

AN ABSTRACT OF THE THESIS OF

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Title: A LONGITUDINAL STUDY OF SELECTED CHANGES IN THE
PERCEPTION OF THE UNIVERSITY ENVIRONMENT AS HELD
BY STUDENTS WHO PARTICIPATE IN TWO FORMS OF
UNIVERSITY GOVERNANCE

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The purpose of this study was to investigate the change in perception of the university environment that occurred in students who participated in two forms of university governance at Oregon State University. Students who participated as members of joint student-faculty committees (university committees) were compared with members of all-student committees. The time span of the study covered one academic year. The College University Environment Scales was the instrument utilized to measure the students' perceptions of the university environment. Additional data was obtained from the students' files in the Office of the Dean of Students.

The sample used in testing the hypotheses included 102 students. Group I consisted of 51 members of university committees. Group II consisted of 51 members of all-student committees.

The data was subjected to statistical analysis to determine the validity of the following hypotheses:

1. There is no significant difference in the amount of change in the perception of the university environment (as measured by the seven scales of the College University Environment Scales) between student participants on university committees and student participants on all-student government committees, for either male or female members.

2. There is no significant change in the student's perception of the university environment (as measured by the seven scales of the College University Environment Scales) among those participants on university committees for either males or females.

3. There is no significant difference in the amount of change in the student's perception of the university environment (as measured by the seven scales of the College University Environment Scales), among those participating on all-student government committees, for either males or females.

All hypotheses were accepted at the .05 and .01 levels of significance.

The following conclusions were drawn from the findings of this study:

1. Students who participate in university government view the university environment in a similar fashion.

2. Male and female student participants in university government view the university environment in a similar fashion.

3. Student participation in university government resulted in

no significant change from previously held perceptions of the university environment.

4. Student participants on university committees do not view the university environment significantly different from student participants on all-student committees.

The major limitation of the study was the small sample size available for study.

A Longitudinal Study of Selected Changes in the Perception
of the University Environment as Held by Students
Who Participate in Two Forms of
University Governance

by

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A LONGITUDINAL STUDY OF SELECTED CHANGES IN THE
PERCEPTION OF THE UNIVERSITY ENVIRONMENT AS
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I. INTRODUCTION

Today in higher education the increased desire by students for participation in University governance has caused debate among educators in regard to the merits and educational value rendered to students by such participation. Falvey (1952) stated five reasons for involving students within the framework of university governance.

1. Training for citizenship.
2. Education for responsibility.
3. Experience in policy making.
4. Method for student expression of opinion.
5. The development of leaders and followers.

With the current emphasis upon student involvement in university governance, it seems timely to conduct a study on the effects of this involvement upon participating students.

Student involvement in university governance is not unique to the 1960's. Its roots are traceable to the medieval universities of the 13th and 14th centuries. Cardozier (1968) found that the most complete student control of a university occurred at the University of Bologna, due primarily to the students' need for protection from the injustices of the city. Klopff (1960) calls attention to the fact that students formed

power groups known as nations, and patterned these groups after the trade guilds of that era. Horner (1966), Klopff (1960), and Findley (1940) all concur that student control of the medieval university arose for socio-economic reasons rather than for the educational reasons espoused today. Cardozier (1968) advances the premise that most of the students were foreigners in Bologna, which made the unification of student power a natural consequence. The rectors of the University of Bologna were chosen from the student body. To qualify, one had to be at least 24 years of age, must have completed five years' study of law, and had to be unmarried. Professors were not accorded the privilege of voting, which left the total control of the University in the hands of the students.

The pattern of student control was copied in various degrees by many other medieval universities. Students in Germany and France were unable to gain the same degree of power as the Bologna students for two basic reasons: (1) The master teachers were endowed and hence they did not need to rely on fees paid by students. This practice gave control of the universities to the faculty. (2) The average age of students in Germany and France was between 13 and 16 as compared to an age span of 20 to 30 at Bologna.

Horner (1966) views the American college as originally patterned after the English concept of strict faculty control reinforced by the stern Puritan influence of the day.

It was immediately after the American Revolution that the concept of student government again began to take form. Horner (1966, p. 61) describes the growth of American student government in the following manner.

Some ten thousand scholars from America besieged the German institutions of research during the nineteenth century. German culture endowed freedom for students. This concept of student freedom was not inculcated into the American system, perhaps because the faculty policy-making body was already too deeply entrenched. In the 1920's and 1930's the National Self Government Committee Inc. , became the leading force in attempting to co-ordinate and unite student governments. In 1955 this organization was represented on ninety-two percent of our college and university campuses.

According to Leonard (1956, p. 59) student participation in university governance was not uncommon in the early 1800's.

There is ample evidence of student participation in the actual administration of certain of the colleges. . . . At Dickinson College the students were permitted in the early years to select two students to receive the highest honors at graduation.

Leonard continues by stressing the students' role in policy making during the 1800's.

Many instances of students petitioning the trustees are to be found in the records of the colleges and many petitions appear to have been granted. Typical petitions included requests for reinstatement of expelled students, changes in the system of giving honors at graduation, changes in the hours during which the college library should be open, and protests against faculty members who proved weak in head or heart. . . . Occasionally the students actually participated in the college administration, as at Antioch College. . . . The students met and decided what courses they would continue under their

own leadership . . . and the faculty gratefully accepted their decision (Leonard, p. 100).

A growing concern for student participation in university governance during the 1930's and 1940's is expressed by Wrenn (1951, p. 50-51) as follows:

As far as the educational life of the students is concerned, the administration, the faculty, and the students themselves are mutually interested. For this reason it is logical and wise to have student representation on policy forming committees. This development has gained marked impetus during the past decade.

Speaking specifically about the 1940's Mueller (1961, p. 37) states, "One area in which faculty and students come together for joint effort on the campus, the participation of students on faculty or administrative committees, has grown in importance during the 1940's."

The 1950's have been called the era of the acquiescent student. "The situation was little different with regard to policy making in higher education. Students, without protest, submitted to the rules and discords, whatever obligations were demanded of them" (Horner, 1966, p. 58).

In the 1960's a student revolution began on our campuses.

College students are now heedful of a decade of senior concern and counsel against conformity. Students have begun to deviate. Non-conformity is replacing conformity, passiveness is being replaced by activism. Students are becoming more desirous, even demanding, an influential voice in the management of matters affecting them" (Horner, 1966, p. 59).

Significance of Study

The 1960's has seen an increase in the degree of student involvement in university governance.

Williamson and Cowan (1968) reported from a survey conducted in 1967 that over 61 percent of our major universities and colleges have student participants on administrative policy-making committees. In 85 percent of these instances students are voting members.

The American Association of University Professors (1966, p. 376) issued the following statement in regard to the governance of colleges and universities.

The variety and complexity of the task performed by institutions of higher education produce an inescapable interdependence among governing board, administration, faculty, students, and others. The relationship calls for adequate communication among these components, and full opportunity for appropriate joint planning and effort.

The National Association of Student Personnel Administrators (NASPA 1968, p. 68) in its statement on student power issued the following.

The right and capability of students to influence and/or control the University affairs is a reality. NASPA should react to students with the belief that shared power will be a viable part of a new university society.

Many other educators have stressed the importance of involving students in the policy-making structure of the university, but as

Berdie (1966, p. 339) has stated "the research reporting relationships between specific college experience and defined behavioral changes in students is so meager as to be almost nonexistent."

This study is an attempt to add to the current knowledge available on Oregon State University students in the area of their involvement in university governance.

Statement of Problem

Traditionally at Oregon State University student involvement in university governance has been comprised of a student government (Associated Students of Oregon State University) and various student committees and councils, with members of the faculty and administration acting as advisors. Recently a newer alternative has been implemented which has placed students as members of various university committees, which in the past were restricted in membership to members of the University faculty and administration.

The problem was to ascertain whether students who participate as members of university committees change in their perception of the University environment in a different degree than students who participate as members of all-student committees.

Purpose of the Study

The purpose of the study may be summarized by the following statement of objectives:

1. To measure whether the change in perception of the university environment that occurs in students who participate in university committees, for the period of the study, differs significantly from the change in the perception of the university environment which occurs in student members of all-student government committees during the same period of time.
2. To measure the degree of change in perception of the university environment that occurs to those who participate in university committees during the period of the study.
3. To measure the degree of change in perception of the university environment that occurs to those who participate in all-student government committees during the period of the study.

Definition of Terms

University Committees

The committees at Oregon State University whose membership is comprised of members from the student body and University faculty and/or administration.

All-student Government Committees

The forms of government at Oregon State University whose membership is comprised entirely of students.

Requirements for Membership on University Committees and All-student Government Committees

1. The student must be a full-time student at Oregon State University.
2. The student must be a member of the sophomore, junior or senior class.
3. The student must hold a cumulative Oregon State University grade point average of 2.00 or higher based on a range of 0.00 to 4.00.

Intelligence

For the purpose of this study the raw scores of the Scholastic Aptitude Test (SAT) for both the verbal and math scales, plus the cumulative high school grade point average, and the cumulative grade point average earned at Oregon State University at the conclusion of spring term 1969 will be utilized as means of measuring intelligence.

Perception of University Environment

Perception is defined by the seven subscales of the College University Environment Scales. The instrument will be described in

detail in Chapter II of this study.

Occupation of Head of Family

The socio-economic level achieved by the head of family of each student participant as classified by the Hollingshead Two Factor Index of Social Position. A description of this scale is included in Appendix I.

