[5]Walter F. Koch, "Geography Programs in the Junior Colleges," Journal of Geography, LXVIII (March, 1969), 154-155.

Murton, entitled, The Preparation of Junior and Community College Geography Instructors. Murton wrote about his experiences rather than through a series of data collection. He mentioned that the situation in two-year colleges is poor because of the increasing enrollments and the shortage of qualified teachers available to fill opened positions. In addition, Murton was concerned with the quality of instructors rather than the quantity of them.

Literature Related to the Educational Background of Two-Year College Instructors

A proper educational background for two-year college teachers is most important so that they can teach a certain subject in a manner that will be most beneficial to the student. Teachers that are only half trained not only hurt the student, but they waste valuable time.[6] Cooper pointed out that:

> Teachers with a masters degree seem to have at least two qualities in common: A capacity to motivate the student, and an ability to maturate the student so that he is no longer dependent upon the professor's prodding.[7]

Cooper suggests that an instructor must have at least a masters degree to teach effectively in a two-year college. Then again, there are people with more cautious views as to

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[6]Russell M. Cooper, "The College Teaching Crisis," Journal of Higher Education, XXXV (January, 1964), 7.

[7]Cooper, p. 7.

what the proper educational background should be for two-year college instructors. In regards to the latter view, Murton feels that, "the demand for instructors cannot be satisfied by prospective instructors with a bachelors or masters degree who just happen to find themselves, accidentally, in a two-year college setting."[8] Murton also felt that there is a shortage of well qualified two-year college teachers, as well, in many fields other than geography.

Koch agreed with Murton by claiming in his study that the state of Alabama is not able to find academically competent teachers.[9] He felt that was one reason why Alabama's two-year colleges have a poorly developed geographical curriculum. Koch added that two-year colleges seem to be hiring instructors who are trained in general education and thus combine several disciplines into the social and general sciences.[10]

Kramer agreed with Koch when he discovered, through his study, that out of fifty-four instructors teaching geography in thirty-four two-year colleges in California, only fourteen had advanced degrees in geography. Three had bachelors degrees with a major in geography, and five had geography as a minor. Some instructors had majored in such fields as aeronautics, English or psychology, while some

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[8]Curtis S. Murton, Jr., "The Preparation of Junior and Community College Geography Instructors," Journal of Geography, LXVII (March, 1968), 156-160.

[9]Koch, p. 154.

[10]Ibid.

had no formal course training in geography at all.[11]

In a study undertaken by Carthew, at an earlier date, it was discovered that fifteen out of sixty-one instructors teaching geography in California two-year colleges, majored in geography, while the rest majored in history, economics, geology and other fields.[12] Carthew added, that although the non-geographers were doing a fine job in teaching geography, they were not presenting it in the most effective manner.[13]

In other studies, similar results were found, such as in Senninger's study. He discovered, through his study of Michigan's two-year colleges, that only eleven out of eighteen instructors had graduate majors in geography, while the rest had majored in geology, history, business administration, elementary education or social studies.[14]

Richason, although not giving specific numbers, ascertained that the bulk of geography instructors in this country's two-year colleges reported that their majors, while in college, were in fields such as history, economics, education and business administration. Richason added that some schools reported that a few of their geography instruc-

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[11]Fritz L. Kramer, "Geography in California Junior Colleges," Journal of Geography, LV (October, 1956), 347-348.

[12]Arthur Carthew, "Geography in California Junior Colleges," Junior College Journal, XIX (January, 1949), 246-247.

[13]Carthew, p. 247.

[14]Earl J. Senninger, Jr., "The Status of Geography in Public Junior Colleges of Michigan," Journal of Geography, LIX (February, 1960), 69.

tors held degrees in unrelated fields, such as secretarial training, accounting and physical education.[15]

All the preceding articles show that a high percentage of two-year college geography instructors do not hold a degree with a major in geography. This may be because the majority of two-year colleges have a limited number of available geography courses,[16] and most instructors have to teach two or more subjects[17] in order to maintain full-time status in the two-year college; otherwise, they may have to teach part-time in a two-year college in addition to teaching in a high school.[18]

Thus, it is important to see that instructors in two-year colleges are generally and properly prepared for teaching a specific field, such as geography. It is also important to allow for additional new courses in specific fields, such as geography, in the two-year colleges.

Hillway wrote that in order for teachers to be successful in two-year colleges, they should have seven characteristics. He cited "adequate professional training"[19] as one of them.

Thornton went a step further by suggesting that "a two-

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[15]Benjamin F. Richason, Jr., "Geography in the Junior Colleges of the United States," Journal of Geography, L (September, 1951), 254.

[16]Richason, p. 251.

[17]Carthew, p. 247.

[18]Leonard V. Koos, "Junior College Teachers: Subjects Taught and Specialized Preparation," Junior College Journal, XVIII (December, 1947), 197.

[19]Hillway, p. 186

year college instructor should have a minimum of a masters degree in a particular field."[20]

Summary of the review of the literature. The literature reviewed in this chapter indicates that limited research has been done where two-year college geography is concerned in this country. The first part of chapter two indicated that studies done in two-year college geography have been mere descriptions of their status. They described course offerings, enrollments, instructor training and experience, and which two-year colleges offer geography.

The second part of the review indicated that adequate educational preparation of two-year college geography instructors is necessary. A minimum of a masters degree and preparation for teaching a specific geographical field is a must for an instructor in the two-year college.

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[20] James W. Thornton, Jr., The Community Junior College (New York, 1960), p. 142.

CHAPTER III

DESIGN OF THE STUDY

Population

For the study of time-educational background relationship, the investigator chose two-year college instructors who teach geography in five states leading in two-year colleges, which are: California with one-hundred and nine, followed by Texas with fifty-eight, Illinois with fifty-seven, New York with fifty-five and Pennsylvania with fifty-one.[21] Following the five leading states were Michigan with thirty-four, Ohio with thirty-four, Massachusetts with thirty-three, Florida with thirty and North Carolina with twenty-nine.[22] In addition, there were at least two two-year colleges in each of the remaining states not listed above.[23]

Instrumentation

The questionnaire was designed in three parts (see Appendix H for final copy).

1. General information: The section asked for the two-year college instructor's experience and personal background. Such information allowed the investigator to gather information that gave the profile of

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[21]William R. Graham, Barron's Guide to the Two-Year Colleges (New York, 1972), pp. 14-19.

[22]Ibid.

[23]Ibid.

the instructors teaching geography in the two-year college.

2. General education: Part two asked the two-year college instructor for the approximate number of credit hours he or she had attained while in his or her college career and in every field taken. The section allowed the investigator to examine the general educational background for each instructor during his educational career.
3. Topic usage in the classroom: The section gave the instructor twenty-eight different topics (see Appendix H) most likely to be used in the three most commonly found introductory courses in geography in the two-year college. After giving the instructor three spaces to fill in the name(s) of the course(s) he teaches, he was then asked to proceed and give, to the best of his knowledge, the probable number of class periods he or she may be spending on those topics in the classroom. The instructor was given up to five possible class periods for each topic. Under each topic a number of examples of probable subtopics were given. These subtopics were available as an example to the instructor for the purpose of giving him an idea as to what each topic might contain, as well as a possible example of what his class lectures might concentrate upon.

A questionnaire was designed originally in much the same manner as the one mentioned above (see Appendix G for sample

of original questionnaire). A major difference was that part three of the questionnaire referred to concepts rather than topics, as was the case in the final draft. Furthermore, instead of presenting the two-year college instructor with twenty concepts, the instructor was presented with twenty-eight topics. Later in the chapter, under comments by jury members about the study and questionnaire, the reader is presented with the reasons for the changes made in part three of the questionnaire.

Steps and Procedures

As a preliminary step, twelve major geographical and educational associations (see Appendix A) were contacted for the purpose of obtaining information on any studies undertaken in regards to the following: a) The total number of hours and titles of all educational courses taken by two-year college geography teachers and, b) the total number of semester or quarter hours (including course titles) taken in geography only, by two-year college geography teachers.

Secondly, in order to compile an accurate account of two-year college geography instructors, a letter was sent to three-hundred and thirty-one two-year college presidents. The names of the two-year colleges were obtained from the 1972 Barron's Guide to the Two-Year Colleges.[24]

The presidents were asked to send the name(s) and ad-

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[24]Graham, pp. 14-19.

dress(es) of the instructor(s) at his institution in charge of teaching geography courses, and if he was sending several names, to please designate the headman or chairman of the group. The presidents were also asked to send a school catalogue, if available (to be used in determining how many geography courses were taught in their particular institution).

Upon receipt of feedback from the questions asked of the various two-year college presidents, a questionnaire was mailed to the geography instructors whose names were received by the investigator from the various two-year college presidents. Of those instructors who failed to respond by a designated time (approximately three weeks) a follow-up letter was sent to them. A second follow-up letter was sent three weeks after the first follow-up if a response had still not been received. Previous to mailing the questionnaire to the instructors of the two-year colleges, a sample of the questionnaire was sent to a selected number of jurors (see Appendix E). The jurors were selected by the researcher among universities outside the five states of the study for the purpose of obtaining their comments and suggestions in order to perfect the questionnaire by making necessary changes.

Responses from the Geographical and Educational Associations

None of the geographical or educational associations were able to furnish information related to the study. The National Council for Geographic Education and the Associa-

tion of American Geographers felt that the closest publication that could help in the study was the Association of American Geographers, Commission on College Geography, publication number 10, entitled, Geography in the Two-Year Colleges. A summary of that study was reviewed earlier in chapter two under review of the literature of the study.

Comments by Jury Members About the Study and Questionnaire

Twenty-four geography professors in the United States were selected as jurors and were asked to comment on the content, format and approach of the questionnaire, and the rational and statistical approach for treatment of the response. Fourteen replied with various comments. Most of the comments seemed to center upon two major points: a) The definition of concept was not correct, and, b) some examples of concepts used in the questionnaire (see Appendix G) were outmoded and the list of concepts was incomplete.

The investigator originally referred to concepts instead of topics, primarily because of Quillen and Hanna's definition of concept as, "a general idea which represents a class or group of things or actions having certain characteristics in common."[25] A chapter heading, in the investigator's opinion, applied to the above definition. Since the actual approach to the investigation has not been hampered, whether

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[25]I.J. Quillen and L.A. Hanna, Education for Social Competence (Chicago, 1961), pp. 187-188.

the use of chapter headings are considered concepts or topics in the questionnaire, the change was made for the chapter headings to be considered topics. However, the reader will notice that in the final draft of the questionnaire, the instructor has been given space to check whether he considers each choice as a concept or topic.

Other comments given by the jurors were considered minor. The minor comments involved wording of questions and the order in which questions were asked, which could have been changed to allow the instructor to answer and understand the questionnaire with greater ease. Those who read the study will notice the changes made as they compare the original (Appendix G) with the final draft of the questionnaire (Appendix H).

Data Collection

Collection of the data began on June 12, 1973, when names and addresses of instructors from various institutions teaching geography courses, were gathered from the two-year college presidents of the institutions selected.

February 1, 1974, was the deadline set for instructors to return the questionnaires, including those instructors who were sent a follow-up letter reminding them to answer and return the questionnaire as soon as possible.

CHAPTER IV

RESULTS

Introduction

The chapter includes the statistical treatment and plan of analysis employed and a description of the initial data collected. A profile of the returned questionnaires is shown.

The treatment of the data is given and an analysis is presented to determine whether there are any significant differences between the time spent on topics in the classroom by geography majors and non-geography majors teaching introductory courses in physical, cultural and world regional geography in two-year colleges.

Statistical Treatment

The statistical program used for this study was done on the General Electric Terminet 300 at the University of New Mexico Computer Center. The program went under the name of Statpack. Statpack is a package consisting of a number of different statistical programs available for use.

Plan of Analysis

The chi-square test (x^2) was used to analyze the data. The chi-square test is based on, "a measure of the discrepancy existing between observed and expected frequencies."[26]

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[26]Murray R. Spiegel, Statistics (New York, 1961), p. 201.

Statistics not analyzed by the chi-square were done by hand by the investigator.

Results of Initial Data Collection

Out of the possible three-hundred and thirty-one college presidents originally contacted, two-hundred and sixty-two responses were reveived. One-hundred and eighty of the two-hundred and sixty-two institutions offered geography in their curriculum while seventy-six two-year colleges did not have a course entitled geography. Six of the investigator's inquiries were returned for various reasons, such as "insufficient address," "moved," not forwardable and "return to sender, address unknown." Although unsuccessful, the investigator tried to find new addresses or other possible addresses for those six institutions.

Two-hundred and fifty-seven names of instructors teaching geography were received from the one-hundred and eighty two-year colleges that offered geography. One-hundred and forty-five of the two-hundred and fifty-seven instructors returned the questionnaire. The total of one-hundred and forty-five includes the answers received after follow-up letters were sent.

Profile of the Questionnaires Returned

Of the one-hundred and forty-five questionnaires returned, eleven were returned unanswered, while one-hundred and thirty-four were used for statistical purposes. Seventy-nine out of the one-hundred and thirty-four respondents were geography majors, while fifty-five respondents were non-

TABLE I

RESPONSES OF TWO-YEAR COLLEGE PRESIDENTS
BY STATE

	Total Questionnaires Mailed	Total Responses	Percentage
Total	331	262	79.15%
California	109	96	88.07%
Texas	58	39	67.24%
Illinois	57	46	80.70%
Pennsylvania	52	36	69.23%
New York	55	45	81.81%

TABLE II

NUMBER OF USABLE RESPONSES FROM TOTAL RESPONSES
BY STATE

	Total	Two-Year Colleges Offering Geography	Percentage from Total	Not Offering Geography	Percentage from Total	Returned With No Response	Percentage from Total
Total	262	180	68.70%	76	29.00%	6	2.29%
California	96	80	83.33%	14	14.58%	2	2.08%
Texas	39	29	74.35%	10	25.64%	0	0.00%
Illinois	46	36	78.26%	9	25.00%	1	2.17%
Pennsylvania	36	22	61.11%	13	36.11%	1	2.77%
New York	45	13	28.88%	30	66.66%	2	4.44%

TABLE III

PERCENTAGE OF RESPONSES
BY STATE

	Total of State	Total Responses	Percentage of Total Responses by State
California	96	262	36.64%
Texas	39	262	14.88%
Illinois	46	262	17.55%
Pennsylvania	36	262	13.74%
New York	45	262	17.17%

TABLE IV

MEAN NUMBER OF TWO-YEAR COLLEGE GEOGRAPHY INSTRUCTORS FOR EACH STATE

	Total Instructors	Total Two-Year Colleges	Mean
Total	257	180	1.42
California	138	80	1.72
Texas	32	29	1.10
Illinois	49	36	1.36
Pennsylvania	23	22	1.04
New York	15	13	1.15

TABLE V

NUMBER OF QUESTIONNAIRES RETURNED

	Number of Questionnaires Mailed	Number of Questionnaires Returned	Percentage Returned
Total	257	145	56.42%
California	139	77	55.39%
Texas	32	19	59.37%
Illinois	49	29	59.18%
Pennsylvania	22	12	54.54%
New York	15	8	53.33%

geography majors. Twenty out of the fifty-five returns were geology majors, seventeen were history majors, five were education majors, two were education administration majors, and one each were spanish, biology, zoology, social science, political science, economics, meteorology, general curriculum, earth science, mining engineering and anthropology majors.

