

# GROWTH AND DEVELOPMENT OF COLLEGE ADMINISTRATIVE STRUCTURES

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Current research suggests that organizations tend to move through distinct growth stages from a more person-centered to a more task-oriented bureaucracy. The study reported here examined the structural characteristics of community colleges at regular intervals. Five major growth stages were found, each similar to a theoretically derived growth period.

The colleges progressed from having, in their early years, decentralized decision-making, few and "flat" reporting spans, and few structured and controlled activities, to having, in their later years, many "tall" reporting spans and many structured and controlled activities. They moved toward centralized decision-making in the middle years and then reverted to decentralized forms in later years.

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Over the last 15 years, growth of organizational bureaucracy has become an area of increasing interest to both the researcher and the practitioner. Researchers are becoming more aware of the external and internal influences on organizational change.

Changes in characteristics of organization may occur as a result of many different conditions, not always or necessarily related to the processes of organization as such. But the theory of organization must be selective so that explanations of transformation will be sought within its own assumptions and frame of reference (Selznick, 1969, p. 275).

Of concern to the practitioner is the fact that bureaucratic characteristics in formal organizations seem to develop in spite of efforts to reduce "the paper flow," and to increase "participatory decision-making."

Studies which have examined organizational growth and development can be divided into three categories. The first is composed of commissioned histories of individual organizations (Cleveland, 1969). The second comprises studies which have developed conceptual models of growth patterns (Lippitt and Schmidt, 1967; Rice and Bishopruck, 1971). The third group includes field studies of organizational growth and development either qualitatively or quantitatively descriptive (Perrow, 1961; Griffith, 1963; Starbuck, 1971). However, there still is a scarcity of studies which examine organizational growth in more detailed and precise terms. This point is underlined by Starbuck's comment (1965) that "current

knowledge is so rudimentary that prescriptive statements [about organizational growth] seem premature.” (p. 452)

The study reported here addressed itself to an examination and description of the development of the administrative structures of one type of complex organization – publicly supported community colleges (Heron, 1972). Of the several dimensions of complex organization identified by Hall (1972), organizational structure was selected for examination. Structure was considered by March and Simon (1958) to “consist simply of those aspects of the patterns of behavior in the organization that are relatively stable and that change only slowly.” (p. 170) Thus by isolating and examining structure, the study was able to take advantage of the suggested relatively slow rate of change of one organizational dimension. A second reason for examining structure was that several methodologies and instruments have been developed to measure it, among them that developed by Pugh et al. (1968). However, due to the close relationship between structure and function (Katz and Kahn, 1966, pp. 453–459), there was a strong implication that functional development was also being examined.

The findings and implications of this study emphasized that there are no “pat” answers to questions related to the bureaucratization of organizations. Indeed, as Katz (1971) observed:

There is no one way, nor even a few ways, of rightly arranging for education. There are many ways, and anyone who argues otherwise is foolish..... for the most part, the particular form education should take in any one place should be worked out by the people involved. Professional educationists can offer a great deal of assistance, but the days when they can offer blueprints is ended (p. 146).

## **BACKGROUND**

### **Nature of College Structures**

Of the few studies which have closely examined the organizational structures of community colleges several have observed that colleges exhibit, to a greater or lesser extent, many of the structural characteristics of any formal organization. Colleges have, among other features, (1) a number of specialized tasks, (2) standard procedures for performing certain tasks, (3) formalized methods of recording, documenting, and filing, (4) administrative spans of reporting and receiving reports, and also (5) rules, regulations, and guidelines.

What effect do such bureaucratic characteristics have on college performance and employees' behavior? Smith (1969) examined a sample of colleges in Texas. He noticed that there was a tendency for colleges with wide spans of administrative control, with few rules, regulations, and documents, with decentralized de-

cision-making processes, and with many specialized activities to have staffs which derived satisfactions and a sense of accomplishment from their work and who could work independently. Such colleges also had senior executives who, though formal and impersonal when managing college affairs, related with warmth and consideration to the instructional staff.