Method

The method employed in this study was to select students from two groups. Group One consisted of those students who were members of university committees. Group Two consisted of those students who were members of all-student committees. There were 51 students in each group, or a total of 102 student participants in the study. Each participant in the study initially completed the College University Environment Scales prior to the convening of the first meeting of the participant's committee and again during the concluding weeks of the academic year. The study covered one academic year (1969-1970) at Oregon State University.

Hypotheses

1. There is no significant difference in the amount of change in the perception of the university environment (as measured by the

seven scales of the College University Environment Scales) between student participants on university committees and student participants on all-student government committees, for either male or female members.

2. There is no significant change in the student's perception of the university environment (as measured by the seven scales of the College University Environment Scales) among those participants on university committees for either males or females.

3. There is no significant difference in the amount of change in the student's perception of the university environment (as measured by the seven scales of the College University Environment Scales) among those participating on all-student government committees, for either males or females.

II. REVIEW OF RELATED LITERATURE

The College University Environment Scales and studies describing its use as an effective instrument for measuring perception are initially reviewed. Subsequently, literature related to student participation in university governance is examined.

Instrument

The College University Environment Scales (CUES), 2nd Edition, by C. Robert Pace, published and distributed by the Institutional Research Program for Higher Education, Educational Testing Service, Princeton, New Jersey, 1967, will be the instrument utilized. This instrument contains 160 true-false items and is to be used in defining the atmosphere or intellectual-social-cultural climate of the university as students perceive it. The following five scales plus two special subscales are quoted from the CUES technical manual (Pace, 1967, p. 26-27, 35).

Scale 1. Practicality

The 20 items (that contribute to the scores) for this scale describe an environment characterized by enterprise, organization, material benefits, and social activities. There are both vocational and collegiate emphases. A kind of orderly supervision is evident in

the administration and the classwork. As in many organized societies, there is also some personal benefit and prestige to be obtained by participation in the system--knowing the right people, being in the right clubs, becoming a leader, respecting one's superiors, and so forth. The environment, though structured, is not repressive because it is responsive to entrepreneurial activities and is generally characterized by good fun and school spirit.

Scale 2. Community

The items in this scale describe a friendly, cohesive, group-oriented campus. There is a feeling of group welfare and group loyalty that encompasses the college as a whole. The atmosphere is congenial; the campus is a community. Faculty members know the students, are interested in their problems, and go out of their way to be helpful. Student life is characterized by togetherness and sharing rather than by privacy and cool detachment.

Scale 3. Awareness

The items in this scale seem to reflect a concern about and emphasis upon three sorts of meaning--personal, poetic, and political. An emphasis upon self-understanding, reflectiveness, and identity suggest the search for personal meaning. A wide range of opportunities for creative and appreciative relationships to painting, music, drama,

poetry, sculpture, architecture, and the like suggests the search for poetic meaning. A concern about events around the world, the welfare of mankind, and the present and future condition of man suggests the search for political meaning and idealistic commitment. What seems to be evident in this sort of environment is a stress on awareness, an awareness of self, of society, and of aesthetic stimuli. Along with this push toward expansion, and perhaps as a necessary condition for it, there is an encouragement of questioning and dissent and a tolerance of nonconformity and personal expressiveness.

Scale 4. Propriety

These items describe an environment that is polite and considerate. Caution and thoughtfulness are evident. Group standards of decorum are important. There is an absence of demonstrative, assertive, argumentative, risk-taking activities. In general, the campus atmosphere is mannerly, considerate, proper, and conventional.

Scale 5. Scholarship

The items in this scale describe an environment characterized by intellectuality and scholastic discipline. The emphasis is on competitively high academic achievement and a serious interest in scholarship. The pursuit of knowledge and theories, scientific or

philosophical, is carried on rigorously and vigorously. Intellectual speculation, and interest in ideas, knowledge for its own sake, and intellectual discipline--all these are characteristic of the environment.

Definition of the Special Subscales

Campus Morale. The items in this scale describe an environment characterized by acceptance of social norms, group cohesiveness, and friendly assimilation into campus life. At the same time, a commitment to intellectual goals is exemplified and widely shared in an atmosphere of personal and social relationships that are both supportive and spirited.

Quality of Teaching and Faculty-student Relationships. This scale defines an atmosphere in which professors set high standards and are perceived to be scholarly, clear-thinking, and flexible. At the same time, this academic quality of teaching is infused with warmth, interest, and helpfulness toward students.

Evidence of the Acceptability of the Instrument

The following studies utilized the College University Environment Scales as an instrument to measure the perceptions held by students of the university environment.

In a study comparing the perceptions held by new students and faculty to those of returning students and faculty at a midwestern

state university, McPeck (1967) found that returning students and faculty held similar views concerning the university. In addition, the results indicated that the expectations of new students were not being met by the university. The greatest difference of perception was attributed to the difference in sex of the students, in both groups under study.

Walsh, Bruce and McKinnon (1969) investigated the effect of an experimental program at the College of Arts and Sciences, Ohio State University. Four hundred and seven students participated in the experimental program. Comparisons were made with students who received the traditional program. The findings indicated that the experimental group placed more emphasis on scholarship, academic achievement, and the practical benefits of the environment. The variation between groups was attributed to the experimental program and not a result of the difference in the sex of the student.

Baker (1966) tested the hypothesis that no difference in the perception of a state university would occur due to the place of residence of students. The comparison was made between residence hall students, students residing in private boarding houses, and students who lived at home with both parents. The findings implied that students who resided in residence halls and boarding houses were more dependent upon the university for the satisfaction of their social needs than were students who resided with their families.

The results of another study (Schoen, 1966) showed no difference in the perception of the university between students who attended New College, the experimental college of Hofstra University, and the entire student body of Hofstra.

Berdie (1967) studied entering freshmen at the University of Minnesota in order to discover if their expectations of university life would be homogeneous. The results showed that the expectations of entering freshmen differed significantly, based upon which college of the university they entered.

A study by Greene (1966) compared the perceptions of the university climate by 111 students enrolled in the University of the Seven Seas Afloat, with their perceptions of colleges previously attended. The conclusions of the study consisted of the following. Students found the Seven Seas campus friendlier, but were somewhat more critical of administrative policies, curriculum, intellectual atmosphere, and scholarship in comparison to the colleges they had formerly attended.

A study investigating the impact of living arrangements on the perception of the college environment (Lindahl, 1967), compared commuting and resident students' from two state colleges, one a suburban college having three percent resident students and the other college having 16 percent resident students. A greater variation in perception occurred between colleges than between residents and commuters of the same college. This study rejected the view that commuting

students have less attachment to college life and less intellectual curiosity than resident students.

Jansen and Windborn (1968) compared the perceptions of the university environment of student social-political action leaders with four other categories of student leaders (Religious, Residence hall, Activity, and Fraternity leaders). The social-political action leaders scored lower on the Awareness and Community scales. Females in all groups scored significantly higher on all scales.

A random sample of 500 juniors and seniors enrolled in the ten colleges of Michigan State University were surveyed to determine whether perceptions of the university differed between colleges (Centra, 1966). In general, students' perceptions of the entire university environment were similar to their perceptions of their own individual college. It was concluded that students tend to generalize from their immediate environment to the environment as a whole.

In an attempt to determine whether the perception of a residential junior college differs among commuter students, resident students and faculty, Gelso and Sim (1968) compared the perceptions of 111 residents, 106 commuters and 31 faculty. The results indicated that the perceptions of all three groups were similar.

Berdie (1966) conducted a longitudinal study to ascertain if students' attitudes altered, owing to their college experiences. The sample was drawn from the freshman class at the University of

Minnesota. Seven thousand entering freshmen completed the College University Environment Scales prior to beginning classes and six months later 292 students from the original sample retook the instrument. The study rejected the conclusion that college experience, in general, results in any significant change in students' attitudes toward their perceptions of the university environment.

All of the authors reviewed found the College University Environment Scales to be a satisfactory instrument for measuring students' perceptions of the university environment.

McPeck (1967), Schoen (1966), Greene (1966) and Lindahl (1967) found the instrument to be especially reliable in measuring perceptions between different student subcultures.

Berdie (1966), Jansen and Windborn (1968) found the instrument to be valid in measuring changes in perceptions which occurred because of some particular college experience.

The majority of authors stress the need to control for sex as a variable which might effect responses to the questionnaire.

Degree of Student Participation in University Governance

The literature reviewed expresses the variety of views concerning the role and the degree of student involvement in university governance.

Younger (1931) attacked the concept of paternalism in the area of

student social life. Students should govern themselves in the areas of social activities, he said, especially in the areas of discipline, traffic regulations, and fraternity pledging. "It is essential to allow student self-government, if the purpose of education is to develop self-responsibility among students" (Younger, 1931, p. 206).

In examining the college environment, Cowley (1935) noted that student-faculty relations were related to the days when they were sworn enemies. It was further stated that the social control of student behavior was basically a product of tradition. The greatest effect upon the college environment was found to be the influence of the outside world, rather than any college-oriented experience. To compensate for this outside effect, Cowley concluded that student advice should be sought in order to intellectualize the college atmosphere.

Kelly (1938) reported the results of a meeting between students and college administrators in regard to the students' role in university governance. As a result of this meeting, it was concluded that

(1) faculty, students and administrators should meet in common council, to exchange points of view and

(2) students, faculty and administrators should have separate organizations for problems unique to their own areas.