TABLE VI

NUMBER OF QUESTIONNAIRES USED AND UNUSED IN THE STUDY

Total	Used	Unused	Percentage
145	134	11	92.41%

Treatment of the Data

The one-hundred and thirty-four instructors that returned and answered the questionnaires replied with two-hundred and seventy-seven course titles they taught in the fall semester of 1973. Eighty-nine of the two-hundred and seventy-seven courses were designated as introductory physical geography, forty-seven as introductory cultural or human geography, thirty-eight as world regional geography and one-hundred and three various other titles that were not applicable, and, therefore, not usable in the study. Fifty-six of the eighty-nine introductory physical geography courses were taught by geography majors, while thirty-three were taught by non-geography majors. Thirty-three of the forty-seven that taught cultural or human geography at the

TABLE VII

TOTAL NUMBER OF GEOGRAPHY AND
NON-GEOGRAPHY MAJORS PER STATE

	Total	California	Texas	Illinois	Pennsylvania	New York
Total of geography and non-geography majors	134	73	17	27	9	8
Total geography majors only	79	47	5	18	5	4
Total non-geography majors only	55	26	12	9	4	4

introductory level were geography majors, while fourteen were non-geography majors. Twenty-seven of the thirty-eight that taught world regional courses were geography majors, while eleven were non-geography majors.

TABLE VIII

PROFILE OF COURSES TAUGHT

	Total Number of Courses	Physical	Cultural	World Regional	Not Applicable
All instructors	277	89	47	38	103
Geography majors	202	56	33	27	86
Non-geography majors	75	33	14	11	17

One-hundred and three out of the two-hundred and seventy-seven courses given by the instructors were not used because the titles did not apply to the study. Some courses fell under geography, but their content did not directly relate to the three courses mentioned in Table VIII, for example, urban geography, weather and climate, economic geography, geography of California, and others.

Following, there are six tables describing the time spent on twenty-eight topics found in part three of the questionnaire by the number of class hours the instructors spent on each particular topic. For example, in Table IX, one instructor spent zero class periods on topic number one

(see questionnaire in Appendix H). Five instructors spent one class period, thirteen spent two class periods, twelve spent three periods, eleven spent four periods and fourteen instructors spent five or more class periods on topic number one. Therefore, Table IX shows geography majors time spent on introductory physical geography courses. Table X shows non-geography majors time spent on introductory geography courses. Table XI shows geography majors time spent on introductory cultural or human geography courses. Table XII shows non-geography majors time spent on cultural or human geography courses. Table XIII shows geography majors time spent on world regional courses and Table XIV shows non-geography majors time spent on world regional courses.

Tables IX through XIV show the observed frequencies of each topic in each of the three types of courses, and the amount of class time usage by geography majors and non-geography majors. If the raw statistics were to be used as shown in Tables IX through XIV, the theoretical frequency in some cells may be smaller than five. According to Arkin, the theoretical frequency in each cell should be a minimum of five for accurate analysis.[27] If some cells have a value of less than five, then it may be possible to raise the value by combining groups (columns or rows) until a sufficiently large theoretical frequency is secured."[28]

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[27]Herbert Arkin, Statistical Methods (New York, 1970), p. 140.

[28]Ibid.

TABLE IX

TIME SPENT ON TOPICS IN PHYSICAL GEOGRAPHY BY GEOGRAPHY MAJORS IN TWO-YEAR COLLEGES

	Number of Class Periods					
	0	1	2	3	4	5
Topic #1	1	5	13	12	11	14
Topic #2	9	31	10	4	1	1
Topic #3	3	10	12	14	6	11
Topic #4	1	0	5	4	5	41
Topic #5	1	10	5	11	6	23
Topic #6	2	6	8	11	4	25
Topic #7	6	11	11	9	3	16
Topic #8	1	5	10	7	5	28
Topic #9	6	21	13	8	4	4
Topic #10	3	21	10	14	3	5
Topic #11	29	17	6	3	1	0
Topic #12	50	4	2	0	0	0
Topic #13	35	14	3	1	2	1
Topic #14	36	13	3	2	2	0
Topic #15	48	4	3	0	0	1
Topic #16	50	4	1	0	1	0
Topic #17	42	9	2	2	0	1
Topic #18	53	3	0	0	0	0
Topic #19	50	3	2	0	0	1
Topic #20	50	6	0	0	0	0
Topic #21	38	13	2	1	1	1

TABLE IX - CONTINUED

	Number of Class Periods					
	0	1	2	3	4	5
Topic #22	53	2	1	0	0	0
Topic #23	50	4	0	0	0	2
Topic #24	53	2	1	0	0	0
Topic #25	51	3	1	1	0	0
Topic #26	51	5	0	0	0	0
Topic #27	51	5	0	0	0	0
Topic #28	53	2	1	0	0	0

TABLE X

TIME SPENT ON TOPICS IN PHYSICAL GEOGRAPHY BY NON-GEOGRAPHY MAJORS IN TWO-YEAR COLLEGES

	Number of Class Periods					
	0	1	2	3	4	5
Topic #1	1	6	10	3	4	9
Topic #2	11	11	9	1	0	1
Topic #3	1	7	9	3	6	7
Topic #4	1	1	3	5	2	21
Topic #5	6	7	6	6	2	6
Topic #6	2	5	3	4	5	14
Topic #7	1	8	6	3	2	13
Topic #8	1	2	12	7	4	7
Topic #9	4	8	8	5	3	5
Topic #10	3	10	10	6	2	2
Topic #11	10	9	5	3	2	4
Topic #12	26	2	1	3	0	1
Topic #13	20	3	4	2	0	4
Topic #14	19	5	3	4	1	1
Topic #15	27	2	1	0	1	2
Topic #16	29	1	2	1	0	0
Topic #17	28	2	1	1	0	1
Topic #18	31	1	0	1	0	0
Topic #19	18	9	3	1	1	1
Topic #20	27	6	0	0	0	0
Topic #21	27	2	2	0	0	2

TABLE X - CONTINUED

	Number of Class Periods					
	0	1	2	3	4	5
Topic #22	32	1	0	0	0	0
Topic #23	26	5	1	0	0	1
Topic #24	28	4	0	1	0	0
Topic #25	28	4	0	1	0	0
Topic #26	28	4	0	1	0	0
Topic #27	28	5	0	0	0	0
Topic #28	29	4	0	0	0	0

TABLE XI

TIME SPENT ON TOPICS IN CULTURAL GEOGRAPHY BY GEOGRAPHY MAJORS IN TWO-YEAR COLLEGES

	Number of Class Periods					
	0	1	2	3	4	5
Topic #1	22	6	4	1	0	0
Topic #2	5	15	7	3	2	1
Topic #3	15	14	1	1	1	1
Topic #4	14	6	7	1	1	4
Topic #5	20	7	3	0	0	3
Topic #6	23	4	4	0	1	1
Topic #7	14	14	3	2	0	0
Topic #8	14	8	7	4	0	0
Topic #9	15	12	1	2	2	1
Topic #10	20	10	2	1	0	0
Topic #11	8	12	6	3	2	2
Topic #12	18	5	1	0	1	8
Topic #13	2	8	5	3	2	13
Topic #14	1	7	2	6	4	13
Topic #15	4	3	6	5	5	10
Topic #16	8	8	8	4	4	1
Topic #17	5	4	8	8	1	7
Topic #18	22	5	4	2	0	0
Topic #19	18	4	5	1	3	2
Topic #20	22	3	4	4	0	0
Topic #21	8	11	7	2	3	2

TABLE XI – CONTINUED

	Number of Class Periods					
	0	1	2	3	4	5
Topic #22	20	7	2	3	0	1
Topic #23	22	7	1	1	1	1
Topic #24	24	4	4	1	0	0
Topic #25	24	2	3	2	0	2
Topic #26	23	3	2	3	1	1
Topic #27	22	4	3	2	1	1
Topic #28	25	4	1	3	0	0

TABLE XII

TIME SPENT ON TOPICS IN CULTURAL GEOGRAPHY BY NON-GEOGRAPHY MAJORS IN TWO-YEAR COLLEGES

	Number of Class Periods					
	0	1	2	3	4	5
Topic #1	7	3	4	0	0	0
Topic #2	6	2	2	1	1	2
Topic #3	5	3	2	2	0	2
Topic #4	3	3	4	2	0	2
Topic #5	3	8	1	0	1	1
Topic #6	7	4	2	0	1	0
Topic #7	5	6	1	1	0	1
Topic #8	2	5	4	0	1	2
Topic #9	1	8	3	2	0	0
Topic #10	8	5	1	0	0	0
Topic #11	3	3	2	2	2	2
Topic #12	3	0	1	3	3	4
Topic #13	0	2	2	0	1	9
Topic #14	1	1	3	2	1	6
Topic #15	1	1	4	0	3	5
Topic #16	4	3	2	3	1	1
Topic #17	1	2	3	1	0	7
Topic #18	7	2	1	3	0	1
Topic #19	1	1	3	1	3	5
Topic #20	5	3	2	2	1	1
Topic #21	3	3	3	1	1	3

TABLE XII - CONTINUED

	Number of Class Periods					
	0	1	2	3	4	5
Topic #22	11	0	3	0	0	0
Topic #23	2	2	4	2	1	3
Topic #24	5	2	2	2	1	2
Topic #25	6	2	1	3	1	1
Topic #26	7	1	1	2	2	1
Topic #27	7	0	0	4	2	1
Topic #28	9	2	1	1	0	1

TABLE XIII

TIME SPENT ON TOPICS IN WORLD REGIONAL GEOGRAPHY BY GEOGRAPHY MAJORS IN TWO-YEAR COLLEGES

	Number of Class Periods					
	0	1	2	3	4	5
Topic #1	6	8	7	2	3	1
Topic #2	3	16	6	1	1	0
Topic #3	5	13	6	2	0	1
Topic #4	2	7	6	5	1	6
Topic #5	5	14	2	1	1	4
Topic #6	8	9	6	3	1	0
Topic #7	5	10	5	3	4	0
Topic #8	5	6	7	2	4	3
Topic #9	10	12	1	3	0	1
Topic #10	9	11	5	1	1	0
Topic #11	6	8	4	5	0	4
Topic #12	13	3	3	4	0	4
Topic #13	7	6	4	3	1	6
Topic #14	3	8	4	3	2	7
Topic #15	4	6	6	4	4	3
Topic #16	9	11	4	0	3	0
Topic #17	3	7	2	9	3	3
Topic #18	16	5	5	0	1	0
Topic #19	17	4	3	2	0	0
Topic #20	14	5	4	2	1	1
Topic #21	3	4	7	3	4	6

TABLE XIII - CONTINUED

	Number of Class Periods					
	0	1	2	3	4	5
Topic #22	7	8	8	1	1	2
Topic #23	3	8	10	1	2	3
Topic #24	5	8	10	2	1	1
Topic #25	6	7	7	2	1	4
Topic #26	5	7	7	2	3	3
Topic #27	6	9	7	2	0	3
Topic #28	5	13	4	3	1	1

TABLE XIV

TIME SPENT ON TOPICS IN WORLD REGIONAL GEOGRAPHY BY NON-GEOGRAPHY MAJORS IN TWO-YEAR COLLEGES

	Number of Class Periods					
	0	1	2	3	4	5
Topic #1	1	5	2	1	0	2
Topic #2	0	7	3	0	1	0
Topic #3	0	5	3	1	0	2
Topic #4	0	2	2	2	2	3
Topic #5	1	4	2	2	0	2
Topic #6	2	2	3	1	2	1
Topic #7	0	5	5	0	0	1
Topic #8	0	2	6	0	2	1
Topic #9	2	5	3	0	0	1
Topic #10	1	3	6	0	1	0
Topic #11	2	7	0	0	1	1
Topic #12	8	2	0	0	0	1
Topic #13	2	4	2	0	0	3
Topic #14	1	4	3	0	0	3
Topic #15	2	3	3	1	1	1
Topic #16	4	2	3	1	0	1
Topic #17	4	5	0	0	1	1
Topic #18	9	1	0	0	0	1
Topic #19	5	2	3	0	0	1
Topic #20	9	1	1	0	0	0
Topic #21	1	2	1	1	1	5

TABLE XIV - CONTINUED

	Number of Class Periods					
	0	1	2	3	4	5
Topic #22	7	2	0	1	0	1
Topic #23	0	4	1	4	1	1
Topic #24	0	3	3	4	0	1
Topic #25	0	3	1	2	2	3
Topic #26	0	3	1	3	1	3
Topic #27	1	3	1	3	1	2
Topic #28	1	4	3	2	0	1

The investigator found it necessary to combine groups in every topic of all three courses. Following, find the observed and expected frequency in each cell for each topic of each course with the chi-square results and degrees of freedom.

Interpretation of the Analyzed Data

A percentile value table[29] was used to interpret the chi-square values analyzed by the computer for the twenty-eight topics of introductory courses; namely, physical, cultural and world regional geography.

For the .05 level of confidence, the value of x^2 (chi-square) is 3.841 with one degree of freedom; 5.991 with two degrees of freedom; 7.815 with three degrees of freedom and 9.488 with four degrees of freedom.[30]

The investigator found that in physical courses, three out of the twenty-eight topics were significantly different, statistically. Topics five, eleven and nineteen had a x^2 of 7.194 with two degrees of freedom, 6.902 with two degrees of freedom and 12.040 with one degree of freedom, respectively.

Geography majors seemed to spend more time than non-geography majors on topic five while the opposite was true in topics eleven and nineteen. Topic nineteen had a tremendous difference in time spent, with geography majors spending little time, while non-geographers spent their time more

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[29]James G. Cooper, Basic Statistics for Educational Research (Albuquerque, 1970), p. 83.

[30]Cooper, p. 83.