Despite the potential that colleges seem to have for "humanizing the bureaucracy," other studies have shown that this potential is perhaps not always realized. Pax (1964), Burnette (1967), and Newberry (1971) observed that public community colleges both in United States and in western Canada tended to have an authoritarian rather than a collegial pattern of administration and structure. They noticed that authority and responsibility tended to be centralized in the president's office and that, with increasing size, responsibilities were shared among various senior administrative levels rather than being delegated. They also found that organizational planning and review, the establishment of college and faculty committees and the functions of these committees were activities primarily of the senior levels of administration.

The two positions or sets of organizational characteristics implicit in these studies have been variously labeled traditionalistic, closed-climate, or authoritative as opposed to charismatic, open-climate, or participative (Hickson, 1966). Any description of a college or any other formal structure should emphasize that every such organization shows an amalgam of these two positions even though the organization in question may be more closely associated with one than the other.

However, these positions have been established from observations of many organizations at one point in time. When an organization is examined over time, the growth studies previously mentioned indicate that there seems to be a general progression from a more open, person-centered set of characteristics in its early periods of development to a more controlled, more organization-centered set in its later periods.

### **Nature of Organizational Growth**

An examination of the literature concerning organizational growth and development generally suggests that formal organizations move through at least four distinct stages as they develop:

"Birth" Period — relationships between all staff are informal and not appreciably controlled; tasks are relatively unspecialized; routine procedures are not well established; goals and operational objectives are in the process of being developed; there is freedom to experiment in a tolerant environment.

"Youth" Period — interpersonal relationships become formalized; tasks become more specialized; procedures become more routine as the number and complexity of activities increase; size increases rapidly; the environment becomes less supportive and more critical of the organization.

“Productive” Period – formal interpersonal relationships become stabilized; the number and kinds of specialized tasks and standard activities become stabilized; the rate of size increase decreases; innovativeness is less encouraged; the amount and intensity of activities to influence a less supportive environment increase.

“Mature” Period – structures and functions become fixed; broad goals become emphasized; decentralized decision-making is encouraged; size and program changes occur slowly; some control over the environment has been obtained.

These descriptions strongly suggest that growth and development of an organization are better described in terms of these characteristics than in terms of size or age. In other words, if one wishes to explain the degree of bureaucratization which has occurred, it may be more meaningful to speak of a college as having certain characteristics than to say that the college is so many years old or has so many employees or students. This conclusion is made even though, due to such influences as a new president, budget restrictions, or a new board of governors, one part of the college may have characteristics of a period less “developed” than that which is exemplified by the college as a whole.

Such developmental periods suggest also that there might be a series of identifiable stages or periods in the development of college administrative structures. Griffith (1963), using a model developed by Thelen from observations of the development of structures in small groups, longitudinally examined the development of five types of adult education institutions (the sample did not include colleges and universities). He identified six empirically definable stages, of which the first two were preliminary to the operationalization of the main activity function of the organization.

Using cross-sectional data only, the Aston group (Pugh et al., 1969b) established a taxonomy of organizations from a sample of 46 diverse types. The taxonomy was ordered in terms of increasing structural complexity. Pugh et al (1969b, p. 123) observed that the seven taxa or groupings implied “a classification ordered along a historical dimension” and suggested that “it is possible to hypothesize about developmental sequences.” These comments have been reemphasized by Aldrich (1972), who suggested that

using cross-sectional data to make inferences about organizational development makes sense if one believes that the organizations studied are at various stages in a pattern of growth which holds true across all organizations. The cross-sectional data can be assumed to have caught different organizations at different stages in a developmental sequence (p. 27).

The longitudinally derived findings of the Griffith study present a parallel to the cross-sectionally derived Aston taxonomy. In terms of operationally defining structures and of classifying organizations accordingly, the three Aston dimensions of *Structuring of Activities*, *Concentration of Authority* and *Line Control of*

*Workflow* appear to provide a basis for identifying and describing growth stages.