The view expressed by Findlay (1940) stressed that students lacked the maturity needed for involvement in the major policy decisions of the university. Students should concentrate their energies in those

areas which contribute to their social activities.

Lund (1942) describes the community form of college government, initiated at Antioch College in 1926, which incorporates students, faculty and administrators into one governing body.

The argument is made for greater acceptance of this concept in higher education due to its relevance to our democratic way of life.

The following statement summarizes the author's view.

The college must be a significant agency in the present for the promotion of democratic living. Implicit in this proposal are fundamental changes in the context, organization and administration of collegiate education. . . . to meet tasks of preparing for a democratic society we must engage all members of the campus community, faculty and students in meaningful co-operation (Lund, 1942, p. 7).

In an historical critique of student involvement in university governance Falvey (1952) states that student involvement is part of the heritage of American education. A review of 40 New England Colleges for the year 1899 indicated that students participated in five areas of university governance:

1. Student Courts
2. Advisory Committees to Faculty
3. Student Discipline Boards
4. Residence Hall Policy Boards
5. Student Councils

The results of a study by Millet (1962) found that student power

has at least three dimensions, (1) economic, (2) social and (3) academic. It was advanced that this power should be recognized by the academic community as vital to its welfare and that students should be active participants in the policy-making process.

Freedman (1965) describes the university as being comprised of a separate student and faculty culture. He senses these two cultures developing an equalitarian relationship, due to the social concerns of the 1960's.

The following quotation summarizes the view of Cutler (1966, p. 157) in regard to student involvement in university governance.

If the democratic system is to prevail and students are to develop trust in the system, students must participate in decision making. Even in their impatience and immaturity, even with their revolutionary demands to become a part of the decision making process in the university, the students' stake in the total process must be recognized. To do less is to deny a fundamental principle of the society and to threaten the stability of the university community.

Somers (1966) believes that a discrepancy exists between belief and practice in student government. While students are thought to share considerable responsibility in the college community, the real power is retained by the faculty and administration. The problem would be better solved if students had a say in the decision-making process.

The quest for involvement by students in university governance will not have any long range effect, according to Altback (1966). He

says it will be the outside elements of society which will be the dominant force in change within the university.

Student participation in university governance should become the fundamental aim of all student affairs programs. This view is stated by Koile (1966), who further states that this participation must be based upon greater knowledge of the student.

Gould (1966, p. 55) sees the future of our nation as being directly related to student participation in university governance. "If we expect the student to govern himself and later his country, we must provide him the experiences of governing himself and his campus world here and now."

The students of today are facing two problems (Kornhouser, 1967), both of which are attributable to the mass depersonalization of our universities. The student must either accept the depersonalization, loss of identity, or seek personalized relationships and commitment to the university. The solution according to Kornhouser is to grant students a greater role in the policy-making process of the university.

The reason for student participation in university governance is stated by Keys (1968, p. 78).

The involvement of students in academic planning for its purely practical value to the institution as a whole allows for student opinion to be heard from the very onset. . . . Since students are generally the largest constituency . . . a healthy dose of their opinion from the initial stages . . . insures that institutional development, will be ultimately accepted to those whom it is supposed to benefit.

Neff (1968) contends that student discontent centers upon the quality of education. Student leaders feel that they cannot operate within the administrative machinery of the university. Students have no alternative except to organize into a separate power bloc. Neff suggests an alternative of channeling student power into joint participation with faculty on the departmental level, especially in the area of curriculum planning.

Students should not be granted an official voice in the decision-making process related to educational matters (Kerlinger, 1968). Kerlinger further states that the faculty is the legitimate body to regulate educational matters. The students should act only as critics and become involved only in certain areas related to their social life.

A remedy to the alienation and depersonalization that students experience may be the inclusion of students as partners within the management structure of the university (Williamson, 1968). The author stresses the need for students to begin developing the democratic skills needed for such participation.

In summary students initially were treated in a paternalistic fashion especially in the area of their social life. The greatest impairment to student involvement prior to World War II was the prevailing view of a lack of maturity among students. Immediately following World War II student involvement centered around areas under the sphere of the Dean of Students. Since World War II there

has been growing concern to admit students to a larger spectrum of university governance. However, another contemporary view suggests that the faculty is the legitimate arm in making educational decisions.

Configuration of Student Involvement in University Governance

The literature indicates a wide variety of alternatives for student participation in university governance.

Harriman (1935), describes the All-student Congress as an effective form of student participation in university governance. Furthermore, he expresses a desire to see an increase in the use of joint student-faculty committees in those areas directly related to student activities. The author was instrumental in originating the student-faculty committee structure in 1933 at Bucknell University.

McKown (1944) advances the argument in favor of a strong student senate as necessary to allow student opinion to be heard. The basic weakness in student government is the prevailing policy of assigning advisors, instead of allowing the students to make their own choice. The basic fear of students to having assigned advisors is that student senate would be dominated by such advisors.

The close of World War II saw a surge of veterans matriculating on many campuses across the country. The American Council on

Education (1945), stimulated basically by the maturity of the returning veterans, issued a monograph calling for the formation of combined student-faculty senates and the inclusion of students on all faculty committees to insure a representative form of university governance.

Klopf (1960) described the following five forms of student participation as characteristic of the late 1950's.

1. Community. A joint student-faculty senate in addition to a joint student-faculty committee structure.
2. Student Council. Students elected directly from the student body.
3. Organizational Council. Student representatives chosen from various clubs and interest groups.
4. Bicameral Government. A student council with separate executive and legislature bodies.
5. The Association. All students of university become members on the payment of a fee.

The formation of various joint student-faculty committees resulted from the reorganization of the student senate structure at the University of Minnesota in 1960. Bloland (1961) claims the revision was necessary because the traditional form of student government did not allow students to become involved in the critical issues of the university.

In an analysis of university government, Butler (1966) encourages the opening of a continuing dialogue between students, faculty and administrators as the foundation of any form of university governance.

Nelson (1967) states that university governance, regardless of its form, needs to create a climate conducive to the development of youth.

The Students for a Democratic Society (SDS) propose the following proposition relevant to university governance.

The concept of student government should be abolished, due to its lack of real power. In its place students should form non-elective 'Free Student Unions' power blocs capable of demonstrating the might to achieve selected goals (Davidson, 1967, p. 8).

As an alternative to the power struggle in our universities Hallberg (1968) suggests the incorporation of students, faculty, and administrators into one central form of government.

Bowles (1968) asserts the fact that students must understand the real sources of power before selecting a method for participation. The president, academic deans, and departmental chairmen are described as the real sources of power. The conclusion reached is that students should seek involvement at the department level, since this is the level which has the most influence over their academic careers.

Three types of student involvement are recommended by Schwebel (1968). Students should (1) work through existing structures, (2) develop Free Universities and (3) form experimental colleges

within the larger university structure.

Butts (1968, p8) argues for a joint faculty-student government as follows: "The risks of a separate student government results in students and faculty perceiving each other as enemies."

The current practice of a separate student government as a means of student involvement in university governance is ineffective and should be replaced by informal faculty-student committees at the departmental level (Johnstone, 1969). He continues that students should become advisors to departmental policies by developing informal relationships with faculty members.

Powell (1969) presents the view that students should share equally in the power structure of the university, having an equal vote on all issues.

The administrative unit of large universities should be decentralized into smaller colleges, which include student representation in the decision-making process (Waggoner, 1969).

The forms of student participation range from all-student councils to joint student-faculty senates. The most popular structure found in the literature encourages the utilization of students as members of joint faculty-student committees.

Consequences of Student Participation

The literature describing the impact of student participation, both upon the students themselves and the total university environment, is extensive in range.

Angell (1928) found that conformity and prestige were the dominant influences which caused students to participate in student activities. In addition, the study found that males predominated in leadership roles.

The results of a study by Vineyard (1930) denotes that both faculty and students viewed training for citizenship as the most positive effect of student government.

A significant study on student involvement in university governance (McMahon, 1932) at Rutgers University, implied that students seek participation in areas related to athletic policy and the management of social functions. Students were least concerned with involvement in the areas of curriculum and scholastic probation. In addition, the study proposed that student interest for involvement decreases from the freshman to senior year.

In another study from the 1930's, Anderson (1938) contends that the underlying purpose of student government was the training of students for future citizenship roles.

A descriptive study of 205 institutions of higher learning by

Patterson (1943), regarding student government ascertained the following information:

1. 80 percent of the institutions reported some form of student government.
2. 73 percent of the institutions reported that some university administrative office was responsible for the conduct of student government.
3. 72 percent of the institutions reported having joint student-faculty committees in the sphere of student activities.
4. 75 percent of the institutions reported that members of the faculty and university administration acted as advisors to student government.
5. all institutions reported that student government fostered a positive effect upon the university environment.

The basic purpose of student government is to insure the development of personal responsibility in the behavior of students. Fitzpatrick (1947) also advances that students and university administrators should together formulate the policy decisions in the area of social activities.

Stroup (1957) analyzed the worth of joint student-faculty committees. The following were listed as disvalues of such committees:

1. Discontinuity. Students not stable, change yearly.
2. Incompetence. Students lack knowledge and understanding.
3. Immaturity. Students lack responsibility.

4. Limited time of students. Primary concern should be with classroom activities.

5. Lack of authority. Students have no legitimate authority.

6. Power-mindness. Students in legal position of child, therefore, not a member of the power structure.

The following were considered as values of joint committees.