TABLE XV

TOPIC #1, EARTH AND ITS PLANETARY RELATIONS

PHYSICAL GEOGRAPHY

Observed Frequency

Geographers	= 19 - 23 - 14
Non-geographers	= 17 - 7 - 9

Expected Frequency

Geographers	= 22.65 - 18.88 - 14.47
Non-geographers	= 13.35 - 11.12 - 8.53

Chi-Square = 4.059
Degrees of Freedom = 2

CULTURAL GEOGRAPHY

Observed Frequency

Geographers	= 22 - 11
Non-geographers	= 7 - 7

Expected Frequency

Geographers	= 20.36 - 12.64
Non-geographers	= 8.64 - 5.36

Chi-Square = 0.558
Degrees of Freedom = 1

WORLD REGIONAL GEOGRAPHY

Observed Frequency

Geographers	= 14,000 - 13,000
Non-geographers	= 6,000 - 5,000

Expected Frequency

Geographers	= 14.21 - 12.79
Non-geographers	= 5.79 - 5.21

Chi-Square = 0.43E-01
Degrees of Freedom = 1

TABLE XVI

TOPIC #2, GEOGRAPHY'S BACKGROUND AND FUTURE

PHYSICAL GEOGRAPHY

Observed Frequency

Geographers	= 9 - 31 - 16
Non-geographers	= 11 - 11 - 11

Expected Frequency

Geographers	= 12.58 - 26.43 - 16.99
Non-geographers	= 7.42 - 15.57 - 10.01

Chi-Square 5.043
Degrees of Freedom = 2

CULTURAL GEOGRAPHY

Observed Frequency

Geographers	= 5 - 28
Non-geographers	= 6 - 8

Expected Frequency

Geographers	= 7.72 - 25.28
Non-geographers	= 3.28 - 10.72

Chi-Square = 2.805
Degrees of Freedom = 1

WORLD REGIONAL GEOGRAPHY

Observed Frequency

Geographers	= 19 - 8
Non-geographers	= 7 - 4

Expected Frequency

Geographers	= 18.47 - 8.53
Non-geographers	= 7.53 - 3.47

Chi-Square = 0.41E-03
Degrees of Freedom = 1

TABLE XVII

TOPIC #3, MAPS AND MEASUREMENTS

PHYSICAL GEOGRAPHY

Observed Frequency

Geographers	= 13	- 12	- 14	- 17
Non-geographers	= 8	- 9	- 3	- 13

Expected Frequency

Geographers	= 13.21	- 13.21	- 10.70	- 18.88
Non-geographers	= 7.79	- 7.79	- .30	- 11.12

Chi-Square = 3.564
Degrees of Freedom = 3

CULTURAL GEOGRAPHY

Observed Frequency

Geographers	= 15	- 18
Non-geographers	= 5	- 9

Expected Frequency

Geographers	= 14.04	- 18.96
Non-geographers	= 5.96	- 8.04

Chi-Square = 0.087
Degrees of Freedom = 1

WORLD REGIONAL GEOGRAPHY

Observed Frequency

Geographers	= 18	- 9
Non-geographers	= 5	- 6

Expected Frequency

Geographers	= 16.34	- 10.66
Non-geographers	= 6.66	- 4.34

Chi-Square = 0.718
Degrees of Freedom = 1

TABLE XVIII

TOPIC #4, CLIMATIC CONTROLS AND/OR ELEMENTS

PHYSICAL GEOGRAPHY

Observed Frequency

Geographers	= 15	- 41
Non-geographers	= 12	- 21

Expected Frequency

Geographers	= 16.99	- 39.01
Non-geographers	= 10.01	- 22.99

Chi-Square = 0.505
Degrees of Freedom = 1

CULTURAL GEOGRAPHY

Observed Frequency

Geographers	= 20	- 13
Non-geographers	= 6	- 8

Expected Frequency

Geographers	= 18.26	- 14.74
Non-geographers	= 7.74	- 6.26

Chi-Square = 0.638
Degrees of Freedom = 1

WORLD REGIONAL GEOGRAPHY

Observed Frequency

Geographers	= 20	- 7
Non-geographers	= 6	- 5

Expected Frequency

Geographers	= 18.47	- 8.53
Non-geographers	= 7.53	- 3.47

Chi-Square = 0.624
Degrees of Freedom = 1

TABLE XIX

TOPIC #5, CLIMATIC TYPES

PHYSICAL GEOGRAPHY

Observed Frequency

Geographers	= 11	- 16	- 29
Non-geographers	= 13	- 12	- 8

Expected Frequency

Geographers	= 15.10	- 17.62	- 23.28
Non-geographers	= 8.90	- 10.38	- 13.72

Chi-Square = 7.194
Degrees of Freedom = 2

CULTURAL GEOGRAPHY

Observed Frequency

Geographers	= 20	- 13
Non-geographers	= 3	- 11

Expected Frequency

Geographers	= 16.15	- 16.85
Non-geographers	= 6.85	- 7.15

Chi-Square = 4.572
Degrees of Freedom = 1

WORLD REGIONAL GEOGRAPHY

Observed Frequency

Geographers	= 19	- 8
Non-geographers	= 5	- 6

Expected Frequency

Geographers	= 17.05	- 9.95
Non-geographers	= 6.95	- 4.05

Chi-Square = 1.152
Degrees of Freedom = 1

TABLE XX

TOPIC #6, SURFACE FEATURE ORIGINS

PHYSICAL GEOGRAPHY

Observed Frequency

Geographers	= 8	- 19	- 29
Non-geographers	= 7	- 7	- 19

Expected Frequency

Geographers	= 9.44	- 16.36	- 30.20
Non-geographers	= 5.56	- 9.64	- 17.80

Chi-Square = 1.869
Degrees of Freedom = 2

CULTURAL GEOGRAPHY

Observed Frequency

Geographers	= 23	- 10
Non-geographers	= 7	- 7

Expected Frequency

Geographers	= 21.06	- 11.94
Non-geographers	= 8.94	- 5.06

Chi-Square = 0.909
Degrees of Freedom = 1

WORLD REGIONAL GEOGRAPHY

Observed Frequency

Geographers	= 17	- 10
Non-geographers	= 4	- 7

Expected Frequency

Geographers	- 14.92	- 12.08
Non-geographers	- 6.08	- 4.92

Chi-Square = 1.290
Degrees of Freedom = 1

TABLE XXI

TOPIC #7, MAJOR TYPES OF LANDFORMS

PHYSICAL GEOGRAPHY

Observed Frequency

Geographers	= 17	- 11	- 12	- 16
Non-geographers	= 9	- 6	- 5	- 13

Expected Frequency

Geographers	= 16.36	- 10.70	- 10.70	- 18.25
Non-geographers	= 9.64	- 6.30	- 6.30	- 10.75

Chi-Square = 1.266
Degrees of Freedom = 3

CULTURAL GEOGRAPHY

Observed Frequency

Geographers	= 14	- 19
Non-geographers	= 5	- 9

Expected Frequency

Geographers	= 13.34	- 19.66
Non-geographers	= 5.66	- 8.34

Chi-Square = 0.11E-01
Degrees of Freedom = 1

WORLD REGIONAL GEOGRAPHY

Observed Frequency

Geographers	= 15	- 12
Non-geographers	= 5	- 6

Expected Frequency

Geographers	= 14.21	- 12.79
Non-geographers	= 5.79	- 5.21

Chi-Square = 0.43E-01
Degrees of Freedom = 1

TABLE XXII

TOPIC #8, VEGETATION AND SOILS

PHYSICAL GEOGRAPHY

Observed Frequency

Geographers	= 16	- 7	- 33
Non-geographers	= 15	- 7	- 11

Expected Frequency

Geographers	= 19.51	- 8.81	- 27.69
Non-geographers	= 11.49	- 5.19	- 16.31

Chi-Square = 5.453
Degrees of Freedom = 2

CULTURAL GEOGRAPHY

Observed Frequency

Geographers	= 22	- 11
Non-geographers	= 7	- 7

Expected Frequency

Geographers	= 20.36	- 12.64
Non-geographers	= 8.64	- 5.36

Chi-Square = 0.558
Degrees of Freedom = 1

WORLD REGIONAL GEOGRAPHY

Observed Frequency

Geographers	= 18	- 9
Non-geographers	= 8	- 3

Expected Frequency

Geographers	= 18.47	- 8.53
Non-geographers	= 7.53	- 3.47

Chi-Square = 0.41E-03
Degrees of Freedom = 1

TABLE XXIII

TOPIC #9, WATER RESOURCES

PHYSICAL GEOGRAPHY

Observed Frequency

Geographers	= 27	- 13	- 16	
Non-geographers	= 12	- 8	- 13	

Expected Frequency

Geographers	= 24.54	- 13.21	- 18.25	
Non-geographers	= 14.46	- 7.79	- 10.75	

Chi-Square = 1.421
Degrees of Freedom = 2

CULTURAL GEOGRAPHY

Observed Frequency

Geographers	= 27	- 6	
Non-geographers	= 9	- 5	

Expected Frequency

Geographers	= 25.28	- 7.72	
Non-geographers	= 10.72	- 3.28	

Chi-Square = 0.849
Degrees of Freedom = 1

WORLD REGIONAL GEOGRAPHY

Observed Frequency

Geographers	= 22	- 5	
Non-geographers	= 7	- 4	

Expected Frequency

Geographers	= 20.61	- 6.39	
Non-geographers	= 8.39	- 2.61	

Chi-Square = 0.567
Degrees of Freedom = 1

TABLE XXIV

TOPIC #10, OCEANS AND/OR SEAS

PHYSICAL GEOGRAPHY

Observed Frequency

Geographers	= 24	- 10	- 14	- 8
Non-geographers	= 13	- 10	- 6	- 4

Expected Frequency

Geographers	= 23.28	- 12.58	- 12.58	- 7.55
Non-geographers	= 13.72	- 7.42	- 7.42	- 4.45