## METHODOLOGY

### Population

Publicly supported community colleges in the Province of Alberta were examined at yearly intervals from the first operating year of each to December 31, 1971. One college was 40 years old; 1 was 15 years old; 2 were 8 years old; and 1 was 6 years old. The total number of data-collecting points was 77 years.

Each college offered both university transfer programs and one- and two-year diploma programs. Each provided students with upgrading opportunities, the community with self-development and leisure-oriented programs, and both groups with counseling and guidance services. The genesis of all but one college can be traced, directly or indirectly, to the influence of Martorana's recommendation that the California junior college model was appropriate to the Alberta scene (Markle, 1965).

### Structural Variables

Organizational structure of the colleges was operationally defined as being composed of 10 variables which are derived from the Aston and related studies (Pugh et al., 1968). Three were concerned with defining and regulating behavior, two with the amount of autonomy and centralization, and five with the configuration or "shape" of the organization. Those defining and regulating behavior were (1) *specialization* – the number of different administrative and support functions which required at least half-time attention by one employee, (2) *formalization* – the degree to which procedures, rules, communications instructions, role descriptions, and performance evaluations were written and filed, and (3) *standardization* – the extent to which procedures were established for the selection, recruitment, and advancement of personnel.

*Centralization* was considered as the degree to which decision-making power, in both policy and operational areas, was concentrated at or near the level of the chief executive.

*Autonomy* was concerned with the degree to which the same decisions were made "inside" the organization rather than "outside," i.e., by the board of governors, government agencies, or other organizations.

The five configuration variables were (1) *the chief executive's span* – the number of employees reporting directly to the chief executive, (2) *the subordinate ratio* – the average number of instructional personnel reporting to each immediate supervisor, (3) *the percentage of clerks* – total number of employees engaged at least half-time in clerical duties, (4) *the percentage of non-workflow personnel* – the number of employees not involved in instruction or educational administration, and (5) *the percentage of superordinates* – those employees involved in educa-

tional administration at least 50% of their time.

Data were also collected for age and the three size variables: number of students, total number of employees, and size of administrative and instructional staff.

### **Data Treatment**

The data for each of these variables were obtained through interviews with at least two senior administrators and from examinations of audited financial statements, minutes of the board of governors, the college calendars, and from payroll files. They were then standardized to a mean of 50 and a standard deviation of 15. In the process of standardizing the raw data, the S.D. was weighted by the harmonic mean (Bancroft, 1968; Heron, 1972). The weighted standardized data were then considered as the raw data for remaining treatments. This procedure tended to account for the unequal contribution to the overall variance resulting from unequal college ages, i.e., groups of unequal sizes (Winer, 1962, p. 101). It must be recognized, however, that this procedure does not completely eliminate problems arising from the small number of colleges. The standardized variables were intercorrelated and analyzed by a principal-components analysis using varimax orthogonal rotation to achieve six-, five-, four-, three-, and two-factor solutions (Harmon, 1960). The three-factor solution was accepted and on this basis factor scores were determined for a given college in each operational year on each factor. The scores per college per year were plotted and they fell into 15 clusters, each cluster a time period. By overlapping these periods by 1 year, 14 analytical time periods were established. This procedure was followed both for each college separately and for the colleges collectively. The 14 analytical time periods, described factorially, were combined on the basis of similarities, to form and describe growth stages.

## **FINDINGS AND DISCUSSION**

### **Structural Dimensions**

As Table 1 indicates, three factors or underlying structural dimensions in colleges were found.

Factor 1 described that dimension of college structure characterized by specialized tasks which were defined and controlled by documents, performed by rigorously selected professional personnel, and supported by a high percentage of nonadministrative and noninstructional personnel. There was a strong implication that a college scoring high on this factor exercised control over employees through specific task requirements, impersonal reporting arrangements, and formally established mechanisms for hiring, transferring, and dismissing staff.