1. Educational benefits. Training for citizenship.

2. Morale. Making students aware of university problems.

In a report describing the impact of student involvement in university governance Lunn (1957) made the following observations.

1. Student government is not a good indicator of student involvement.

2. The best indicator of student involvement was found to be the Community form of university governance (student-faculty combined senate).

3. The traditional thinking concerning students must be overcome and new procedures developed to insure the improvement of student-faculty relationships.

Faculty members and student personnel administrators both tend to endorse the educational value of student involvement in university governance. Makuen (1964) also found that student personnel administrators were reluctant to accept students as participants in the policy-making process.

Student government should be an effective leadership and administrative experience for college students. The impact of a student government program should improve the quality of student performance and learning, and should produce adults educated for participation in community affairs (Davie, 1965).

Williamson and Cowan (1966), in a study concerning student involvement in college policy-making, found three effects upon the college environment when students were allowed to participate in the decision-making process.

1. The power gained by students resulted in greater student autonomy.
2. Administrators found it easier to gain support for their policies, when students participated in making the decisions.
3. A more rational resolution of areas of conflict was found between the students and the administration.

In a study that sampled student opinion from three college campuses (Golden and Rosen, 1966), it was found that students preferred to participate in the areas which hold a direct and immediate influence over their lives. These areas included the academic policy (departmental level), visitation policies in residence halls, and off-campus housing regulations.

Martin (1967) concludes that the principal effect of student involvement is ceremonial because students are asked to participate

where it matters least.

Initially personal prestige and training for future citizenship was the dominant reason for student participation in university governance. Since the 1940's a point of view has developed encouraging student involvement for its educational and practical values.

Summary of Reviewed Literature

The vast majority of literature available in the area of student participation in university governance is presented in topical form expressing various principles relative to the merits of such participation. The field of student participation in university governance is notably deficient in studies of a research nature.

The preponderance of literature, regardless of the chronological span, emphasizes the necessity for student participation in university governance.

The literature prior to World War II inclined to encourage student involvement in the specific area of student activities. Ensuing literature has displayed greater concern for involving students in all levels of university governance.

III. PROCEDURES AND DESIGN

Initially the procedures employed in the collection of data will be described, followed by an analysis of the student sample and an explanation of the statistical design.

Procedures

The collection of data was accomplished in the following chronological steps.

Pre-Test of Instrument

The student participants completed the College University Environment Scales prior to their first scheduled committee meeting, of the 1969 academic year. The questionnaire was administered at the conclusion of an orientation meeting conducted by the Oregon State Student Senate for all students participating in university governance. Twelve student participants who did not attend the meeting completed the instrument individually at the Student Activities Center in the Memorial Union Building on the campus of Oregon State University.

Collection of Personal Data

The following personal data for each student was assembled from the official records of the Office of the Dean of Students.

- (a) Scholastic Aptitude Test Verbal (SAT-V)
- (b) Scholastic Aptitude Test Math (SAT-M)
- (c) Accumulative high school grade point average
- (d) Record of high school extracurricular activities
- (e) Record of past experience in Oregon State University
Student Government Activities
- (f) Occupation of head of student's family household
- (g) College class
- (h) Age of student participants as of December 31, 1969
- (i) Accumulative college grade point average as of June 1969

Post Administration of Instrument

The instrument was administered to the student participants during the last week of April 1970. This time was chosen because the campus student elections held in April caused a change in the membership of the all-student committees. As was the case for the pre-administration of the instrument, the student participants completed the instrument at the conclusion of a meeting held by the Oregon State Student Senate. Eight students who were not in attendance

completed the instrument individually at the Students Activities Center.

Student Participants

All students participating in the study were either sophomores, juniors, or seniors at Oregon State University.

Selection of Sample

Students selected for the study were either members of university committees or all-student government committees. A total of 73 students were members of university committees and 101 were members of all-student government committees for the academic year 1969-1970. The total membership list for both groups was made available by the Office of the Dean of Students. A list of committees utilized for this study may be found in Appendix II.

In addition to meeting the university requirements for membership (see definition of terms, Chapter I) the total population was initially reduced by including only those students who were first-year participants on their respective committees. The number of remaining eligible participants is shown in Table 1.

In order to make the groups comparable, the sample size of student participants on all-student government committees was reduced to 28 males and 23 females by the use of the random number

sampling technique (Snedecor and Cochran, 1967). Eight participants in the study were transfer students, but had completed at least one academic year as full-time students at Oregon State University prior to the study. During the period of the study student participants were scheduled for weekly or bimonthly committee meetings.

Table 1. Eligible Student Participants.

	Male	Female	Total
All University Committees	28	23	51
All-Student Committees	39	29	68

Table 2 shows the mean number of committee meetings attended by each group and the mean number of scheduled meetings for the same period. This information was obtained from records made available by the executive office of the Oregon State Student Senate:

Table 2. Scheduled Committee Meetings and Average Attendance.

	Scheduled Meetings	Actual Average Attendance by Group
All University Committees	30.7	27.7
All-Student Committees	28.9	26.4

Statistical Treatment of Data

The analysis of covariance and analysis of variance models were the statistical methods employed in testing the following null hypotheses:

1. There is no significant difference in the amount of change in the perception of the university environment (as measured by the seven scales of the College University Environment Scales) between student participants on university committees and student participants on all-student government committees, for either male or female members.

2. There is no significant change in the student's perception of the university environment (as measured by the seven scales of the College University Environment Scales) among those who participated on university committees, for either males or females.

3. There is no significant difference in the amount of change in the student's perception of the university environment (as measured by the seven scales of the College University Environment Scales) among those who participated on all-student government committees, for either males or females.

Analysis of covariance represents an extension of analysis of variance and allows for the correlation between initial and final scores (Snedecor and Cochran, 1967). Covariance is especially

appropriate since the student sample was selected because of participation in two forms of university governance and it was not possible to fully equate both groups in the initial phases of the study. Through covariance it is possible to effect adjustments in final scores which will allow for differences in some initial variables.

For the purpose of this study a two-way classification model was established. University committees and all-student committees were designated as one classification variable and sex was designated as the second classification or criterion variable.

Seven control variables were treated as covariates, and their effects upon subject responses to the instrument were measured in order to control for any initial difference between the two criterion variables under study.

Since the purpose of this study was to investigate student participation in university governance it was necessary to implement certain controls which might affect student responses. Intelligence, age, occupation of head of household, and class standing were all variables which various studies by Lindahl (1967), Schoen (1966), and Centra (1966) found could affect student response to the instrument.

In addition, high school activities and previous experience in university student government organizations were treated as covariates as an additional attempt to control for past experience.

Covariate Variables

Intelligence

Scholastic Aptitude Test Verbal (SAT-V), Scholastic Aptitude Test Math (SAT-M), Accumulative High School Grade Point Average, and the Accumulative College Grade Point Average were each treated as a measure of intelligence. Tables 3 through 6 represent a general description of the distribution of each of these variables of intelligence for the sample. Each table shows a distribution based on sex for each of the two groups under study. A single mean for intelligence was computed by combining the means of the SAT-V, SAT-M, Accumulative High School Grade Point Average, and the Accumulative College Grade Point Average.

By examining Tables 3 through 6 it is evident that the two groups show some differences in their intelligence profiles. Tables 3, 4, and 5 reveal that the all-student committee participants have somewhat higher SAT scores and high school grade point averages. It may be noted that in Table 7 members of university committees surpass all-student committee members in accumulative college grade point averages. This fact may be explained by examining Tables 9 and 10. It is indicated that university committee members are somewhat older and have achieved a higher class standing. It may be that those who survive to the junior and senior year would have somewhat

Table 3. Distribution of Scholastic Aptitude Test Verbal (SAT-V)

	300-349	350-399	400-449	450-499	500-549	549-599	600-649	650-699	700 +	Total	Mean
	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	
Total	3 (3.6)	6 (6.7)	10 (11.2)	18 (20.2)	17 (19.1)	13 (14.6)	13 (14.6)	8 (8.9)	1 (1.1)	89* (100)	525
Male	1 (2)	5 (10)	6 (12)	12 (24)	10 (20)	7 (14)	3 (6)	6 (12)	0 (0)	50 (100)	508
Female	2 (5.1)	1 (2.6)	4 (10.3)	6 (15.4)	7 (17.9)	6 (15.4)	10 (25.6)	2 (5.1)	1 (2.6)	39 (100)	528
University Committees	2 (4.1)	4 (8.2)	5 (10.2)	13 (26.5)	8 (16.3)	5 (10.2)	7 (14.3)	5 (10.2)	0 (0)	49 (100)	512
All-Student Committees	1 (2.5)	2 (5)	5 (12.5)	5 (12.5)	9 (22.5)	8 (20)	6 (15)	3 (7.5)	1 (2.5)	40 (100)	546

*Results were not available for 6 male and 7 female participants.