Chi-Square = 1.993
Degrees of Freedom = 3

CULTURAL GEOGRAPHY

Observed Frequency

Geographers	= 20	- 13	
Non-geographers	= 8	- 6	

Expected Frequency

Geographers	= 19.66	- 13.34	
Non-geographers	= 8.34	- 5.66	

Chi-Square = 0.11E-01
Degrees of Freedom = 1

WORLD REGIONAL GEOGRAPHY

Observed Frequency

Geographers	= 20	- 7	
Non-geographers	= 4	- 7	

Expected Frequency

Geographers	= 17.05	- 9.95	
Non-geographers	= 6.95	- 4.05	

Chi-Square = 3.293
Degrees of Freedom = 1

TABLE XXV

TOPIC #11, RESOURCE AND LOCATION

PHYSICAL GEOGRAPHY

Observed Frequency

Geographers	= 29	- 17	- 10
Non-geographers	= 10	- 9	- 14

Expected Frequency

Geographers	= 24.54	- 16.36	- 15.10
Non-geographers	= 14.46	- 9.64	- 8.90

Chi-Square = 6.902
Degrees of Freedom = 2

CULTURAL GEOGRAPHY

Observed Frequency

Geographers	= 20	- 13
Non-geographers	= 6	- 8

Expected Frequency

Geographers	= 18.26	- 14.74
Non-geographers	= 7.74	- 6.26

Chi-Square = 0.638
Degrees of Freedom = 1

WORLD REGIONAL GEOGRAPHY

Observed Frequency

Geographers	= 14	- 13
Non-geographers	= 9	- 2

Expected Frequency

Geographers	= 16.34	- 10.66
Non-geographers	= 6.66	- 4.34

Chi-Square = 1.817
Degrees of Freedom = 1

TABLE XXVI

TOPIC #12, ECONOMIC DEVELOPMENT

PHYSICAL GEOGRAPHY

Observed Frequency

Geographers	= 50	- 6
Non-geographers	= 26	- 7

Expected Frequency

Geographers	= 47.82	- 8.18
Non-geographers	= 28.18	- 4.82

Chi-Square = 1.089
Degrees of Freedom = 1

CULTURAL GEOGRAPHY

Observed Frequency

Geographers	= 24	- 9
Non-geographers	= 7	- 7

Expected Frequency

Geographers	= 21.77	- 11.23
Non-geographers	= 9.23	- 4.77

Chi-Square = 1.362
Degrees of Freedom = 1

WORLD REGIONAL GEOGRAPHY

Observed Frequency

Geographers	= 13	- 14
Non-geographers	= 8	- 3

Expected Frequency

Geographers	= 14.92	- 12.08
Non-geographers	= 6.08	- 4.92

Chi-Square = 1.045
Degrees of Freedom = 1

TABLE XXVII

TOPIC #13, MAN ON THE EARTH

PHYSICAL GEOGRAPHY

Observed Frequency

Geographers	= 35	- 17	- 4
Non-geographers	= 20	- 7	- 6

Expected Frequency

Geographers	= 34,61	- 15,10	- 6,29
Non-geographers	= 20,39	- 8,90	- 3,71

Chi-Square = 2,908
Degrees of Freedom = 2

CULTURAL GEOGRAPHY

Observed Frequency

Geographers	= 15	- 18
Non-geographers	= 4	- 10

Expected Frequency

Geographers	= 13,34	- 19,66
Non-geographers	= 5,66	- 8,34

Chi-Square = 0,568
Degrees of Freedom = 1

WORLD REGIONAL GEOGRAPHY

Observed Frequency

Geographers	= 13	- 14
Non-geographers	= 6	- 5

Expected Frequency

Geographers	= 13,50	- 13,50
Non-geographers	= 5,50	- 5,50

Chi-Square = 0.0
Degrees of Freedom = 1

TABLE XXVIII

TOPIC #14, POPULATION AND DISTRIBUTION

PHYSICAL GEOGRAPHY

Observed Frequency

Geographers	= 36	- 13	- 7
Non-geographers	= 19	- 5	- 9

Expected Frequency

Geographers	= 34,61	- 11,33	- 10,07
Non-geographers	= 20.39	- 6,67	- 5,93

Chi-Square = 3,339
Degrees of Freedom = 2

CULTURAL GEOGRAPHY

Observed Frequency

Geographers	= 10	- 23
Non-geographers	= 5	- 9

Expected Frequency

Geographers	= 10,53	- 22,47
Non-geographers	= 4,47	- 9,53

Chi-Square = 0,48E-03
Degrees of Freedom = 1

WORLD REGIONAL GEOGRAPHY

Observed Frequency

Geographers	= 11	- 16
Non-geographers	= 5	- 6

Expected Frequency

Geographers	= 11,37	- 15,63
Non-geographers	= 4,63	- 6,37

Chi-Square = 0,91E-02
Degrees of Freedom = 1

TABLE XXIX

TOPIC #15, RELIGIONS, RACES AND ETHNIC GROUPS

PHYSICAL GEOGRAPHY

Observed Frequency

Geographers = 48 - 8
Non-geographers = 27 - 6

Expected Frequency

Geographers = 47.19 - 8.81
Non-geographers = 27.81 - 5.19

Chi-Square = 0.35E-01
Degrees of Freedom = 1

CULTURAL GEOGRAPHY

Observed Frequency

Geographers = 13 - 20
Non-geographers = 6 - 8

Expected Frequency

Geographers = 13.34 - 19.66
Non-geographers = 5.66 - 8.34

Chi-Square = 0.11E-01
Degrees of Freedom = 1

WORLD REGIONAL GEOGRAPHY

Observed Frequency

Geographers = 10 - 17
Non-geographers = 5 - 6

Expected Frequency

Geographers = 10.66 - 16.34
Non-geographers = 4.34 - 6.66

Chi-Square = 0.13E-01
Degrees of Freedom = 1

TABLE XXX

TOPIC #16, LANGUAGE AND DIALECTS

PHYSICAL GEOGRAPHY

Observed Frequency

Geographers = 50 - 6
Non-geographers = 29 - 4

Expected Frequency

Geographers = 49.71 - 6.29
Non-geographers = 29.29 - 3.71

Chi-Square = 0.21E-01
Degrees of Freedom = 1

CULTURAL GEOGRAPHY

Observed Frequency

Geographers = 24 - 9
Non-geographers = 9 - 5

Expected Frequency

Geographers = 23.17 - 9.83
Non-geographers = 9.83 - 4.17

Chi-Square = 0.53E-01
Degrees of Freedom = 1

WORLD REGIONAL GEOGRAPHY

Observed Frequency

Geographers = 20 - 7
Non-geographers = 6 - 5

Expected Frequency

Geographers = 18.47 - 8.53
Non-geographers = 7.53 - 3.47

Chi-Square = 0.624
Degrees of Freedom = 1

TABLE XXXI

TOPIC #17, LOCATING NODES

PHYSICAL GEOGRAPHY

Observed Frequency

Geographers = 42 - 14
Non-geographers = 28 - 5

Expected Frequency

Geographers = 44.04 - 11.96
Non-geographers = 25.96 - 7.04

Chi-Square = 0.685
Degrees of Freedom = 1

CULTURAL GEOGRAPHY

Observed Frequency

Geographers = 17 - 16
Non-geographers = 6 - 8

Expected Frequency

Geographers = 16.15 - 16.85
Non-geographers = 6.85 - 7.15

Chi-Square = 0.50E-01
Degrees of Freedom = 1

WORLD REGIONAL GEOGRAPHY

Observed Frequency

Geographers = 10 - 17
Non-geographers = 9 - 2

Expected Frequency

Geographers = 13.50 - 13.50
Non-geographers = 5.50 - 5.50

Chi-Square = 4.606
Degrees of Freedom = 1

TABLE XXXII

TOPIC #18, COMMUNICATION NETWORKS

PHYSICAL GEOGRAPHY

Observed Frequency

Geographers = 53 - 3
Non-geographers = 31 - 2

Expected Frequency

Geographers = 52.85 - 3.15
Non-geographers = 31.15 - 1.85

Chi-Square = 0.114
Degrees of Freedom = 1

CULTURAL GEOGRAPHY

Observed Frequency

Geographers = 22 - 11
Non-geographers = 7 - 7

Expected Frequency

Geographers = 20.36 - 12.64
Non-geographers = 8.64 - 5.36

Chi-Square = 0.558
Degrees of Freedom = 1

WORLD REGIONAL GEOGRAPHY

Observed Frequency

Geographers = 16 - 11
Non-geographers = 9 - 2

Expected Frequency

Geographers = 17.76 - 9.24
Non-geographers = 7.24 - 3.76

Chi-Square = 0.907
Degrees of Freedom = 1

TABLE XXXIII

TOPIC #19, LAND-USE PATTERNS

PHYSICAL GEOGRAPHY

Observed Frequency

Geographers = 50 - 6
Non-geographers = 18 - 15

Expected Frequency

Geographers = 42.79 - 13.21
Non-geographers = 25.21 - 7.79

Chi-Square = 12.040
Degrees of Freedom = 1

CULTURAL GEOGRAPHY

Observed Frequency

Geographers = 27.000 - 6.000
Non-geographers = 5.000 - 9.000

Expected Frequency

Geographers = 22.47 - 10.53
Non-geographers = 9.53 - 4.47

Chi-Square = 7.611
Degrees of Freedom = 1

WORLD REGIONAL GEOGRAPHY

Observed Frequency

Geographers = 17 - 10
Non-geographers = 5 - 6

Expected Frequency

Geographers = 15.63 - 11.37
Non-geographers = 6.37 - 4.63

Chi-Square = 0.396
Degrees of Freedom = 1

TABLE XXXIV

TOPIC #20, BEST LOCATION

PHYSICAL GEOGRAPHY

Observed Frequency

Geographers = 50 - 6
Non-geographers = 27 - 6

Expected Frequency

Geographers = 48.45 - 7.55
Non-geographers = 28.55 - 4.45

Chi-Square = 0.456
Degrees of Freedom = 1

CULTURAL GEOGRAPHY

Observed Frequency

Geographers = 22 - 11
Non-geographers = 5 - 8

Expected Frequency

Geographers = 18.96 - 14.04
Non-geographers = 8.04 - 5.96

Chi-Square = 2.690
Degrees of Freedom = 1

WORLD REGIONAL GEOGRAPHY

Observed Frequency

Geographers = 14 - 13
Non-geographers = 9 - 2

Expected Frequency

Geographers = 16.34 - 10.66
Non-geographers = 6.66 4.34

Chi-Square = 1.817
Degrees of Freedom = 1

TABLE XXXV

TOPIC #21, WORLD REGIONAL DIVISIONS

PHYSICAL GEOGRAPHY

Observed Frequency

Geographers = 38 - 18
Non-geographers = 27 - 6

Expected Frequency

Geographers = 40.90 - 15.10
Non-geographers = 24.10 - 8.90

Chi-Square = 1.407
Degrees of Freedom = 1

CULTURAL GEOGRAPHY

Observed Frequency

Geographers = 26 - 7
Non-geographers = 9 - 5

Expected Frequency

Geographers = 24.57 - 8.43
Non-geographers = 10.43 - 3.57

Chi-Square = 0.458
Degrees of Freedom = 1

WORLD REGIONAL GEOGRAPHY

Observed Frequency

Geographers = 14 - 13
Non-geographers = 4 - 7

Expected Frequency

Geographers = 12.79 - 14.21
Non-geographers = 5.21 - 5.79

Chi-Square = 0.259
Degrees of Freedom = 1

TABLE XXXVI

TOPIC #22, INTERREGIONAL STRESSES

PHYSICAL GEOGRAPHY

Observed Frequency

Geographers = 53 - 3
Non-geographers = 32 - 1

Expected Frequency

Geographers = 53.48 - 2.52
Non-geographers = 31.52 - 1.48

Chi-Square = 0.32E-03
Degrees of Freedom = 1

CULTURAL GEOGRAPHY

Observed Frequency

Geographers = 20 - 13
Non-geographers = 11 - 3

Expected Frequency

Geographers = 21.77 - 11.23
Non-geographers = 9.23 - 4.77

Chi-Square = 0.726
Degrees of Freedom = 1

WORLD REGIONAL GEOGRAPHY

Observed Frequency

Geographers = 7 - 20
Non-geographers = 7 - 4

Expected Frequency

Geographers = 9.95 - 17.05
Non-geographers = 4.05 - 6.95

Chi-Square = 3.293
Degrees of Freedom = 1

TABLE XXXVII

TOPIC #23, ANGLO AMERICA

PHYSICAL GEOGRAPHY

Observed Frequency

Geographers	= 50 -	6
Non-geographers	= 26 -	7

Expected Frequency

Geographers	= 47,82 -	8,18
Non-geographers	= 28,18 -	4,82

Chi-Square = 1,089
Degrees of Freedom = 1

CULTURAL GEOGRAPHY

Observed Frequency

Geographers	= 22 -	11
Non-geographers	= 2 -	12

Expected Frequency

Geographers	= 16,85 -	16,15
Non-geographers	= 7,15 -	6,85

Chi-Square = 8,799
Degrees of Freedom = 1

WORLD REGIONAL GEOGRAPHY

Observed Frequency

Geographers	= 21 -	6
Non-geographers	= 5 -	6

Expected Frequency

Geographers	= 18,47 -	8,53
Non-geographers	= 7,53 -	3,47

Chi-Square = 2,431
Degrees of Freedom = 1

TABLE XXXVIII

TOPIC #24, LATIN AMERICA

PHYSICAL GEOGRAPHY

Observed Frequency

Geographers	= 53 -	3
Non-geographers	= 28 -	5

Expected Frequency

Geographers	= 50,97 -	5,03
Non-geographers	= 30,03 -	2,97

Chi-Square = 1,385
Degrees of Freedom = 1

CULTURAL GEOGRAPHY

Observed Frequency

Geographers	= 24 -	9
Non-geographers	= 5 -	9

Expected Frequency

Geographers	= 20,36 -	12,64
Non-geographers	= 8,64 -	5,36

Chi-Square = 4,240
Degrees of Freedom = 1

WORLD REGIONAL GEOGRAPHY

Observed Frequency

Geographers	= 23 -	4
Non-geographers	= 6 -	5

Expected Frequency

Geographers	= 20,61 -	6,39
Non-geographers	= 8,38 -	2,61

Chi-Square = 2,541
Degrees of Freedom = 1

TABLE XXXIX

TOPIC #25, EUROPE AND THE U.S.S.R.

PHYSICAL GEOGRAPHY

Observed Frequency

Geographers	= 51 -	5
Non-geographers	= 28 -	5

Expected Frequency

Geographers	= 49.71 -	6.29
Non-geographers	= 29.29 -	3.71

Chi-Square = 0.303
Degrees of Freedom = 1

CULTURAL GEOGRAPHY

Observed Frequency

Geographers	= 24 -	9
Non-geographers	= 6 -	8

Expected Frequency

Geographers	= 21.06 -	11.94
Non-geographers	= 8.94 -	5.06

Chi-Square = 2.615
Degrees of Freedom = 1

WORLD REGIONAL GEOGRAPHY

Observed Frequency

Geographers	= 20 -	7
Non-geographers	= 4 -	7

Expected Frequency

Geographers	= 17.05 -	9.95
Non-geographers	= 6.95 -	4.05

Chi-Square = 3.293
Degrees of Freedom = 1

TABLE XL

TOPIC #26, ASIA

PHYSICAL GEOGRAPHY

Observed Frequency

Geographers	= 51 -	5
Non-geographers	= 28 -	5

Expected Frequency

Geographers	= 49.71 -	6.29
Non-geographers	= 29.29 -	3.71

Chi-Square = 0.303
Degrees of Freedom = 1

CULTURAL GEOGRAPHY

Observed Frequency

Geographers	= 23 -	10
Non-geographers	= 7 -	7

Expected Frequency

Geographers	= 21.06 -	11.94
Non-geographers	= 8.94 -	5.06

Chi-Square = 0.909
Degrees of Freedom = 1

WORLD REGIONAL GEOGRAPHY

Observed Frequency

Geographers	= 19 -	8
Non-geographers	= 4 -	7

Expected Frequency

Geographers	= 16.34 -	10.66
Non-geographers	= 6.66 -	4.34

Chi-Square = 2.494
Degrees of Freedom = 1

TABLE XLI

TOPIC #27, MIDDLE EAST AND AFRICA

PHYSICAL GEOGRAPHY

Observed Frequency

Geographers	= 51 -	5
Non-geographers	= 28 -	5

Expected Frequency

Geographers	= 49.71 -	6.29
Non-geographers	= 29.29 -	3.71

Chi-Square = 0.303
Degrees of Freedom = 1

CULTURAL GEOGRAPHY

Observed Frequency

Geographers	= 22 -	11
Non-geographers	= 7 -	7

Expected Frequency

Geographers	= 20.36 -	12.64
Non-geographers	= 8.64 -	5.36

Chi-Square = 0.558
Degrees of Freedom = 1

WORLD REGIONAL GEOGRAPHY

Observed Frequency

Geographers	= 22.000 -	5.000
Non-geographers	= 5.000 -	6.000

Expected Frequency

Geographers	= 19.18 -	7.82
Non-geographers	= 9.82 -	3.18

Chi-Square = 3.336
Degrees of Freedom = 1

TABLE XLII

TOPIC #28, AUSTRALIA, THE PACIFIC AND THE POLES

PHYSICAL GEOGRAPHY

Observed Frequency

Geographers	= 53 -	3
Non-geographers	= 29 -	4

Expected Frequency

Geographers	= 51.60 -	4.40
Non-geographers	= 30.40 -	2.60

Chi-Square = 0.544
Degrees of Freedom = 1

CULTURAL GEOGRAPHY

Observed Frequency

Geographers	= 25 -	8
Non-geographers	= 9 -	5

Expected Frequency

Geographers	= 23.87 -	9.13
Non-geographers	= 10.13 -	3.87

Chi-Square = 0.200
Degrees of Freedom = 1

WORLD REGIONAL GEOGRAPHY

Observed Frequency

Geographers	= 18 -	9
Non-geographers	= 5 -	6

Expected Frequency

Geographers	= 16.34 -	10.66
Non-geographers	= 6.66 -	4.34

Chi-Square = 0.718
Degrees of Freedom = 1

evenly.

In cultural courses, four out of the twenty-eight topics had significant differences, statistically, and are as follows: Topic five with a x^2 of 4.572 and one degree of freedom; topic nineteen with x^2 of 7.611 and one degree of freedom; topic twenty-three with a x^2 of 8.799 and one degree of freedom and topic twenty-four with a x^2 of 4.240 and one degree of freedom.

Non-geographers tended to use topics five, nineteen, twenty-three and twenty-four more than geography majors did in the classroom.

In world regional geography, only one topic, number seventeen, with a x^2 of 4.606 and one degree of freedom had a significant difference, statistically, with geography majors spending more time teaching topic seventeen than non-geography majors.

CHAPTER V

SUMMARY, FINDINGS, CONCLUSIONS IMPLICATIONS AND RECOMMENDATIONS

Summary. The primary purpose of this investigation was to determine the relationship of the time spent on selected topics in three introductory geography courses between geography and non-geography majors. One-hundred and forty-five instructors returned their questionnaire, eleven of which were unanswered. One-hundred and thirty-four answered questionnaires were included in the analysis and divided into two groups; geography majors and non-geography majors, and three sub-groups; physical, cultural and world regional geography, in order to calculate how many instructors taught each of the three sub-groups in two-year colleges.

The chi-square test was applied to the one-hundred and thirty-four questionnaires, showing that overall there were no significant differences noted in the way introductory courses in physical, cultural and world regional geography were taught by geography and non-geography majors in the two-year colleges surveyed. A few minor exceptions were noted in particular topics. For example, in physical geography there was a significant difference in time spent by geography and non-geography majors on topics five, eleven and nineteen. Furthermore, physical geography topic number nineteen was the only topic that showed any drastic differences in usage by geography and non-geography majors.

Findings generated by the hypothesis. Based on the analysis of the data, the following conclusions are:

1. Overall, there are no significant differences to a five percent level of confidence, in the time spent on topics in a two-year college introductory physical geography course, between geography majors and non-geography majors.
2. Overall, there are no significant differences to a five percent level of confidence, in the time spent on topics in a two-year college introductory cultural geography course, between geography majors and non-geography majors.
3. Overall, there are no significant differences to a five percent level of confidence, in the time spent on topics in a two-year college introductory world regional geography course, between geography majors and non-geography majors.

Conclusions and implications. The results of the study imply that the time spent on the topics presented in the questionnaire by non-geography majors does not differ very much from the time spent on the topics by geography majors.

Although, statistically, there is no difference in the way topics are handled in the classroom between geography and non-geography majors, it is important to consider two possible reasons why the lack of differences exist. Firstly, geography and non-geography major instructors may follow their required course text(s) relatively closely. If there is truth to the preceding sentence, then this may be one

reason why geography and non-geography majors present geographical topics in much the same manner. Furthermore, if any differences do exist in the way geography and non-geography majors present geographical topics in the classroom, these differences may be due to the choice of text(s) and not necessarily their geographical training in college or elsewhere. Secondly, it may be important to note that the geographical background of non-geography majors may be as adequate as geography majors. In reference to Table II, in Appendix K, it can be seen that eleven or twenty percent of the non-geography majors have had thirty-one or more hours in geography courses, and that thirty-four or sixty-one percent of the non-geography majors have had at least thirteen hours in geography courses. Although the non-geography majors may not have been exposed to geography, through credit hours, as much as geography majors have (seventy-five or ninety-five percent of the geography majors had thirteen or more hours in geography), their geographical background may be adequate enough to teach geography if they follow the class text closely. Therefore, if the geography and non-geography majors emphasize the use of the text(s), it may not be very important for non-geography majors to have as many credit hours in geography as geography majors have had. Nevertheless, it may be more desirable to have an instructor who has majored in geography so that the student(s) can more greatly benefit by the instructor's broader and deeper geographical knowledge.

Recommendations. The following are a few possible study

ideas that might be undertaken in relation to the present study:

1. A study should be undertaken to find out if there is a relationship between instructors who follow a text and those who do not, and their geographical experience.
2. A study should be undertaken on the effectiveness non-geography majors have in teaching geography courses; although the manner of teaching may be as effective as that of a geography major, lecture content and discussion may not be.
3. A study should be undertaken in order to learn how the students feel about their teacher's/teachers' capabilities, geographical knowledge and what the teacher/teachers may lack in his/their presentation of the particular geography course being taught.
4. A study should be undertaken to compare the relationship between geography majors who have had education courses, with those geography majors who have not had education courses.
5. A study should be undertaken to compare the relationship between non-geography majors teaching geography courses and having an education course background, with those non-geography majors teaching geography courses who have not had any education courses in their background.

APPENDIXES

TABLE OF CONTENTS

APPENDIX A

GEOGRAPHICAL AND EDUCATIONAL ASSOCIATIONS CONTACTED

Following is a list of the associations contacted in order to obtain information on any possible studies undertaken on the subject of two-year college geography instructors.