Factor 2 seemed to indicate a different aspect of structure — that relating solely to the loci of decision-making. Colleges which scored high on this factor made many operational and some policy decisions independently of a board of governors or the provincial government commission. They also had instructors and department heads (or department chairmen) making many operational decisions individually or collectively and had few individuals reporting directly to the chief executive. There was a strong implication that, if a college scored low on this factor, control was exercised over the employees though decision-making being concentrated at the level of the chief executive and one or two assistants and through many problems being referred to the board of governors for its decisions.

Factor 3 described the percentage of supervisors and the number of employees from which supervisors received reports. This factor seemed to indicate the “tallness” or “flatness” of a college hierarchy. Thus a high score on this factor indicated a high percentage of administrators in a supervisory capacity with each supervisor having relatively few employees reporting to him. This factor suggested a third mechanism of controlling employee behavior, that exercised by close reporting relationships and small spans of control.

On the basis of the factors which emerged from this analysis, it appears that the structure of Alberta colleges is at least three-dimensional. One dimension relates to the way in which activities are structured and regulated; another to the amount of dispersion of authority; and another to the shape of the administrative hierarchy. These factors also suggest that control over employee behavior by the college organization is expressed in at least three ways simultaneously.

**Table 1. Characteristics of Three Structural Dimensions**

Variables	Communalities	Factor 1	Factor 2	Factor 3
Specialization	0.818	0.819	0.363	0.126
Formalization	0.912	0.873	0.385	-0.036
Standardization	0.562	0.618	0.234	0.355
% Clerks	0.772	0.549	0.475	-0.495
% Nonworkflow	0.784	0.831	-0.225	0.208
Centralization	0.798	-0.214	-0.821	0.280
Autonomy	0.745	0.323	0.797	0.060
Chief executive span	0.556	0.021	-0.710	-0.226
Subordinate ratio	0.623	-0.193	-0.007	-0.765
% Superordinates	0.715	0.114	0.062	0.836
% Common variance	100.00	41.27	33.33	25.40
% Total variance	72.85	30.07	24.28	18.50

Table 2 shows the results of the factor matrix match using the Ahmavaara method (Ahmavaara, 1954) to compare the three structural dimensions with the Aston structural factors (Pugh et al., 1968). The resulting match between the first two factors was 0.99, between the second factors  $-0.94$ , and between the third 0.71. Because of the high correlation between the first factor and the first Aston factor, it was given the same name: *Structuring of Activities*. The second factor was named *Dispersion of Authority*, since the scaling emphasis in the college study measured the amount of decentralization and autonomy rather than the opposite ends of these scales. The third factor showed a weaker match and, as Table 1 indicates, was composed "cleanly" of the two configuration variables, *subordinate ratio* and *percentage of superordinates*. It was therefore named *Supervisory Emphasis*.

### College Growth Stages

Due to the high levels of match with the Aston factors only *Structuring of Activities* and *Dispersion of Authority* were used to describe the 14 analytical time periods. When these were grouped, 10 analytical time periods emerged and were viewed as "growth stages." However, to describe each growth stage the third factor, *Supervisory Emphasis*, was also used. Each stage was described by the mean of the scores of each of the three factors in the included analytical time periods.

Figure 1 shows the mean standardized score for each factor in a growth stage. It also indicates that 5 major stages, Stages 1, 2, 5, 7, and 10, and 5 intermediate stages, Stages 3, 4, 6, 8, and 9 emerged.

In Stage 1 colleges relied upon decisions being made by the board and its chief executive. Indeed, all colleges but one began essentially as extensions to existing secondary school programs in the high school of the largest center of population in the service area of the college. Since only one type of program was offered, little specialized support seemed to be required. Instructional staff reported

**Table 2.** College and Aston Factor Matrix Match

College Factors	Aston Factors		
	1 Structuring of Activities	2 Concentration of Authority	3 Line Control of Workflow
1	0.995	-0.006	0.094
2	-0.287	-0.941	0.179
3	-0.409	0.570	0.712



directly to the president. Control seemed to be exercised through the decision-making activities of a president working closely with his board and through direct communications with his staff rather than through the establishment and circulation of codified policy statements and rules, regulations, and guidelines.