Table 4. Distribution of Scholastic Aptitude Test Math (SAT-M)

	300-349		350-399		400-449		450-499		500-549		550-599		600-649		650-699		700 +		Total		Mean
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	
Total	2	2.2	6	6.7	6	6.7	7	7.9	9	10.1	18	20.2	15	16.9	15	16.9	11	12.4	89	100	535
Male	1	2	1	2	3	6	5	10	4	8	8	16	9	18	10	20	9	18	50	100	611
Female	1	2.6	5	12.8	3	7.8	2	5.1	5	12.8	10	25.6	6	15.4	5	12.8	2	5.1	39	100	541
University Committees	1	2.0	3	6.2	5	10.2	5	10.2	7	14.3	8	16.3	5	10.2	8	16.3	7	14.3	49	100	508
All-Student Committees	1	2.5	3	7.5	1	2.5	2	5	2	5	10	25	10	25	7	17.5	4	10	40	100	622

Results not available for 6 male and 7 female participants

Table 5. Distribution of Accumulative High School Grade Point Average

	2.00-2.49		2.50-2.99		3.00-3.49		3.50-4.00		Total		Mean
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	
Total	4	4.3	27	28.4	33	34.7	31	32.6	95	100	3.28
Male	3	5.8	19	36.5	18	34.6	12	23.1	52	100	3.19
Female	1	2.3	8	18.6	15	34.9	19	44.2	43	100	3.38
University Committees	3	6.2	13	27.1	12	25	20	41.7	48	100	3.27
All-Student Committees	1	2.1	14	29.8	21	44.7	11	23.4	47	100	3.29

Results not available for 4 males and 3 female participants

Table 6. Distribution of Accumulative College Grade Point Average

	2.00-2.49		2.50-2.99		3.00-3.49		3.50-4.00		Total		Mean
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	
Total	23	22.5	39	38.2	26	25.5	14	13.8	102	100	2.89
Male	9	16.1	28	50	13	23.2	6	10.7	56	100	2.85
Female	14	30.4	11	23.9	13	28.3	8	17.4	46	100	2.93
University Committees	8	15.7	17	33.3	16	31.4	10	19.6	51	100	2.99
All-Student Committees	15	29.4	22	43.1	10	19.6	4	7.9	51	100	2.79

higher grade point averages. On the other hand it may also be that the younger students may face a higher degree of academic competition. As might be expected females tend to have higher SAT-V and accumulative grade point averages both at the high school and college level with male scores much higher on the SAT-M level.

High School Activities

High school participation in the following areas was compiled and weighted on a scale of zero to five for each student.

- (a) No participation
- (b) Student government (any form)
- (c) Varsity athletics
- (d) Departmental clubs (language, biology, etc.)
- (e) Social activities (Hi-Y, Boosters, 4-H, F.F.A., etc.)
- (f) Miscellaneous

Table 7 illustrates the number of high school activities participated in by each student. The groups are highly similar in regard to their involvement in high school activities.

Previous Experience in University Student Government Organizations at Oregon State University

Previous experience was weighted from zero to three based on the following criteria.

Table 7. Degree of Participation in High School Activities

	0		1		2		3		4		5		Total		Mean
	Activities		Activity		Activities		Activities		Activities		Activities		N	(%)	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	
Total	3	2.9	8	7.8	27	26.5	42	41.2	19	18.6	3	2.9	102	100	2.74
Male	3	5.4	5	8.9	16	28.6	20	35.7	10	17.9	2	3.5	56	100	2.63
Female	0	0	3	6.5	11	23.9	22	47.8	9	19.6	1	2.2	46	100	2.87
University Committees	1	2	4	7.8	10	19.6	23	45.1	11	21.6	2	3.9	51	100	2.88
All-Student Committees	2	3.9	4	7.8	17	33.3	19	37.3	8	15.7	1	2	51	100	2.59

- (0) Not at all
- (1) One organization
- (2) Two organizations
- (3) Three or more organizations

Table 8 depicts the number of activities participated in by each student. Student participants on university committees show a slightly higher degree of participation probably due to their greater tenure in the university as shown in Table 9.

Table 8. Previous Experience in Oregon State Student Government Organizations

	0		1		2		3+		Total		Mean
	Activities		Activity		Activities		Activities		N	(%)	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	
Total	35	34.3	51	50	5	4.9	11	10.8	102	100	.97
Male	18	32.1	24	42.9	4	7.1	10	17.9	56	100	1.1
Female	17	37.0	27	58.6	1	2.2	1	2.2	46	100	.80
University Committees	16	31.4	20	39.2	5	9.8	10	19.6	51	100	1.27
All-Student Committees	19	37.3	31	60.8	0	0	1	1.9	51	100	.66

Class Standing

The class standing for each student as of the fall term 1969-1970 was utilized for the study. Table 9 shows the distribution of the student sample in regard to class standing. Members of university committees are primarily juniors and seniors, while all-student committee members are primarily sophomores and juniors.

Table 9. Distribution of Class Standing of Student Participants.

	Soph.		Jr.		Sr.		Total		Mean
	N	(%)	N	(%)	N	(%)	N	(%)	
Total	36	35.2	33	32.4	33	32.4	102	100	2.97
Male	17	30.4	20	35.7	19	33.9	56	100	3.03
Female	19	41.3	13	28.3	15	30.4	46	100	2.89
University Committees	7	13.7	20	39.2	24	47.1	51	100	3.33
All-Student Committees	29	56.9	13	25.5	9	17.6	51	100	2.60

Age

The chronological age of each participant as of December 31, 1969 was computed for the sample. The range had a lower limit of 19 years and an upper limit of 21 years of age. Table 10 illustrates the distribution of age in years. Student participants on all-student committees are younger than student participants on university committees.

Table 10. Distribution of Age in Years.

	19		20		21		Total		Mean
	N	(%)	N	(%)	N	(%)	N	(%)	
Total	30	29.4	34	33.3	38	37.3	102	100	20.06
Male	16	29.4	19	33.9	21	37.5	56	100	20.08
Female	14	30.4	15	32.6	17	37.0	46	100	20.04
University Committees	4	7.9	20	39.2	27	52.9	51	100	20.43
All-Student Committees	26	50.9	14	27.5	11	21.6	51	100	19.70

Occupation of Head of Household

The following seven categories quoted directly from the Hollingshead Two Factor Index of Social Position were utilized to analyze the economic level of each participant's family (Hollingshead, 1957, p. 11).

1. Higher executives, major professionals with college degrees (doctors, lawyers, engineers, foresters), and owners of large concerns.
2. Other professionals (teachers, accountants, civil service, pharmacists, optometrists), owners of medium sized business and managers of large concerns.
3. Semi-professionals (photographers, morticians, appraisers, surveyors, reporters), small business owners, managers and agents.

4. Clerks, technicians, farmers and farm owners.
5. Skilled manual employees, foremen and farm laborers.
6. Machine operators and semi-skilled employees.
7. Unskilled employees.

Table 11 shows the economic level based on the above criteria for each participant's family. The modes of all groups are in the middle income ranges.

School

Oregon State University has the following nine undergraduate schools.

1. Agriculture
2. Business and Technology
3. Education
4. Engineering
5. Forestry
6. Home Economics
7. Humanities and Social Science
8. Pharmacy
9. Science

Table 12 shows the distribution of the student sample in regard to school. The highest percentage of males are members of the schools of Engineering, Business and Technology and Humanities and

Table 11. Distribution of Socio-economic Level by Occupation of Head of Family

	1		2		3		4		5		6		7		Total		Mode
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	
Total	25	24.5	12	11.8	30	29.4	15	14.7	17	16.7	3	2.9	0	0	102	100	3
Male	14	25	4	7.1	15	26.8	10	17.9	11	19.6	2	3.6	0	0	56	100	3
Female	11	23.9	8	17.4	15	32.6	5	10.9	6	13.0	1	2.2	0	0	46	100	3
University Committees	14	27.5	8	15.7	13	25.5	3	5.9	11	21.6	2	3.8	0	0	51	100	3
All-Student Committees	11	21.6	4	7.8	17	33.3	12	23.5	6	11.8	1	2	0	0	51	100	3

- 1 = Higher executive
- 2 = Other professionals
- 3 = Semi professionals
- 4 = Clerks, etc.
- 5 = Skilled, etc.
- 6 = Machine operators, etc.
- 7 = Unskilled, etc.

Table 12. Distribution by School of Enrollment at Oregon State University

	AG		B & T		Educ.		Eng.		For.		H. Ec.		H. S. & S.		Phar.		Sci.		Total	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Total	6	5.9	13	12.7	14	13.7	22	21.6	1	1	10	9.8	18	17.6	3	2.9	15	14.8	102	100
Male	4	7.1	11	19.6	1	1.8	21	37.5	1	1.8	0	0	9	16.1	1	1.8	8	14.3	56	100
Female	2	4.4	2	4.4	13	28.3	1	2.2	0	0	10	21.7	9	19.4	2	4.4	7	15.2	46	100
University Committees	3	5.9	5	9.8	8	15.7	10	19.6	0	0	4	7.8	8	15.7	3	5.9	10	19.6	51	100
All-Student Committees	3	5.9	8	15.7	6	11.8	12	23.5	1	1.9	6	11.8	10	19.6	0	0	5	9.8	51	100

Social Science. The representation of female participants was highest from the schools of Education, Home Economics, and Humanities and Social Science.

In summary the following profile seems to emerge. Student participants on university committees appear to be somewhat older and have obtained a higher class standing than members of all-student committees. It would seem reasonable to conclude that student participants on university committees have had greater previous experience in student government activities.

Student members of all-student committees show a higher degree of intelligence with the exception of the accumulative college grade point average.

The groups are similar in regard to high school activities, occupation of head of family and school of enrollment. Please note that none of the above observations have been tested to see if any statistical differences exist, but are presented only as a description of the student sample.