1. The Fund for the Advancement of Education
   Washington, D.C.
2. National Education Association, Research Division
   Washington, D.C.
3. American College Public Relations Association
   Washington, D.C.
4. Association of American Colleges
   Washington, D.C.
5. Association of American Geographers
   Washington, D.C.
6. American Association of Junior Colleges
   Washington, D.C.
7. National Council of Geographic Education
   Oak Park, Illinois
8. National Council of Independent Junior Colleges
   Washington, D.C.
9. National Council of State Directors of Community Junior Colleges
   Washington, D.C.
10. State Department of Education in New Mexico
    Santa Fe, New Mexico
11. National Council of Social Studies
    Washington, D.C.
12. American Council on Education
    Washington, D.C.

APPENDIX B

SAMPLE LETTER TO EDUCATIONAL ASSOCIATIONS CONTACTED

April 18, 1973

Dear Sir:

In preparation for my thesis, I must know if any previous studies have been undertaken in regards to the following:

a) The total number of hours, and titles, of all educational courses taken by junior college geography teachers, and

b) the total number of semester or quarter hours (including course titles) taken in geography only, by junior college geography teachers.

A prompt reply, concerning this matter, will be most appreciated.

Respectfully yours,

Leon Yacher

Leon Yacher
3407 Anderson Avenue, S.E.
Apartment #8
Albuquerque, New Mexico
87106

LY:nly

APPENDIX C

SAMPLE LETTER TO TWO-YEAR COLLEGE PRESIDENTS

Dear Sir:

My name is Leon Yacher and presently I am working on my thesis to fulfill the requirements for a masters degree at the University of New Mexico in Albuquerque.

I would appreciate your sending me the following information so that I can distribute a questionnaire to the appropriate people.

1. The name(s) and address(es) of the instructor(s) at your institution in charge of teaching geography courses.

2. If you send several names, will you please designate the headman or chairman of the group.

3. A catalogue from your junior college.

I thank you in advance for your cooperation in this matter.

Respectfully,

Leon Yacher

Leon Yacher
3407 Anderson Avenue, S.E.
Apartment #8
Albuquerque, New Mexico
87106

Dr. Robert J. Doxtator

Dr. Robert Doxtator
Professor of Secondary
Education and
former Chairman of the
Department

LY:RD:nly

APPENDIX D

SAMPLE FOLLOW-UP LETTER
TO TWO-YEAR COLLEGE PRESIDENTS

July 30, 1973

Dear Sir:

Two months ago, I sent you a letter requesting specific information for my thesis. I have not received any word from you as of yet, so I am sending this follow-up letter.

I would appreciate your sending me:

1) The name(s) and address(es) of the instructor(s) at your institution in charge of teaching geography courses, and

2) A catalogue from your college.

Could you please send me this important information as soon as possible, as I must distribute a questionnaire to the appropriate people at the beginning of the 1973 fall semester.

Your prompt attention to this matter will be greatly appreciated.

Respectfully yours,

Leon Yacher

Leon Yacher
3407 Anderson Avenue, S.E.
Apartment #8
Albuquerque, New Mexico
87106

LY:nly

APPENDIX E

LIST OF JURORS

1. Dr. Robert Batchelder, Department of Geography, University of Boston, Boston, Massachusetts 02215

2. Dr. Ward J. Barrett, Department of Geography, University of Minnesota, Minneapolis, Minnesota 55455

3. Dr. Iven Bennett, Department of Geography, University of New Mexico, Albuquerque, New Mexico 87131

4. Dr. Robert Campbell, Department of Geography, University of New Mexico, Albuquerque, New Mexico 87131

5. Dr. Del Dyreson, Department of Geography, University of New Mexico, Albuquerque, New Mexico 87131

6. Dr. Clinton R. Edwards, Department of Geography, University of Wisconsin at Milwaukee, Milwaukee, Wisconsin 53201

7. Dr. Arthur Getis, Department of Geography, Rutgers University, New Brunswick, New Jersey 08903

8. Dr. Douglas Gordon, Department of Geography, University of New Mexico, Albuquerque, New Mexico 87131

9. Dr. Robert A. Harper, Department of Geography, University of Maryland, College Park, Maryland 20742

10. Dr. John Frazer Hart, Department of Geography, University of Minnesota, Minneapolis, Minnesota 55455

11. Dr. Richard Hartshorne, Department of Geography, University of Wisconsin at Madison, Madison, Wisconsin 53706

12. Dr. Nicholas Helburn, Department of Geography, University of Colorado, Boulder, Colorado 80302

13. Dr. Richard M. Highsmith, Jr., Department of Geography, Oregon State University, Corvallis, Oregon 97331

14. Dr. Clyde F. Kohn, Department of Geography, University of Iowa, Iowa City, Iowa 52246

15. Dr. John F. Lounsbury, Department of Geography, Arizona State University, Tempe, Arizona 85281

16. Dr. O. Orland Maxfield, Department of Geography, University of Arkansas, Fayetteville, Arkansas 72701

17. Dr. Shannon McCune, Department of Geography, University of Florida, Gainesville, Florida 32601

18. Dr. Edward J. Miles, Department of Geography, University of Vermont, Burlington, Vermont 05401

19. Dr. Richard Murphy, Department of Geography, University of New Mexico, Albuquerque, New Mexico 87131

20. Dr. John C. Sherman, Department of Geography, University of Washington, Seattle, Washington 98195

21. Dr. Rodman Snead, Department of Geography, University of New Mexico, Albuquerque, New Mexico 87131

22. Dr. L.M. Sommers, Department of Geography, Michigan State University, East Lansing, Michigan 48823

23. Dr. Edward J. Taaffe, Department of Geography, Ohio State University, Columbus, Ohio 43210

24. Dr. Glenn T. Trewartha, Department of Geography, University of Wisconsin at Madison, Madison, Wisconsin 53706

APPENDIX F

SAMPLE LETTER TO JURORS

August 16, 1973

Dear Dr. :

My name is Leon Yacher and I am presently working on a questionnaire for my thesis. I have chosen you, along with twenty-three other colleagues, as a member of my jury.

The jury's purpose is to make comments on the content, format and approach of the questionnaire I will be sending to approximately 250 two-year college geography instructors, in addition to any other aspects I might have overlooked. I would also appreciate your attempting to answer the questionnaire. Enclosed you will find a copy of the questionnaire's rationale and statistical approach for treatment of the response. The two-year college geography instructor, on the other hand, will receive only the questionnaire.

I would appreciate any advice or comments returned to me as promptly as possible, since I expect to send my questionnaire to the two-year college geography instructors at the beginning of the second week in September.

Your prompt reply will enable me to make beneficial use of your comments, in addition to appropriate adjustments where necessary.

I will be looking forward to receiving your response in the very near future. Thanking you in advance for your cooperation and patience, I remain,

Respectfully yours,

Leon Yacher

Leon Yacher
3407 Anderson Avenue, S.E.
Apartment #8
Albuquerque, New Mexico
87106

LY:nly

APPENDIX G

SAMPLE OF ORIGINAL QUESTIONNAIRE

Two-Year College Geography Instructors

Educational Background and Concepts They Teach

Dear Two-Year College Geography Instructor:

On the following pages you will be asked several questions, the answers to which will be very significant in the final results of my thesis. Your cooperation in answering appropriately, and to the best of your knowledge, these questions, will be greatly appreciated.

I thank you in advance for your time and patience, and I hope to receive your responses as promptly as possible.

Sincerely,

Leon Yacher

Please return questionnaire to:

Leon Yacher
3407 Anderson Avenue, S.E.
Apartment #8
Albuquerque, New Mexico 87106

* * * * * * * * * * * *

I. Please check where applicable:

1. What is your highest degree? B.A. ☐ B.S. ☐ M.A. ☐ M.S. ☐ Ph.D. ☐
2. When did you receive your highest degree? Before '60 ☐ 61-65 ☐ 66-70 ☐ 71-73 ☐
3. What was your major field of study? Geog ☐ Hist ☐ Geol ☐ Other(Specify) ☐ _____
4. Teaching experience other than a two-year college? None ☐ Jr.High ☐ High ☐ Univ. ☐ Other ☐
5. Other than geography, how many other courses do you teach? 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐
6. How many geography courses do you teach? 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐
7. How many different geography courses do you teach? 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐
8. Course title(s) you are teaching or have taught (e.g.:Introduction to Physical Geography) 1._____ 2._____ 3._____ 4._____

continued →

9. Is your position considered full-time? Yes ☐ No ☐

10. Total years of teaching experience? 0-3 ☐ 4-7 ☐ 8-12 ☐ 12+ ☐

11. Total years of teaching experience in a two-year college? 0-3 ☐ 4-7 ☐ 8-12 ☐ 12+ ☐

12. Time length of each class (e.g.: 50 minutes) _____ minutes

13. Number of classes per week 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

II. In the following table, please specify to the best of your knowledge the number of credit hours you have taken in the following courses during your college career:

(In the space provided at the bottom of this page, please include those courses not mentioned below.)*

(If quarter hrs., please multiply by two-thirds to get semester hours.)

GENERAL EDUCATION Subject	0	1-6	7-12	13-18	19-24	25-30	31+
English							
Mathematics							
Psychology							
Foreign Language							
Philosophy							
Business							
Biology							
Physics							
Chemistry							
Geology							
Anthropology							

continued→

	0	1-6	7-12	13-18	19-24	25-30	31+
Economics							
Political Science							
Sociology							
History							
Geography							
Education							
Engineering							
Astronomy							
Meteorology							

*Courses not mentioned (if any):

III. Concept usage in any introductory physical and/or cultural geography course instruction.

If you are answering for more than one course, please check C#1,* C#2 or C#3 under the appropriate number of periods.

Under each concept there are two or three clarifiers. Their purpose is to give an idea of the particular concept they are listed under.

Please place a check over the line that most appropriately applies to you.

CONCEPTS	0	1	2	3	4	5+
1. Earth and its planetary relations: (e.g.)	C#1					
a) size and shape,						
b) earth-sun relationship,	C#2					
c) rotation or axial inclination,						
d) etc.	C#3:					

*Course number

continued→

		0	1	2	3	4	5+
2.	Geography's background: (e.g.) a) historical background, such as ancient geographers or modern " b) methods of investigation, c) geography among other fields, d) etc.	C#1:					
		C#2:					
		C#3:					
3.	Maps and measurements: (e.g.) a) projections or types, b) scales, c) pressure or winds, d) etc.	C#1:					
		C#2:					
		C#3:					
4.	Climatic controls: (e.g.) a) latitude, b) land-water distribution or ocean currents, c) pressure or winds, d) etc.	C#1:					
		C#2:					
		C#3:					
5.	Climatic elements: (e.g.) a) temperature or precipitation, b) humidity or causes of precipitation, c) etc.	C#1:					
		C#2:					
		C#3:					
6.	Climatic types: (e.g.) a) climatic symbols (i.e.,Koppen's), b) their distributions (i.e.,Arid Zones), c) etc.	C#1:					
		C#2:					
		C#3:					

continued→

	0	1	2	3	4	5+
7. Surface feature origins: (e.g.) a) earth materials, types of, b) internal or external forces affecting surface features (i.e., vulcanism or weathering, etc.), c) etc.	C#1:					
	C#2:					
	C#3:					
8. Major types of landforms: (e.g.) a) mountains (their characteristics, distributions and usages), b) plains ("), c) hills ("), d) plateaus ("), e) etc.	C#1:					
	C#2:					
	C#3:					
9. Vegetation: (e.g.) a) environmental conditions affecting vegetation (i.e., climatic, etc.), b) types (i.e., forests, grasslands, etc.), c) distribution on earth, d) etc.	C#1:					
	C#2:					
	C#3:					
10. Soils: (e.g.) a) its characteristics (i.e., texture, color, etc.), b) forming processes (i.e., leaching, etc.), c) soil types or distributions, d) etc.	C#1:					
	C#2:					
	C#3:					
11. Water resources: (e.g.) a) its importance and supply, b) water consuming activities, c) etc.	C#1:					
	C#2:					
	C#3:					

continued→

		0	1	2	3	4	5+
12.	Oceans and/or seas: (e.g.) a) characteristics of its waters (i.e., chemical composition, temperatures, etc.), b) life in the oceans (i.e.,plankton) c) movement of ocean waters (i.e.,waves, tides, currents), d) ocean floor (i.e., continental shelf), e) etc.	C#1:					
		C#2:					
		C#3:					
13.	Fuel and metallic minerals: (e.g.) a) distribution and uses, b) types (i.e.,coal, iron, etc.), c) etc.	C#1:					
		C#2:					
		C#3:					
14.	Man on the earth: (e.g.) a) homeland of early man, b) homeland of modern man, c) etc.	C#1:					
		C#2:					
		C#3:					
15.	Population and distribution: (e.g.) a) migrations, b) population growth, c) demographic regions, d) etc.	C#1:					
		C#2:					
		C#3:					
16.	Religions and ethnic groups: (e.g.) a) their nature, b) distributions, c) etc.	C#1:					
		C#2:					
		C#3:					

continued →

		0	1	2	3	4	5+
17.	Races: (e.g.) a) their characteristics, b) ancient distributions, c) modern distributions, d) etc.	C#1:					
		C#2:					
		C#3:					
18.	Languages and dialects: (e.g.) a) classification of major languages, b) branches and types, c) distributions, d) etc.	C#1:					
		C#2:					
		C#3:					
19.	Urbanization: (e.g.) a) towns and cities, b) housing and settlements, c) etc.	C#1:					
		C#2:					
		C#3:					
20.	World political divisions: (e.g.) a) by continents, b) by cultural ties, c) by physical ties, d) etc.	C#1:					
		C#2:					
		C#3:					

NOTE: If there is a concept(s) you have discussed that is not mentioned in the above, please specify and give the number of classes you have used this concept(s) in.

End of Questionnaire

APPENDIX H

SAMPLE OF FINAL QUESTIONNAIRE

TWO-YEAR COLLEGE GEOGRAPHY INSTRUCTORS EDUCATIONAL BACKGROUND

AND TOPICS OR CONCEPTS THEY TEACH

Dear Faculty Member:

On the following pages you will be asked several questions, the answers to which will be very significant in the final results of my masters thesis. Your cooperation in answering these questions appropriately and to the best of your knowledge will be greatly appreciated.

Enclosed find a self-addressed/stamped envelope for your reply.

I thank you in advance for your time and patience. I hope to receive your responses as promptly as possible.

Respectfully yours,

Leon Yacher

☐ Check box if you would like a copy of the study. (It will be mailed in mid-February of 1974.)

I. Please check where applicable:

1. What is your highest degree. B.A. ☐ B.S. ☐ M.A. ☐ M.S. ☐ Post-Masters ☐ Ph.D. ☐

2. When did you receive your highest degree. Before '60 ☐ 61-65 ☐ 66-70 ☐ 71-73 ☐

3. What was your major field of study for your highest degree. Geog. ☐ Hist. ☐ Geol. ☐ Other (specify) ☐ _____

4. Teaching experience other than a two-year college. none ☐ Jr. High ☐ H.S. ☐ Univ. ☐ Other (specify) ☐ _____

5. How many courses do you teach this semester other than Geography. 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐

6. How many different Geography courses do you teach this semester. 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐

7. What is the total number of Geography courses you are teaching this semester. 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

8. Is your position considered full-time. Yes ☐ No ☐

9. Total years of teaching experience. 0-3 ☐ 4-7 ☐ 8-11 ☐ 12 or more ☐

10. Total years of teaching experience in a two-year college. 0-3 ☐ 4-7 ☐ 8-11 ☐ 12 or more ☐

11. Time length of each class (e.g. 50 minutes) If you teach more than one class, please specify the various time lengths for each of these additional classes. _____minutes _____minutes _____minutes

12. Number of classes per week (e.g. 3) 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

(If you had more than one response for question #11, please specify how many times each of those above additional courses meet per week.) 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

13. Length of semester or term = _____weeks.

II. In the following table, please specify to the best of your knowledge the number of credit hours you have taken in the following courses during your college career. (Please specify whether quarter or semester hours:_____.)

GENERAL EDUCATION

Subject	0	1-6	7-12	13-18	19-24	25-30	31 or more
English							
Mathematics							
Psychology							
Foreign Language							
Philosophy							
Business							
Biology							
Physics							
Chemistry							
Geology							

	0	1-6	7-12	13-18	19-24	25-30	31 or more
Anthropology							
Economics							
Political Science							
Sociology							
History							
Geography							
Education							
Astronomy							
Meteorology							

Courses not mentioned above (if any):

III. Topic usage in any introductory physical and/or cultural geography course instruction.

Course title(s) you are teaching this semester (e.g.; Introduction to Physical Geography).

Course #1_____

Course #2_____

Course #3_____

Following each topic/concept there are two or three clarifiers (e.g.'s). Their purpose is to give a clearer idea of each particular topic. Please place a check over the line that most appropriately applies to you.

TOPICS/CONCEPTS

NUMBER OF CLASS PERIODS SPENT ON THE FOLLOWING TOPICS/CONCEPTS

		0	1	2	3	4	5 or more
1. Earth and its planetary relations (e.g.; size and shape, earth-sun relationship, rotation or axial inclination or any others).	Course #1						
	Course #2						
	Course #3						

Please check if appropriate:

I consider the above a topic and not a concept. ___
(If you did not check the above, this means that you consider number 1 to be a concept.)

TOPICS/CONCEPTS		NUMBER OF CLASS PERIODS SPENT ON THE FOLLOWING TOPICS/CONCEPTS					
		0	1	2	3	4	5 or more
2. Geography's background and future (e.g.; historical background, such as ancient geographers or modern geographers; methods of investigation; geography among other fields or any others).	Course #1	___	___	___	___	___	___
	Course #2	___	___	___	___	___	___
	Course #3	___	___	___	___	___	___

Please check if appropriate:

I consider the above a topic and not a concept. ___
(If you did not check the above, this means that you consider number 2 to be a concept.)

3. Maps and measurements (e.g.; projections or types; scales or any others).	Course #1	___	___	___	___	___	___
	Course #2	___	___	___	___	___	___
	Course #3	___	___	___	___	___	___

Please check if appropriate:

I consider the above a topic and not a concept. ___
(If you did not check the above, this means that you consider number 3 to be a concept.)

4. Climatic controls and/or elements (e.g.; latitude; pressure of winds; land/water distribution or ocean currents; temperature or precipitation; humidity or causes of precipitation or any others).	Course #1	___	___	___	___	___	___
	Course #2	___	___	___	___	___	___
	Course #3	___	___	___	___	___	___

Please check if appropriate:

I consider the above a topic and not a concept. ___
(If you did not check the above, this means that you consider number 4 to be a concept.)

5. Climatic types (e.g.; climatic symbols (i.e., Kopen's); their distributions (i.e., Arid Zones) or any others).	Course #1	___	___	___	___	___	___
	Course #2	___	___	___	___	___	___
	Course #3	___	___	___	___	___	___

Please check if appropriate:

I consider the above a topic and not a concept. ___
(If you did not check the above, this means that you consider number 5 to be a concept.)

TOPICS/CONCEPTS		NUMBER OF CLASS PERIODS SPENT ON THE FOLLOWING TOPICS/CONCEPTS					
		0	1	2	3	4	5 or more
6. Surface feature origins (e.g.; earth materials, types of; internal or external forces affecting surface features (i.e., vulcanism or weathering, etc., or any others).	Course#1	___	___	___	___	___	___
	Course#2	___	___	___	___	___	___
	Course#3	___	___	___	___	___	___

Please check if appropriate:

I consider the above a topic and not a concept. ___
(If you did not check the above, this means that you consider number 6 to be a concept.)

7. Major types of landforms (e.g.; mountains (their characteristics, distributions and usages); plains; hills; plateaus; or any others).	Course#1	___	___	___	___	___	___
	Course#2	___	___	___	___	___	___
	Course#3	___	___	___	___	___	___

Please check if appropriate:

I consider the above a topic and not a concept. ___
(If you did not check the above, this means that you consider number 7 to be a concept.)

8. Vegetation and soils (e.g.; environmental conditions affecting vegetation and/or soils (i.e., climatic, etc.); types (i.e., forests, grasslands, etc.); distributions on earth; or any others).	Course#1	___	___	___	___	___	___
	Course#2	___	___	___	___	___	___
	Course#3	___	___	___	___	___	___

Please check if appropriate:

I consider the above a topic and not a concept. ___
(If you did not check the above, this means that you consider number 8 to be a concept.)

9. Water resources; (e.g.; its importance and supply; water consuming activities; or any others).	Course#1	___	___	___	___	___	___
	Course#2	___	___	___	___	___	___
	Course#3	___	___	___	___	___	___

Please check if appropriate:

I consider the above a topic and not a concept. ___
(If you did not check the above, this means that you consider number 9 to be a concept.)

TOPICS/CONCEPTS		NUMBER OF CLASS PERIODS SPENT ON THE FOLLOWING TOPICS/CONCEPTS 0 1 2 3 4 5 or more
10. Oceans and/or seas (e.g.; characteristics of its waters (i.e., chemical composition, temperatures, etc.); life in the oceans (i.e., plankton); movement of ocean waters (i.e., waves, tides, currents); ocean floor (i.e., continental shelf) or any others).	Course #1	___ ___ ___ ___ ___ ___
	Course #2	___ ___ ___ ___ ___ ___
	Course #3	___ ___ ___ ___ ___ ___

Please check if appropriate:

I consider the above a topic and not a concept. ___
(If you did not check the above, this means that you consider number 10 to be a concept.)

11. Resources and location (e.g.; fuel and metallic minerals; distribution and uses; types (i.e., coal, iron, etc.); extraction and processing their nature).	Course #1	___ ___ ___ ___ ___ ___
	Course #2	___ ___ ___ ___ ___ ___
	Course #3	___ ___ ___ ___ ___ ___

Please check if appropriate:

I consider the above a topic and not a concept. ___
(If you did not check the above, this means that you consider number 11 to be a concept.)

12. Economic development (e.g.; patterns and differences in economic development or any others).	Course #1	___ ___ ___ ___ ___ ___
	Course #2	___ ___ ___ ___ ___ ___
	Course #3	___ ___ ___ ___ ___ ___

Please check if appropriate:

I consider the above a topic and not a concept. ___
(If you did not check the above, this means that you consider number 12 to be a concept.)

13. Man on the earth (e.g.; homeland of early man, origin, problem of race, adaptation; homeland of modern man or any others).	Course #1	___ ___ ___ ___ ___ ___
	Course #2	___ ___ ___ ___ ___ ___
	Course #3	___ ___ ___ ___ ___ ___

I consider number 13 (on the previous page) a topic and not a concept. ___
(If you did not check the above, this means that you consider number 13 to be a concept.)

TOPICS/CONCEPTS		NUMBER OF CLASS PERIODS SPENT ON THE FOLLOWING TOPICS/CONCEPTS					
		0	1	2	3	4	5 or more
14. Population and distribution (e.g.; migrations; patterns of movement; population growth or any others).	Course #1	___	___	___	___	___	___
	Course #2	___	___	___	___	___	___
	Course #3	___	___	___	___	___	___

Please check if appropriate:

I consider the above a topic and not a concept. ___
(If you did not check the above, this means that you consider number 14 to be a concept.)

15. Religions, races and ethnic groups (e.g.; their nature and distributions or any others).	Course #1	___	___	___	___	___	___
	Course #2	___	___	___	___	___	___
	Course #3	___	___	___	___	___	___

Please check if appropriate:

I consider the above a topic and not a concept. ___
(If you did not check the above, this means that you consider number 15 to be a concept.)

16. Languages and dialects (e.g.; classification of major languages; branches and types; distributions or any others).	Course #1	___	___	___	___	___	___
	Course #2	___	___	___	___	___	___
	Course #3	___	___	___	___	___	___

Please check if appropriate:

I consider the above a topic and not a concept. ___
(If you did not check the above, this means that you consider number 16 to be a concept.)

17. Locating nodes (e.g.; locating world patterns urban places as nodes; industrial places as nodes; central place or any others).	Course #1	___	___	___	___	___	___
	Course #2	___	___	___	___	___	___
	Course #3	___	___	___	___	___	___

Please check if appropriate:

I consider the above a topic and not a concept. ___
(If you did not check the above, this means that you consider number 17 to be a concept.)

TOPICS/CONCEPTS		NUMBER OF CLASS PERIODS SPENT ON THE FOLLOWING TOPICS/CONCEPTS					
		0	1	2	3	4	5 or more
18. Communication networks (e.g.; its dynamics and system; economics and politics of route construction accessibility or any others).	Course #1	___	___	___	___	___	___
	Course #2	___	___	___	___	___	___
	Course #3	___	___	___	___	___	___

Please check if appropriate:

I consider the above a topic and not a concept. ___
(If you did not check the above, this means that you consider number 18 to be a concept.)

19. Land-use patterns (e.g.; mans impact; future trends or any others).	Course #1	___	___	___	___	___	___
	Course #2	___	___	___	___	___	___
	Course #3	___	___	___	___	___	___

Please check if appropriate:

I consider the above a topic and not a concept. ___
(If you did not check the above, this means that you consider number 19 to be a concept.)

20. Best location (e.g.; location and location problem; man and his culture or any others);	Course #1	___	___	___	___	___	___
	Course #2	___	___	___	___	___	___
	Course #3	___	___	___	___	___	___

Please check if appropriate:

I consider the above a topic and not a concept. ___
(If you did not check the above, this means that you consider number 20 to be a concept.)

21. World regional divisions (e.g.; its origins and dispersals; by continents; by cultural ties; physical ties or any others).	Course #1	___	___	___	___	___	___
	Course #2	___	___	___	___	___	___
	Course #3	___	___	___	___	___	___

Please check if appropriate:

I consider the above a topic and not a concept. ___
(If you did not check the above, this means that you consider number 21 to be a concept.)

TOPICS/CONCEPTS		NUMBER OF CLASS PERIODS SPENT ON THE FOLLOWING TOPICS/CONCEPTS					
		0	1	2	3	4	5 or more
22. Interregional stresses (e.g., spatial diffusion; territories and boundaries; aereal differentiations and similarities or any others).	Course #1	___	___	___	___	___	___
	Course #2	___	___	___	___	___	___
	Course #3	___	___	___	___	___	___

Please check if appropriate:

I consider the above a topic and not a concept. ___
(If you did not check the above, this means that you consider number 22 to be a concept.)

23. Anglo-America (e.g.; human factors, physical factors; economic factors; or any others).	Course #1	___	___	___	___	___	___
	Course #2	___	___	___	___	___	___
	Course #3	___	___	___	___	___	___

Please check if appropriate:

I consider the above a topic and not a concept. ___
(If you did not check the above, this means that you consider number 23 to be a concept.)

24. Latin America (e.g.; Human factors; physical factors; economic factors; or any others).	Course #1	___	___	___	___	___	___
	Course #2	___	___	___	___	___	___
	Course #3	___	___	___	___	___	___

Please check if appropriate:

I consider the above a topic and not a concept. ___
(If you did not check the above, this means that you consider number 24 to be a concept.)

25. Europe and the U.S.S.R. (e.g.; human factors; physical factors; economic factors or any others).	Course #1	___	___	___	___	___	___
	Course #2	___	___	___	___	___	___
	Course #3	___	___	___	___	___	___

Please check if appropriate:

I consider the above a topic and not a concept. ___
(If you did not check the above, this means that you consider number 25 to be a concept.)

TOPICS/CONCEPTS		NUMBER OF CLASS PERIODS SPENT ON THE FOLLOWING TOPICS/CONCEPTS					
		0	1	2	3	4	5 or more
26. Asia (e.g.; human factors; physical factors; economic factors or any others).	Course #1	___	___	___	___	___	___
	Course #2	___	___	___	___	___	___
	Course #3	___	___	___	___	___	___

Please check if appropriate:

I consider the above a topic and not a concept. ___
(If you did not check the above, this means that you consider number 26 to be a concept.)

27. Middle East and Africa (e.g.; human factors; physical factors; economic factors or any others).	Course #1	___	___	___	___	___	___
	Course #2	___	___	___	___	___	___
	Course #3	___	___	___	___	___	___

Please check if appropriate:

I consider the above a topic and not a concept. ___
(If you did not check the above, this means that you consider number 27 to be a concept.)

28. Australia, the Pacific and the Poles (e.g.; human factors; physical factors; economic factors or any others).	Course #1	___	___	___	___	___	___
	Course #2	___	___	___	___	___	___
	Course #3	___	___	___	___	___	___

Please check if appropriate:

I consider the above a topic and not a concept. ___
(If you did not check the above, this means that you consider number 28 to be a concept.)

- - - - - - -

APPENDIX I

DERIVATION TO THE TWENTY-EIGHT TOPICS USED IN THE QUESTIONNAIRE

In the classroom, certain geographical topics must be included so that geography can be effectively represented among the other sciences. The content of a course in an educational institution is by far the most important part, and as content varies from one geography class to another (of the same course title), certain general topics must be included in such classes so that geography students can understand the backbone of geography.

If the student is provided with certain general geographic topics, the necessary foundation needed for an understandable conception and appreciation of intricate and technical concepts will be set forth.[31] Since geography is the subject of man and earth in terms of where, how and why,[32] topics in geography courses must deal with everything on earth that affects man; from different climates and soils to migrations and religions, from one region to another.

---

[31]Douglas C. Ridgley, Geographic Principles (Boston, 1925), p. 9.

[32]John W. Morris, Methods of Geographic Instruction (Waltham, Massachusetts, 1968) p. 129.

Topics are defined by Webster's New Collegiate Dictionary as:

A heading in an outlined argument or exposition.[33]

It is, then, necessary to refer to introductory geography texts in which topics are used as chapter titles. Each of those titles can be further analyzed by students in order to receive a better idea of general topics that are found in the introductory books.

Following, are various, but not all, topics found in introductory geography books in the two-year colleges. A few topics found in Strahler's Introduction to Physical Geography are as follows:

The Geographic Grid and Its Projections

Seasons and Time

The Earth's Atmosphere

Heating and Cooling of the Earth's Surface

Climate Classification and Climate Regimes

Soil Water and the Water Balance

Equatorial and Tropical Climates

Middle Latitude, Polar Artic Climates

Soils and Soil Forming Processes

The Great Soil Groups

Distribution of Natural Vegetation

Landforms and Earth Materials

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[33]Webster's New Collegiate Dictionary, First Edition, Springfield, Massachusetts: G & C Merriam Company, 1973, p. 1231.

A second example would be Trewartha's, Robinson's and Hammond's Fundamentals of Physical Geography.

The Earth and Its Study

Introduction to Climate, Solar and Air Temperature

The Circulation of the Atmosphere, Winds and Pressure

Atmospheric Moisture and Precipitation

Classification of Climates

Water

The Seas

Land-Surface Form, Changes in the Earth's Crust

Sculpturing the Land Surface

Characteristics and Classes of Land-Surface Form

Wild Vegetation

Soils

Mineral Resources

In addition, examples of topics in human geography can be found in Dicken's Introduction to Cultural Geography.