After the effect of each covariate was measured upon the initial responses and the necessary adjustments were calculated, the null hypotheses were tested at the .05 and .01 levels of significance. The differences between the means for the pre- and post-tests were calculated by the appropriate F tests as a part of the analysis of variance and covariance statistical models.

IV. ANALYSIS AND FINDINGS

The main objective of this study was to examine the change in perception of the university environment that took place between student members of university committees and those who were members of all-student committees during one academic year. In addition, the amount of change in perception that occurred within each group during the same time was measured.

The College University Environment Scales was the instrument employed to measure the perception of the university environment. It is comprised of the following seven scales:

- Practicality
- Community
- Awareness
- Propriety
- Scholarship
- Campus Morale
- Faculty-Student Relationship

Before any discussion of the findings can be undertaken it is necessary to examine the effects of the covariate variables upon the student responses to the questionnaire.

Analysis of Covariance Model

The following control variables were treated as covariates to measure the degree to which they affected the students' responses

between the pre- and post-results.

1. Intelligence
2. High school activities
3. Previous experience in student government organizations
at Oregon State University
4. Class standing
5. Age
6. Occupation of head of household
7. School

The effect of the seven covariates upon the differences between the pre- and post-results of the instrument was measured.

Specifically, the effect of the seven covariate variables in relation to the two criterion variables (the groups under study and sex) was measured.

The following statistical model was employed (Snedecor and Cochran, 1967):

$$\begin{aligned}
 y = & u + \text{group} + \text{sex} + \text{group} \times \text{sex} + \\
 & \beta_1 (\text{intelligence}) + \beta_2 (\text{high school activities}) + \\
 & \beta_3 (\text{previous experience in student government} \\
 & \quad \text{organizations at Oregon State University}) + \\
 & \beta_4 (\text{class standing}) + \beta_5 (\text{age}) + \\
 & \beta_6 (\text{occupation of head of household}) + \beta_7 (\text{school})
 \end{aligned}$$

where:

y = response

u = mean

Two hypotheses were established:

$$H_o \text{ (null) } \beta_1 = \beta_2 = \beta_3 = \dots \beta_7 = 0$$

$$H_a \text{ (alternate) } \text{some } \beta_i \neq 0$$

Therefore, if $\beta_1 = \beta_2 = \dots \beta_7 = 0$ it was assumed that each covariate had the same effect upon the criterion variables. In this case the analysis of variance technique was employed to test the null hypotheses of the study. When some $\beta_i \neq 0$ was found, the analysis of covariance technique was used in place of the analysis of variance model.

Table 13 shows the F values for each scale. The null hypothesis $\beta_1 = \beta_2 = \dots \beta_7 = 0$ was accepted for the Practicality, Community, Awareness, Scholarship, and Faculty-Student Relationship scales. For these five scales the analysis of variance statistical method was utilized in testing the three null hypotheses under study. The alternate hypothesis, some $\beta_i \neq 0$, was accepted for the Propriety and Campus Morale scales. The Propriety scale was effected by student participation in high school activities, while the Campus Morale scale was effected by students' past participation in student government organizations at Oregon State University. The analysis of covariance technique was employed in testing the null hypotheses on the Campus Morale and Propriety scales.

Table 13. Summary of the Effect of the Covariate Variables Upon Student Responses for Each Scale

Scale	F Score
Practicality	1.20
Community	1.23
Awareness	1.50
Propriety	2.16*
Scholarship	0.67
Campus Morale	1.98*
Faculty-Student Relationships	1.48

F = 1.82 at .05 level

F = 2.32 at .01 level

* Significant at .05 level

In summation, it was found that only two scales, Propriety and Campus Morale, were affected significantly by a covariate. This was controlled for by using analysis of covariance in treating the three null hypotheses on these scales. Analysis of variance was employed when treating the five remaining scales.

Testing of Null Hypotheses

As previously stated, the analysis of variance and the analysis of covariance models were employed in testing the three hypotheses of this study:

- I. There is no significant difference in the amount of change in the perception of the university environment (as measured by

the seven scales of the College University Environment Scales) between student participants on all-student government committees, for either male or female members.

- II. There is no significant change in the student's perception of the university environment (as measured by the seven scales of the College University Environment Scales) among those who participated on university committees, for either males or females.
- III. There is no significant difference in the amount of change in the student's perception of the university environment (as measured by the seven scales of the College University Environment Scales) among those who participated on all-student government committees, for either males or females.

All hypotheses were tested at .05 and .01 levels of significance.

The Practicality, Community, Awareness, Scholarship, and Faculty-Student Relationship scales were treated by the analysis of variance model described below:

$$y = u + \text{group} + \text{sex} + \text{group} \times \text{sex}$$

where:

y = response

u = mean

The analysis of covariance model was used in testing the null

hypotheses on the Propriety and Campus Morale scales:

$$y = u + \text{group} + \text{sex} + \text{group} \times \text{sex} + \beta_1 \text{ (covariate variable)}$$

where:

y = response

u = mean

β_1 (high school activities) on Propriety scale

β_1 (previous experience in student government organizations) on Campus Morale scale

All F values were determined by deriving the mean of the differences of the means between the pre- and post-results for all scales of the instrument.

Discussion of Findings

It was possible to test all three hypotheses concurrently by the employment of the analysis of variance and covariance models. A single F test showed whether any difference occurred between and within groups. Likewise, only one F value indicates the difference in responses due to the sex of the students between the two groups. A third F value expresses the difference due to sex within each group.

Table 14 summarizes the F values for all of the three hypotheses under study. Each of the null hypotheses was accepted at both the .05 and .01 level of significance.

Table 14. Summary of F Values for Pre and Post Results of the Seven Scales of the College University Environment Scales.

Scale (Col. 1)	University Committees (28m. 23f.)	All-Student Committees (28m., 23f.)	Difference between groups for males and females				Difference within groups for males and females				
	Difference between means of pre and post results (Col. 2)	Difference between means of pre and post results (Col. 3)	F (Col. 4)	Difference between means of pre and post results		F (Col. 7)	Difference between means of pre and post results				
				Male (Col. 5)	Female (Col. 6)		University Committee		All-student Committee		F (Col. 12)
						Male (Col. 8)	Female (Col. 9)	Male (Col. 10)	Female (Col. 11)		
Practicality	-0.47059	-0.90196	.40	-0.47059	-0.90196	.61	-1.00	-0.85	.17	-0.9	.86
Community	.96078	.01961	.68	.5869	.41071	.02	1.32143	-0.5000	.5217	.65217	.73
Awareness	-0.96078	-0.68627	.10	-1.26087	-0.46429	.88	-0.46429	-0.46429	1.56522	-0.95652	.12
Propriety	.72549	.88235	.01 ^a	1.84783	-0.05357	.68 ^a	.10714	-0.21429	1.47826	2.21739	.54 ^a
Scholarship	-0.54902	0	.55	-0.32609	-0.23214	.01	-0.10714	-0.35714	-1.08696	.43478	1.43
Campus Morale	-0.82353	-1.50980	1.71 ^a	-1.10870	-1.21429	.37 ^a	-0.53571	-1.89286	-1.17391	-1.04348	.56 ^a
Faculty-Student Relationship	.31373	.15686	.06	-0.02174	.44643	.54	.64286	.2500	-0.08696	.04348	.17

Differences in means were derived by subtracting post test means from pre test means.

^a Analysis of covariance statistical analysis

Hypothesis I. There is no significant difference in the amount of change in the perception of the university environment (as measured by the seven scales of the College University Environment Scales) between student participants on university committees and student participants on all-student government committees, for either male or female members.

An inspection of columns 2, 3 and 4 of Table 14 indicates a non-significant F value on all of the seven scales. Columns 5, 6, and 7 indicate that the sex of the respondent did not significantly affect the results. Nominal negative mean scores occurred for both groups on the Practicality, Awareness, Scholarship, and Campus Morale scales. None of these were significant and must be attributed to chance.

In summary, it becomes quite apparent that the subjects of both groups had similar perceptions of the environment (as measured by the College University Environment Scales). It is also important to note that the perceptions of both groups did not change significantly during the academic year under study.

Hypothesis II. There is no significant change in the student's perception of the university environment (as measured by the seven scales of the College University Environment Scales) among those who participated on university committees, for either males or females.

Column 4 of Table 14 indicates, by the small F values, that no significant difference occurred between the pre- and post-results for student members of university committees. Columns 8, 9 and 12 indicates that the sex of the participants did not affect the responses on any scale. The Practicality, Awareness, Scholarship, and Campus Morale scales show a small but insignificant negative change from the pre- to post-test results.

In review, it was found that no significant change in the perception of the university environment (as measured by the College University Environmental Scales), by student members of university committees, occurred during the academic year under study. Secondly, the findings indicate that the difference in the sex of the student participants had no significant effect upon responses.

Hypothesis III. There is no significant difference in the amount of change in the student's perception of the university environment (as measured by the seven scales of the College University Environment Scales) among those who participated on all-student government committees, for either males or females.

Columns 2 and 4 of Table 14 indicate that no significant change took place between the pre- and post-results for participants of all-student committees. Columns 10, 11, and 12 state that the sex of the

participants had no significant effect upon the results.

In summary, the null hypothesis stating that there was no significant change between the pre- and post-results (as measured by the College University Environment Scales) for male or female members was accepted.

Summary of Findings

The null hypotheses were accepted at both the .05 and .01 level of significance. The findings indicate that there was no significant difference between the responses of males and females on any of the seven scales. The Practicality, Awareness, Scholarship, and Campus Morale scales showed a nominal negative change between the pre- and post-results for both groups.