The People, the Place and the Time

The Homeland and Early Migrations of Man

The Present Distribution of Population

Future Population

The Importance of Place

Climate and Man

Growth of the Soil

Mans Use of the Earth and the Mark He Makes on It (economic)

Communications

Languages and Dialects

World Trade and Routes

Men and Nations

A second example of human geography is found in Broek and Webb's A Geography of Mankind.

The Geographic Viewpoint

Nature and Culture

Technology: Origins and Diffusions

Race: Biological Facts and Social Attitudes

The Mosaic of Languages

Religions: Origins and Dispersals

Forms of Economy: Tribal Gathering, Hunting and Herding

Land Use in Traditional Societies

Industrial Nations and Regions

Economic Development

Farm and Villiage

Towns and Cities

Emerging Urban Patterns

The Differential Growth of Population

Population Movements

Following, are examples of topics in regional geography textbooks found in de Blij's Geography: Regions and Concepts.

Regions of the World

The Growth of Europe

Eastern Europe - The Shatter Zone

The Soviet Union- Region and Realm

North America

Middle America and the Legacy of Mesoamerica

Latin, South America

Africa Forms the Key

North Africa and Southwest Asia

India and the Indian Perimeter

China and Its Sphere

Southeast Asia: Between the Giants

Prodigions Japan: The Aftermath of Empire

Australia and the Islands

Another example of a regional text is Morris's World Geography.

Introduction to World Geography

United States

Canada and Greenland

Middle America

South America

Northwestern and Central Europe

Southern Peninsular Europe

Eastern Europe

U.S.S.R.

The Middle East: North Africa and Southwest Asia

Africa South of the Sahara

Central Eastern Asia

South Asia

Southeast Asia

Australia, Oceania and Antarctica

Following is an example of topics found in Abler, Adams and Gould's Spatial Organization.

Order, Science and Geography

Measurement, Relationship and Classification

Location and Spatial Interaction

Spatial Diffusion Processes

Spatial Organization and the Decision Process

Following are topics found in Spencer and Thomas's Introducing Cultural Geography.

Man's Occupation of the Earth

Differential Cultural Development

Interregional Contact

The Recent Convergence of Humanity

The Spiral of Population on a Humanized Earth

Techniques for Resource Extraction and Resource Conversion

Techniques for Space Adjustment and Space Intensification

People in Transformation

APPENDIX J

PROFILE OF THE TWO-YEAR COLLEGE INSTRUCTORS

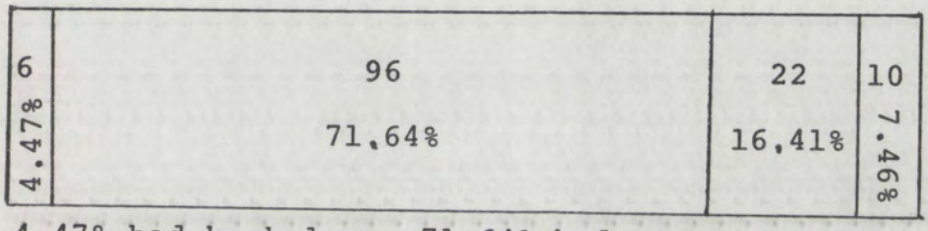
The following twenty-seven figures are the results of part one of the questionnaire. Each question in part one has three corresponding figures; one figure tallies the totals, the second figure tallies the geography major totals, while the third figure tallies the non-geography majors. Each figure is divided into sections designating the number and percentages of the total responses for that particular question.

For example, figure one shows the totals for the highest degrees of all instructors. Six instructors or 4.47% had bachelors as their highest degree; ninety-six instructors or 71.64% had masters as their highest degree; twenty-two instructors or 16.41% were working on their post masters, and ten instructors or 7.46% had a doctorate as their highest degree.

FIGURE #1

HIGHEST DEGREE OF ALL INSTRUCTORS

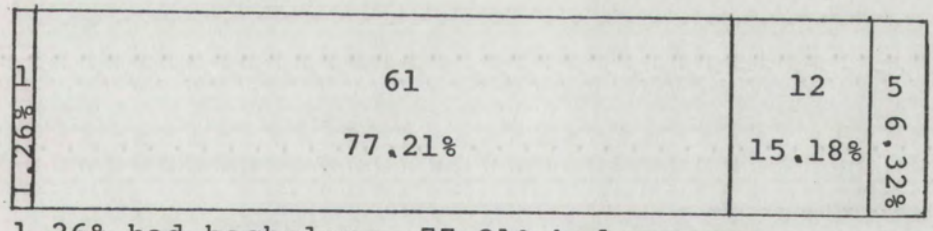
Total



4.47% had bachelors, 71.64% had masters,
16.41% had post masters and 7.46% had doctorates

FIGURE #2

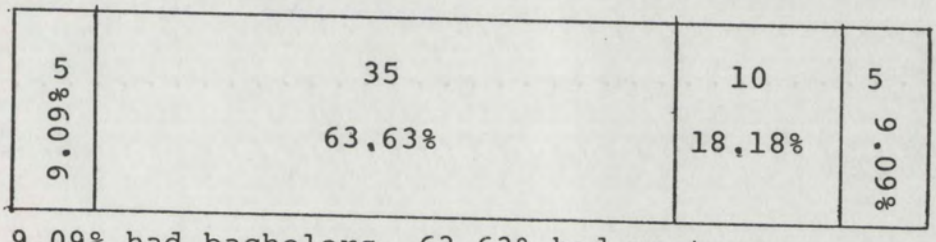
HIGHEST DEGREE OF GEOGRAPHY MAJORS



1.26% had bachelors, 77.21% had masters,
15.18% had post masters and 6.32% had doctorates

FIGURE #3

HIGHEST DEGREES OF NON-GEOGRAPHY MAJORS

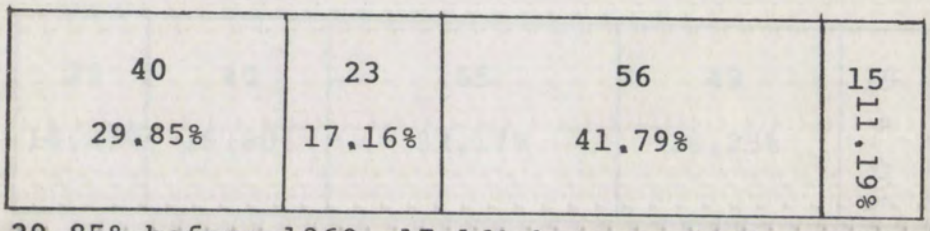


9.09% had bachelors, 63.63% had masters,
18.18% had post masters and 9.09% had doctorates

FIGURE #4

YEAR OF GRADUATION WITH HIGHEST DEGREE

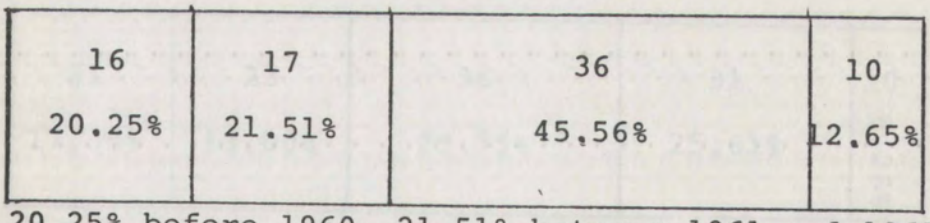
Total



29.85% before 1960, 17.16% between 1961 and 1965, 41.79% between 1966 and 1970 and 11.19% between 1971 and 1973

FIGURE #5

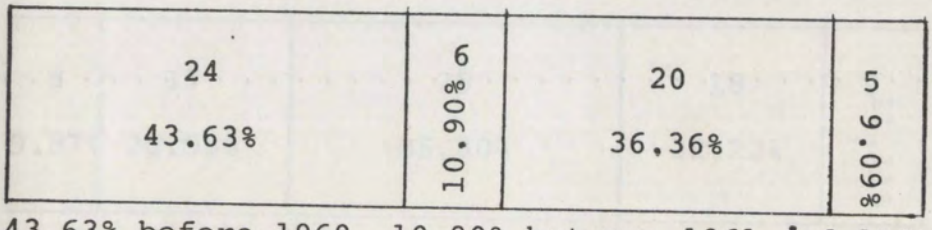
GEOGRAPHY MAJORS YEAR OF GRADUATION WITH HIGHEST DEGREE



20.25% before 1960, 21.51% between 1961 and 1965, 45.56% between 1966 and 1970 and 12.65% between 1971 and 1973

FIGURE #6

NON-GEOGRAPHY MAJORS YEAR OF GRADUATION WITH HIGHEST DEGREE



43.63% before 1960, 10.90% between 1961 and 1965, 36.36% between 1966 and 1970 and 9.09% between 1971 and 1973

FIGURE #7

TEACHING EXPERIENCE OTHER THAN TWO-YEAR COLLEGES

Total

29 14.35%	40 19.80%	65 32.17%	49 24.25%	19 9.40%

14.35% none, 19.80% JHS, 32.17% HS, 24.25% Univ., 9.40% other

FIGURE #8

GEOGRAPHY MAJORS WITH TEACHING EXPERIENCE OTHER THAN TWO-YEAR COLLEGES

21 17.35%	23 19.00%	36 29.75%	31 25.61%	10 8.26%

17.35% none, 19.00% JHS, 29.75% HS, 25.61% Univ., 8.26% other

FIGURE #9

NON-GEOGRAPHY MAJORS WITH TEACHING EXPERIENCE OTHER THAN TWO-YEAR COLLEGES

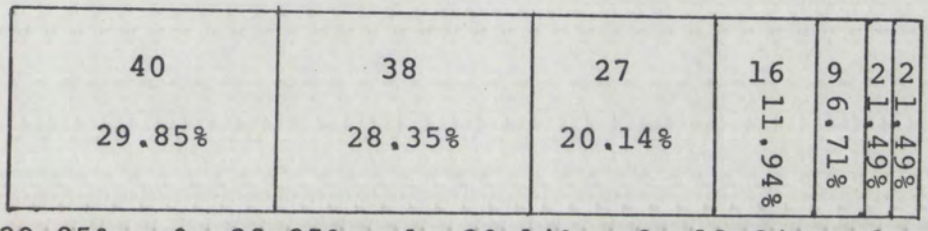
8 9.87%	17 20.98%	29 35.80%	18 22.22%	9 11.11%

9.87% none, 20.98% JHS, 35.80% HS, 22.22% Univ., 11.11% other

FIGURE #10

COURSES TEACHING THIS SEMESTER OTHER THAN GEOGRAPHY

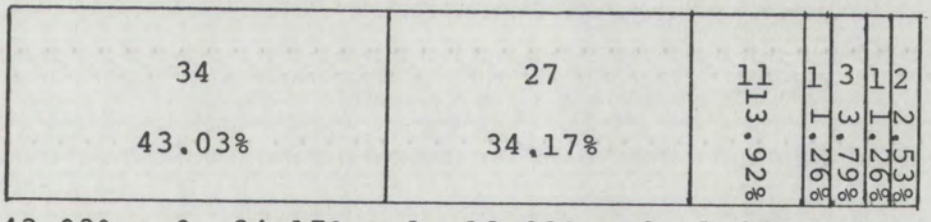
Total



29.85% = 0, 28.35% = 1, 20.14% = 2, 11.94% = 3,
6.71% = 4, 1.49% = 5, 1.49% did not respond

FIGURE #11

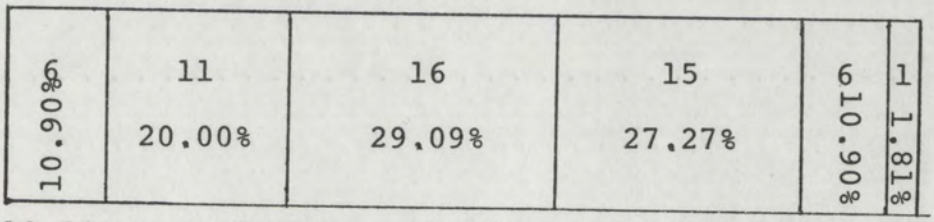
COURSES TAUGHT BY GEOGRAPHY MAJORS THIS SEMESTER
OTHER THAN GEOGRAPHY



43.03% = 0, 34.17% = 1, 13.92% = 2, 1.26% = 3,
3.79% = 4, 1.26% = 5, 2.53% did not respond

FIGURE #12

COURSES TAUGHT BY NON-GEOGRAPHY MAJORS THIS SEMESTER
OTHER THAN GEOGRAPHY

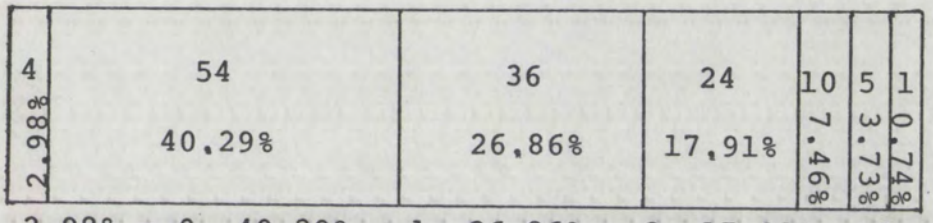


10.90% = 0, 20.00% = 1, 29.09% = 2, 27.27% = 3,
10.90% = 4, 1.81% = 5, 0% did not respond

FIGURE #13

NUMBER OF DIFFERENT GEOGRAPHY COURSES TAUGHT AT PRESENT

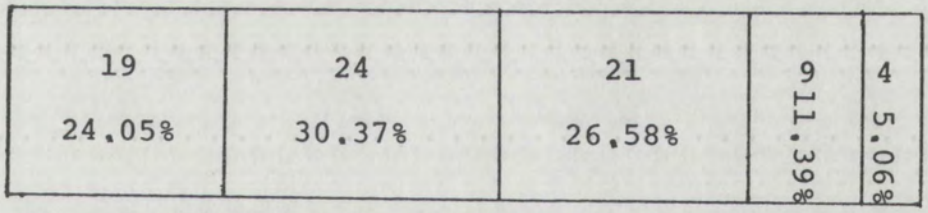
Total



2.98% = 0, 40.29% = 1, 26.86% = 2, 17.91% = 3,
7.46% = 4, 3.73% = 5, 0.74% did not respond

FIGURE #14

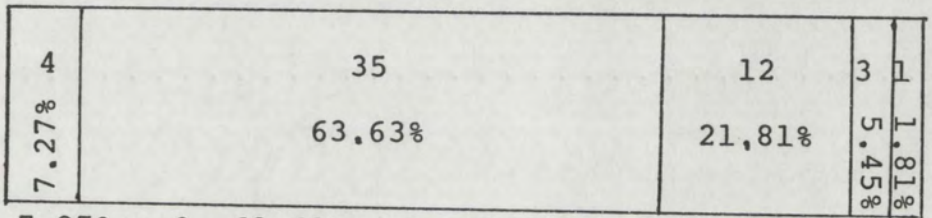
NUMBER OF DIFFERENT GEOGRAPHY COURSES TAUGHT AT PRESENT
BY GEOGRAPHY MAJORS



0% = 0, 24.05% = 1, 30.37% = 2, 26.58% = 3,
11.39% = 4, 5.06% = 5

FIGURE #15

NUMBER OF DIFFERENT GEOGRAPHY COURSES TAUGHT AT PRESENT
BY NON-GEOGRAPHY MAJORS

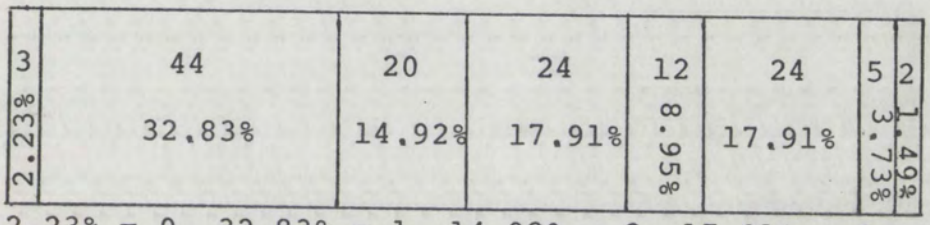


7.27% = 0, 63.63% = 1, 21.81% = 2, 5.45% = 3,
1.81% = 4, 0% = 5

FIGURE #16

TOTAL NUMBER OF GEOGRAPHY COURSES
BEING TAUGHT THIS SEMESTER

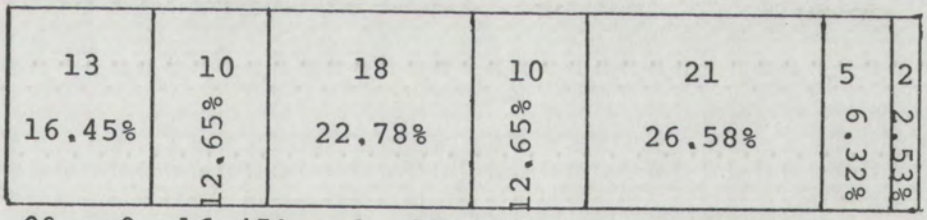
Total



2.23% = 0, 32.83% = 1, 14.92% = 2, 17.91% = 3,
8.95% = 4, 17.91% = 5, 3.73% = 6, 1.49% did not respond

FIGURE #17

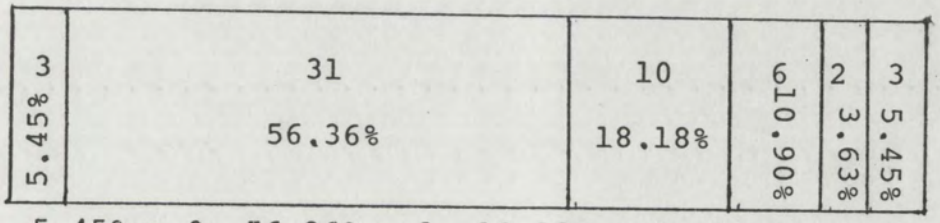
TOTAL NUMBER OF GEOGRAPHY COURSES BEING TAUGHT
THIS SEMESTER BY GEOGRAPHY MAJORS



0% = 0, 16.45% = 1, 12.65% = 2, 22.78% = 3,
12.65% = 4, 26.58% = 5, 6.32% = 6, 2.53% did not respond

FIGURE #18

TOTAL NUMBER OF GEOGRAPHY COURSES BEING TAUGHT
THIS SEMESTER BY NON-GEOGRAPHY MAJORS

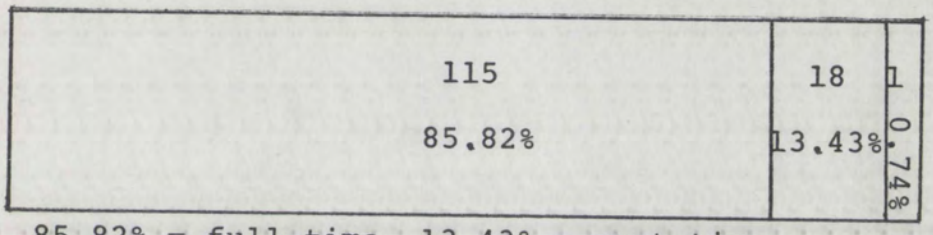


5.45% = 0, 56.36% = 1, 18.18% = 2, 10.90% = 3,
3.63% = 4, 5.45% = 5

FIGURE #19

POSITION - FULL OR PART-TIME

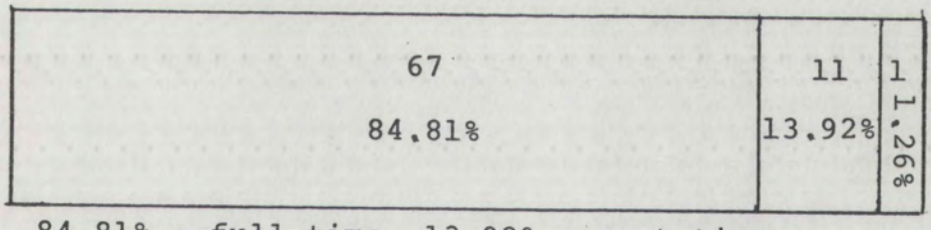
Total



85.82% = full-time, 13.43% = part-time,
0.74% did not respond

FIGURE #20

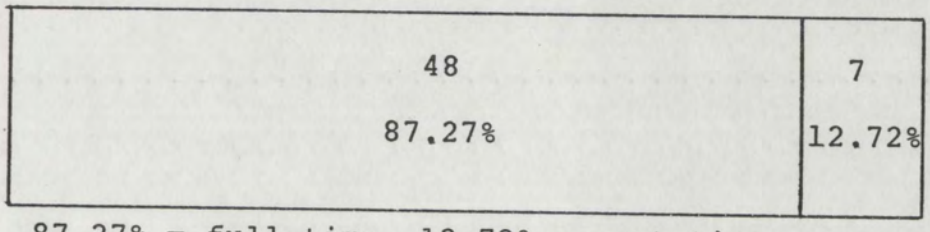
FULL OR PART-TIME GEOGRAPHY MAJORS



84.81% - full-time, 13.92% = part-time,
1.26% did not respond

FIGURE #21

FULL OR PART-TIME NON-GEOGRAPHY MAJORS

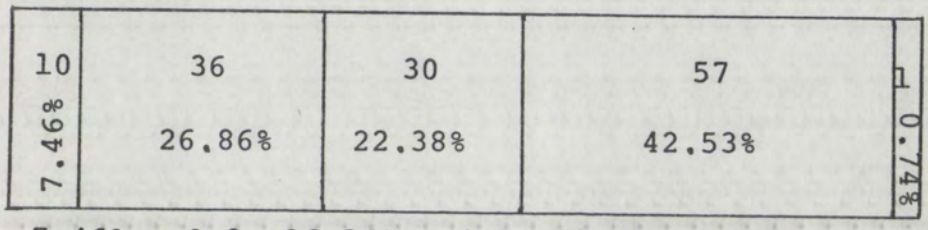


87.27% = full-time, 12.72% = part-time

FIGURE #22

TOTAL YEARS OF EXPERIENCE

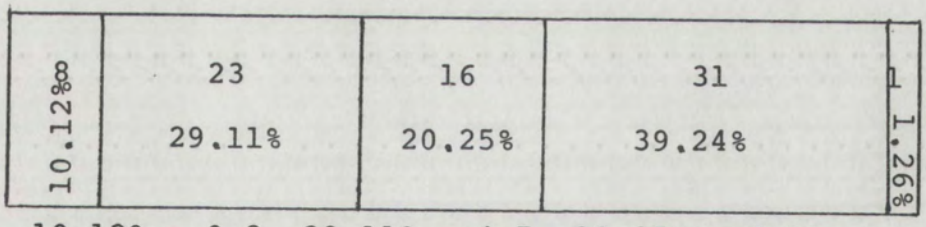
Total



7.46% = 0-3, 26.86% = 4-7, 22.38% = 8-11,
42.53% = 12+, 0.74% did not respond

FIGURE #23

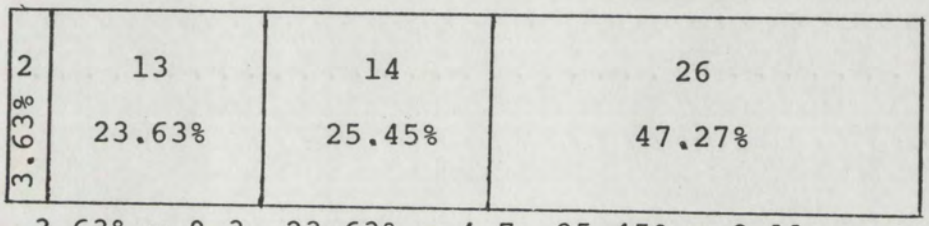
GEOGRAPHY MAJORS TOTAL YEARS OF EXPERIENCE



10.12% = 0-3, 29.11% = 4-7, 20.25% = 8-11,
39.24% = 12+, 1.26% did not respond

FIGURE #24

NON-GEOGRAPHY MAJORS TOTAL YEARS OF EXPERIENCE



3.63% = 0-3, 23.63% = 4-7, 25.45% = 8-11,
47.27% = 12+

FIGURE #25

YEARS OF EXPERIENCE IN TWO-YEAR COLLEGES ONLY

Total

25 18.65%	53 39.55%	28 20.89%	27 20.14%	1 0.74%

18.65% = 0-3, 39.55% = 4-7, 20.89% = 8-11,
20.14% = 12+, 0.74% did not respond

FIGURE #26

GEOGRAPHY MAJORS YEARS OF EXPERIENCE
IN TWO-YEAR COLLEGES ONLY

19 24.05%	31 39.24%	16 20.25%	12 15.18%	1 1.26%

24.05% = 0-3, 39.24% = 4-7, 20.25% = 8-11,
15.18% = 12+, 1.26% did not respond

FIGURE #27

NON-GEOGRAPHY MAJORS YEARS OF EXPERIENCE
IN TWO-YEAR COLLEGES ONLY

6 10.90%	22 40.00%	12 21.81%	15 27.27%

10.90% = 0-3, 40.00% = 4-7, 21.81% = 8-11,
27.27% = 12+

APPENDIX K

GENERAL EDUCATION OF THE TWO-YEAR COLLEGE INSTRUCTOR

The following tables show the general education of the two-year college instructor. Each row shows the name of various courses that the instructor might have taken during his college career, both undergraduate and graduate (if applicable). Each of the eight columns will show the number of credit hours the instructors have taken for each course during their college career. For example, the reader may be interested in knowing how many credit hours instructors with a major in geography have taken in education. In this case, the reader will proceed to Table I where he will find the answer to be: Eight instructors have taken zero hours in education, seven instructors have taken from one to six credit hours, fourteen instructors have taken from seven to twelve hours. thirteen instructors have taken from thirteen to eighteen hours, thirteen instructors have taken from nineteen to twenty-four hours, seven instructors have taken from twenty-five to thirty hours and twelve instructors have taken thirty-one hours or more in education, while five instructors did not answer this question.

Table I concentrates on all geography majors; Table II concentrates on all non-geography majors; Table III concentrates on geology majors; Table IV concentrates on all history majors and Table V concentrates on others, which

is concerned with major fields other than geography, geology and history.

TABLE XLIII

GENERAL EDUCATION
BY SUBJECT

GEOGRAPHY MAJORS

	Semester Hours							
	0	1 - 6	7 - 12	13 - 18	19 - 24	25 - 30	31 +	No Response
Subject Name								
English	0	16	38	13	5	2	1	4
mathematics	7	25	26	9	0	4	0	8
psychology	3	42	16	8	2	1	2	5
foreign language	17	12	26	12	4	1	3	4
philosophy	21	46	4	0	0	0	0	8
business	41	18	9	2	0	0	3	6
biology	16	38	13	3	0	1	0	8
physics	30	27	9	2	1	0	2	8
chemistry	30	24	14	3	0	1	0	7
geology	11	28	14	5	7	4	4	6

TABLE XLIII - CONTINUED

	Semester Hours							
	0	1 - 6	7 - 12	13 - 18	19 - 24	25 - 30	31 +	No Response
Subject Name								
anthropology	28	26	6	3	7	2	2	5
economics	18	33	16	4	2	2	0	4
political science	7	38	20	6	1	0	1	6
sociology	22	34	9	5	1	0	0	8
history	1	8	18	18	8	12	9	45
geography	0	0	0	0	1	2	72	4
education	8	7	14	13	13	7	12	5
astronomy	46	20	3	0	0	0	1	9
meteorology	14	39	8	6	2	1	1	8
art	-	2	1	-	-	-	-	-
archeology	-	-	1	-	-	-	-	-
architecture	-	1	-	-	-	-	-	-
agonomy	-	-	1	-	-	-	-	-

TABLE XLIII - CONTINUED

Subject Name	Semester Hours							
	0	1 - 6	7 - 12	13 - 18	19 - 24	25 - 30	31 +	No Response
entomology	-	1	-	-	-	-	-	-
city planning	-	1	-	-	-	1	-	-
engineering	-	4	2	1	1	-	-	-
botany	-	1	-	-	-	-	-	-
music	-	2	-	1	-	-	-	-
physical education	1	-	-	-	-	-	-	-
journalism	-	-	-	-	-	1	-	-
oceanography	-	-	1	-	-	-	-	-
naval science	-	-	-	-	-	-	1	-
industrial arts	-	-	-	-	1	-	-	-
health science	-	-	-	-	1	-	-	-
social science	-	-	1	-	-	-	-	-
soil science (no hours given)								
biblical history and literature (no hours given)								

TABLE XLIV

GENERAL EDUCATION
BY SUBJECT

NON-GEOGRAPHY MAJORS

	Semester Hours							
	0	1 - 6	7 - 12	13 - 18	19 - 24	25 - 30	31 +	No Response
Subject Name								
English	0	7	26	15	3	0	3	1
mathematics	4	13	14	10	5	2	5	2
psychology	9	25	11	4	2	0	2	2
foreign language	8	8	12	13	6	1	2	5
philosophy	15	27	7	0	0	1	1	4
business	28	13	0	0	2	1	0	11
biology	12	14	13	1	4	2	3	6
physics	9	19	13	4	1	2	2	5
chemistry	9	11	14	6	3	3	2	7
geology	6	14	4	1	2	0	21	7
anthropology	23	14	5	3	1	0	1	8

TABLE XLIV - CONTINUED

	Semester Hours							
	0	1 - 6	7 - 12	13 - 18	19 - 24	25 - 30	31 +	No Response
Subject Name								
economics	12	23	10	2	2	1	2	3
political science	9	20	11	4	4	1	2	4
sociology	19	17	9	1	0	0	3	6
history	1	13	10	3	5	1	20	2
geography	8	6	6	9	9	5	11	1
education	9	3	4	8	9	8	11	3
astronomy	31	14	2	0	1	0	0	7
meteorology	25	17	1	2	1	0	2	7
engineering	-	2	3	-	1	-	2	-
general science	-	-	1	-	-	-	-	-
military science	-	1	-	-	-	-	-	-
conservation	-	1	-	1	-	-	-	-
botany	-	-	1	-	-	-	-	-
agriculture	-	1	-	-	-	-	-	2

TABLE XLIV - CONTINUED

	Semester Hours							
	0	1 - 6	7 - 12	13 - 18	19 - 24	25 - 30	31 +	No Response
Subject Name								
paleontology	-	-	-	-	1	-	-	-
oceanography	-	-	-	1	-	-	-	-
computer science	-	1	-	-	-	-	-	-
forestry	-	-	-	-	-	-	-	2
social welfare	-	-	-	-	-	-	-	1
criminology	-	-	-	-	-	-	-	1
industrial arts	-	-	-	-	-	-	-	1
bio chemistry	-	-	-	-	-	-	-	1
zoology	-	-	-	-	-	-	-	1
public administration	-	-	-	-	-	-	-	1
mechanical drawing	-	-	-	-	-	-	-	1
descriptive geometry	-	-	-	-	-	-	-	1
geophysics	-	-	-	-	-	-	-	1

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