V. SUMMARY AND CONCLUSIONS

Summary

The current concern regarding the role of students in university government led to the initiation of this study. The major goal of this study was to examine the change in the perception of the university environment that occurred in students who participated in two forms of university government. Specifically, comparisons were made between students who participated on university committees and all-student committees. Since these two methods seem to be the most common way of involving students in university government, a comparison was made of the perceptions of these two groups over a period of one academic year.

A total of 102 students participated in the study; 28 male and 23 female subjects were chosen for each group.

The College University Environment Scales was the instrument employed to measure the students' perception of the university environment. Initial administration of the instrument was prior to the students' attendance at their first committee meeting. The second administration of the instrument was at the conclusion of the academic year.

The analysis of variance and covariance statistical models were

used in order to draw the statistical inferences for the study. Statistical inferences were made between the pre- and post-results, to measure the change within and between groups. It was found that no significant change in the perception of the university environment occurred between the two groups or within either group. In addition, it was found that male and female subjects held similar perceptions of the university environment.

Discussion

Any discussion of this study must center around the following salient factor. The population of students who participate in university government by the two methods under study is small. When such small samples are involved, differences between groups must be relatively large for tests of significance to reach the conventional .05 and .01 levels. As more students become involved as members of university committees differences may become more apparent.

The research available on student participation in university government is scarce. This made it difficult to compare the conclusions of this study with findings from related research.

Berdie (1966) found that the College University Environment Scales was an effective instrument for measuring change that might occur due to a particular college experience. Other studies previously reviewed in the chapter on related literature also attest to this

fact. With the acceptance of these assumptions, it may be stated that student participation in university government causes no significant change in their perception of the university environment. Furthermore, it is indicated that participation on university or all-student committees results in the same degree of change and in the same direction.

Freedman (1965) stated that the involvement of students in a closer relationship with faculty would lead to an equalitarian relationship between the groups.

The findings of this study show that no significant change occurred on the Faculty-Student Relationship scale. This study indicates that student participants on university committees showed no significant change in their perception of the university environment. Furthermore, participation on university committees resulted in no significant difference when compared with participation on all-student committees. These findings must be tempered by the fact the sample size under study was small. The effect of the covariate variable indicates a trend toward a significant initial affect on all scales with the exception of the Scholarship scale. As samples available for study increase in size, it is possible that the two groups will be found to differ in their perceptions of the university environment.

The fact that a significant difference did not occur between the two groups may be better understood by examining the covariate

variables described in Chapter III.

Although the groups differed somewhat in their profiles, their differences did not affect their perceptions of the university environment. This fact possibly indicates that both types of involvement have a similar impact upon students. It is possible that students who participate in the current structure of university governance have already developed a fixed perception before actually becoming involved in the structure. If this is true, two possible explanations may be offered. The current system of university government seems to attract a homogeneous group of students in regard to their perceptions of the university environment. Secondly, the perceptions of the subjects remained remarkably unchanged by the experience. This indicates that the current university government system attracts that segment of students who closely identify with the existing structure of university government.

This study suggests that the basic aims and goals of student involvement should be reviewed, especially in regard to the development of alternative structures which might attract a more heterogeneous group of students.

Conclusions

The following conclusions were drawn from the findings of this study:

1. Students who participate in university government view the university environment in a similar fashion.
2. Male and female student participants in university government view the university environment in a similar fashion.
3. Student participation in university government resulted in no significant change in previously held perceptions of the university environment.
4. Student participants on university committees do not view the university environment significantly different from student participants on all-student committees.

Limitations

Sample Size

The major limitation of the study was the small sample size. It seems likely that the use of larger samples could lead to the identification of significant differences, especially on the effects of the covariate variables.

Locale of Study

A basic limitation of this study is that only students and the governmental structure at Oregon State University were studied.

Research Design

It is possible that some uncontrolled variable produced an effect upon the subjects' responses.

Recommendations

Any replication of this study should include a larger sample. This would permit more reliable generalizations to be made regarding students who participate in university government. A more detailed study of the personal characteristics of students who become involved in university committees and all-student committees might also be undertaken. Student participants in all forms of university government could be compared with the student body at large. From a study of this nature, it would be possible to ascertain if student leaders are representative of the student body. Research is needed to develop alternative methods to include a more diversified group of students in the structure of university government. The basic aims and goals of committees should be studied. The perceptions of faculty members of university committees should be compared with student members. Furthermore, the view of the faculty in regard to student involvement in university government should be investigated. A major thrust should be to measure the effectiveness of student members on university government.

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APPENDICES

APPENDIX I

Description of Hollingshead Two Factor Index of Social Position

The Two Factor Index of Social Position was developed to meet the need for an objective, easily applicable procedure to estimate the positions individuals occupy in the status structure of our society. Its development was dependent both upon detailed knowledge of the social structure, and procedures social scientists have used to delineate class position. It is premised upon three assumptions: (1) the existence of a status structure in the society; (2) positions in this structure are determined mainly by a few commonly accepted symbolic characteristics; and (3) the characteristics symbolic of status may be scaled and combined by the use of statistical procedures so that a researcher can quickly, reliably, and meaningfully stratify the population under study (Hollingshead, 1957, p. 11).

APPENDIX II

Committees Utilized in StudyFaculty Senate

Academic Requirements
Advancement of Teaching
Classroom Television
International Education
Library
University Honors Program

Administrative Council

Campus Planning
Commencement Week
Convocation and Lectures
Examinations
Registration and Scheduling
Traffic
Student Traffic Court

Student Personnel Services Council

Computer
Educational Activities
Financial Aids
Health Service
Homecoming Steering
New Student Programs
Recreational Sports
Student Activities
Student Housing
Student Publications

Special Committees and Boards

Intercollegiate Athletics
Memorial Union Board of Directors
Student Faculty Council on Academic Affairs
Senate Executive Committee

APPENDIX III
Summary of Individual Scores Showing Differences Between Pre- and Post-Results

Scale 1 = Practicality Scale 3 = Awareness Scale 5 = Scholarship Scale 7 = Faculty-Student
Scale 2 = Community Scale 4 = Propriety Scale 6 = Campus Morale Relationship

Source	Pre Results by Scale							Post Results by Scale							Difference							
	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	
All-Student Committee Female																						
1	15	3	5	0	14	3	0	5	4	5	1	8	2	2	-10	1	0	1	-6	-1	2	
2	9	10	15	7	9	12	6	10	11	9	9	9	8	5	1	1	-6	2	0	-4	-1	
3	11	12	13	7	4	12	9	10	9	15	6	9	14	7	-1	-3	2	-1	5	2	-2	
4	13	15	17	12	7	19	8	13	5	14	2	11	8	6	0	-10	-3	-10	4	-11	-2	
5	11	16	18	16	11	19	11	9	9	16	18	8	12	8	-2	-7	-2	2	-3	-7	-3	
6	8	6	9	10	3	9	5	10	16	10	13	9	12	8	2	10	1	3	6	3	3	
7	15	15	17	13	10	19	8	12	16	9	12	11	15	7	-3	1	-8	-1	1	-4	-1	
8	11	8	13	5	6	12	1	9	11	18	13	8	15	8	-2	3	5	8	2	3	7	
9	12	8	15	10	5	11	9	16	7	10	16	6	10	5	4	-1	-5	6	1	-1	-4	
10	7	6	5	10	2	5	1	13	7	13	11	4	12	6	6	1	8	1	2	7	5	
11	10	12	9	9	11	8	5	13	7	16	13	7	14	3	3	-5	7	4	-4	6	-2	
12	14	8	13	12	5	14	5	12	3	8	4	8	7	4	-2	-5	-5	-8	3	-7	-1	
13	11	6	11	11	7	11	5	8	13	14	16	8	18	6	-3	7	3	5	1	7	1	
14	11	3	10	8	2	7	3	11	5	9	11	4	6	5	0	2	-1	3	2	-1	2	
15	14	11	15	5	9	12	7	11	7	10	14	5	9	2	-3	-4	-5	-9	-4	-3	-5	

Source	Pre Results by Scale							Post Results by Scale							Difference						
	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7
16	15	14	18	17	10	20	8	10	7	11	8	5	9	4	-5	-7	-7	-9	-5	-11	-4
17	15	2	10	8	2	7	2	9	18	16	15	11	19	9	-6	16	6	7	9	12	7
18	10	8	12	8	4	12	8	11	7	12	11	6	11	4	1	-1	0	3	2	-1	-4
19	15	4	14	8	10	14	4	12	5	8	12	4	7	3	-3	1	-6	4	-6	-7	-1
20	12	13	18	17	7	20	7	14	9	12	13	9	12	7	2	-4	-6	-4	2	-8	0
21	15	5	16	8	8	14	6	17	15	16	17	7	16	6	2	10	0	9	-1	2	0
22	13	6	8	3	6	7	5	11	2	7	9	4	2	2	-2	-4	-1	6	-2	-5	-3
23	13	5	15	4	7	13	3	12	18	16	15	8	18	10	-1	13	1	11	1	5	7
All-Student Committee																					
Male																					
1	7	13	5	4	9	11	5	9	15	13	16	7	19	7	2	2	8	12	-2	8	2
2	15	18	14	15	8	18	8	10	10	5	8	8	8	3	-5	-8	-9	-7	0	-10	-5
3	14	8	13	9	6	10	5	11	15	13	16	12	15	9	-3	7	0	7	6	5	4
4	14	7	7	4	3	5	1	5	7	9	7	6	9	6	9	0	2	3	3	4	5
5	14	11	15	5	9	12	7	14	13	12	8	9	7	6	0	2	-3	3	0	-5	-1
6	12	6	8	12	3	9	4	9	0	5	0	8	0	1	-3	-6	-3	12	5	-9	-3
7	6	12	6	8	9	8	4	12	11	12	8	5	12	7	6	-1	6	0	-4	4	3
8	8	6	10	6	1	10	7	12	11	9	8	5	10	9	4	5	-1	2	4	0	2
9	5	15	15	16	5	15	9	6	10	9	5	12	11	6	1	-5	-6	-11	7	-4	-3
10	8	4	6	4	4	2	2	12	13	7	5	6	5	6	4	9	1	1	2	3	4
11	13	12	11	3	11	7	4	13	11	13	14	6	14	8	0	-1	2	11	-5	7	4
12	6	10	7	3	8	8	8	7	9	10	8	7	7	9	1	-1	3	5	-1	-1	1

Source	Pre Results by Scale							Post Results by Scale							Difference						
	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7
13	13	6	9	10	9	8	3	13	2	6	7	7	4	0	0	-4	-3	-3	-2	-4	-3
14	9	4	12	6	6	7	3	10	6	11	6	2	6	5	1	2	-1	0	-4	-1	2
15	10	7	7	7	8	8	1	5	17	7	6	12	10	6	-5	10	0	-1	4	2	5
16	7	8	7	12	9	6	4	10	12	11	9	7	9	6	3	4	4	-3	-2	3	2
17	10	3	9	12	10	11	2	11	8	14	11	11	13	5	1	5	5	-1	1	2	3
18	11	8	7	5	13	11	4	11	15	12	8	6	10	8	0	7	5	3	-7	-1	4
19	13	11	10	11	5	8	6	9	13	14	13	10	10	5	-4	2	4	2	5	2	-1
20	14	5	13	4	10	10	4	12	3	7	9	8	7	2	-2	-2	-6	5	-2	-3	-2
21	11	12	13	9	8	10	4	11	7	12	6	3	2	2	0	-5	-1	-3	-5	-8	-2
22	15	15	15	12	8	19	6	7	1	6	4	8	3	1	-8	-14	-9	-8	0	-16	-5
23	12	16	13	9	11	18	8	8	12	13	12	7	13	7	-4	-4	0	3	-4	-5	-1
24	14	16	14	13	8	18	9	12	13	8	15	3	8	6	-2	-3	-6	2	-5	-10	-3
25	8	8	7	13	7	8	4	11	2	6	3	3	3	2	3	-6	-1	-10	-4	-5	-2
26	12	10	6	8	10	8	4	10	7	9	3	9	4	4	-2	-3	3	-5	-10	-4	0
27	14	12	8	4	4	7	3	14	9	7	9	5	8	3	0	-3	-1	5	1	1	0
28	13	8	14	12	4	13	6	10	5	8	6	4	5	3	-3	-3	-6	-6	0	-8	-3
University Committee Female																					
1	8	8	6	5	13	6	3	10	9	11	3	9	9	7	2	1	5	-2	-4	3	4
2	11	9	13	14	6	11	5	11	12	13	14	5	13	7	0	3	0	0	-1	2	2
3	10	17	17	15	11	20	9	8	16	13	11	5	11	8	-2	-1	-4	-4	-6	-9	-1

Source	Pre Results by Scale							Post Results by Scale							Difference						
	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7
4	11	6	10	2	13	5	3	8	5	12	12	10	13	2	-3	-1	2	10	-3	8	-1
5	8	5	8	7	3	8	3	10	10	11	15	9	15	8	2	5	3	8	6	7	5
6	17	2	8	1	7	4	1	6	8	9	8	7	9	3	-11	6	1	7	0	5	2
7	11	7	14	5	8	10	8	14	16	11	8	7	14	8	3	9	-3	3	-1	4	0
8	10	10	11	11	8	11	4	14	5	6	1	9	4	5	4	-5	-5	-10	1	-7	1
9	13	8	10	4	8	12	3	9	4	8	10	3	5	1	-4	-4	-2	6	-5	-7	-2
10	8	9	12	9	9	14	6	12	5	12	7	8	12	4	4	-4	0	-2	-1	-2	-2
11	10	6	14	11	6	11	7	11	7	9	10	4	9	3	1	1	-5	-1	-2	-2	-4
12	12	15	9	12	5	15	6	10	11	8	8	5	7	3	-2	-4	-1	-4	0	-8	-3
13	11	6	12	3	7	10	2	10	9	9	9	8	10	6	-1	3	-3	6	1	0	4
14	10	7	10	8	7	11	1	10	2	10	6	7	4	1	0	-5	0	-2	0	-7	0
15	10	9	13	10	5	14	8	13	3	14	16	7	15	4	3	-6	1	6	2	1	-4
16	14	17	15	13	14	19	8	7	5	6	3	8	6	6	-7	-12	-9	-10	-6	-13	-2
17	14	4	9	5	5	9	1	11	16	7	14	7	13	6	-3	12	-2	9	2	4	5
18	8	11	14	8	7	17	8	11	12	9	11	1	10	3	3	1	-5	3	-6	-7	-5
19	13	2	14	7	11	10	3	13	5	8	4	8	3	2	0	3	-6	-3	-3	-7	-1
20	11	9	13	7	9	13	4	13	5	10	3	4	7	4	2	-4	-3	-4	-5	-6	0
21	11	16	11	10	10	12	7	13	15	8	13	11	13	4	2	-1	-3	3	1	1	-3
22	12	7	9	5	9	8	2	16	11	13	12	10	16	6	4	4	4	7	1	8	4
23	9	5	11	10	4	9	6	16	16	10	18	8	14	5	7	11	-1	8	4	5	-1

Source	Pre Results by Scale							Post Results by Scale							Difference							
	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	
University Committee Male																						
1	9	5	11	10	4	10	2	8	9	10	6	9	9	5	-1	4	-1	-4	5	-1	3	
2	11	9	5	9	7	4	5	8	9	6	8	7	7	7	-3	0	1	-1	0	3	2	
3	15	10	12	7	7	11	5	12	6	8	14	6	8	5	-3	-4	-4	7	-1	-3	0	
4	10	13	4	5	7	6	6	12	18	6	11	9	11	8	2	5	2	6	2	5	2	
5	12	12	9	15	7	13	6	8	10	6	5	2	4	3	-4	-2	-3	-10	-5	-9	-3	
6	13	10	8	6	12	14	4	13	8	5	6	2	4	2	0	-2	-3	0	-10	-10	-2	
7	12	3	12	9	7	10	5	10	12	4	6	4	8	5	-2	9	-8	-3	-3	-2	0	
8	14	1	11	8	8	8	0	13	2	13	8	10	9	1	-1	-	2	0	2	1	1	
9	13	13	13	13	6	14	7	14	12	9	16	4	14	4	1	-1	-4	3	-2	0	-3	
10	8	12	11	7	9	12	5	11	7	11	11	7	11	5	3	-5	0	4	-2	-1	0	
11	10	11	13	8	8	13	7	13	11	16	15	6	13	7	3	0	3	7	-2	0	0	
12	9	9	13	11	7	15	7	11	11	11	7	13	12	9	2	2	-2	-4	6	-3	2	
13	14	6	13	13	7	11	3	11	15	13	13	4	13	8	-3	9	0	0	-3	2	5	
14	11	8	13	6	4	8	8	8	16	7	14	7	13	6	-3	8	-6	8	3	5	-2	
15	11	9	12	14	3	11	5	6	11	6	4	10	10	5	-5	-8	4	-10	7	-1	0	
16	12	10	14	14	8	16	5	13	5	8	9	6	5	1	1	-5	-6	-5	-2	-11	-4	
17	10	15	10	13	10	17	8	8	9	9	9	11	14	8	-2	-6	-1	-4	1	-3	0	
18	10	1	8	2	4	4	2	11	10	12	7	7	12	8	1	9	4	5	3	8	6	
19	11	4	3	2	9	3	2	11	0	10	8	4	7	3	0	-4	7	6	-5	4	1	

Source	Pre Results by Scale							Post Results by Scale							Difference						
	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7
20	13	5	13	13	3	12	6	11	14	11	13	5	11	8	-2	9	-2	0	2	-1	2
21	8	12	14	10	9	14	9	12	11	10	10	4	11	7	4	-1	-4	0	-5	-3	-2
22	7	6	4	9	1	6	3	8	10	13	12	7	10	8	1	4	9	3	6	4	5
23	10	7	10	7	6	10	7	7	5	4	3	6	2	3	-3	-2	-6	-4	0	-8	-4
24	12	11	12	15	8	16	6	11	14	14	13	8	17	8	-1	3	2	-2	0	1	2
25	11	4	13	6	8	9	7	10	5	7	7	7	8	2	-1	1	-6	1	-1	-1	-5
26	12	9	7	11	6	8	3	8	13	8	11	6	12	7	-4	4	1	0	0	4	4
27	11	5	6	0	10	5	1	11	11	11	1	8	9	6	0	6	5	1	-2	4	5
28	13	11	10	12	7	11	5	5	14	13	11	10	12	8	-8	3	3	-1	3	1	3