Stage 2 was characterized by an increased decentralization of decision-making and an increase in the power of the chief executive to make decisions independently of the board. There was even less structuring of activities than in the first stage. The few apparent control mechanisms caused this stage to be similar to that previously characterized as the "Birth" Stage. Indeed, among colleges, this second stage may well represent the true beginnings of the college as a college in its own right rather than as an adjunct to an existing school system.

Stage 5 was characterized by a high degree of authority dispersion accompanied by a pronounced emphasis on supervision as reflected by the large number of supervisors and low reporting span of each. The number of specializations and other codified mechanisms for regulating employees' behavior continued to increase.

In Stage 7 employee control appeared to be extensively exercised through the use of documents both to legitimize the organization and to define and control job performance. Specialized activities and standard procedures for carrying out these activities were consolidated and maintained. A college at this stage would seem to have entered a highly "productive" period.

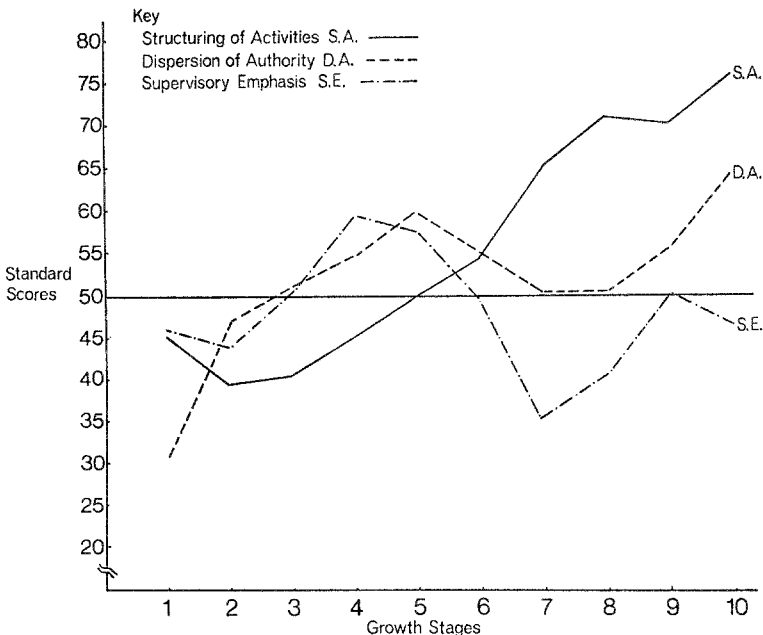


Fig. 1. Characteristics of Alberta college growth stages.

Stage 10 showed characteristics similar to those of the Aston "full bureaucracy" (Pugh et al., 1969b, p. 121). The high degree of structuring of employee behavior was exhibited through a large number of specialized activities and extensive use of documented standard procedures. Colleges in this stage also showed high degrees of autonomy from outside bodies and high degrees of decentralized decision-making.

### Relationships Between Structural Dimensions and Age and Size Variables

Of the many organizational characteristics which could be related to structural growth and development, age and size have been frequently identified and discussed (Hall, 1972). Stinchcombe (1962) has argued that no relationships between age and structure should be expected. However, Pugh et al. (1969a) suggested the older organizations have more autonomy from controlling boards and also have a tendency to become more specialized. Table 3 tends to support the latter argument and to contradict the former.

Significant relationships were observed between age and each structural factor. The strong correlation between age and Supervisory Emphasis ( $\gamma = 0.56$ ) seems to indicate that as colleges age they also tend to develop pyramidal hierarchical configurations by means of increasing the percentage of supervisory staff and decreasing the subordinate/superordinate ratio.

Table 3 also tends to support Hall's (1972) contention that "measures of size appear to be largely interchangeable for research and operational purposes." (p. 111) The two college characteristics relevant to *Structuring of Activities* and *Dispersion of Authority* were the increasing number and diversity of programs as reflected by the variable *specialization* and the increase in decentralized

**Table 3. Correlation Coefficients Between Structural Factors and Age and Size Variables**

Structural Factors	Age	Size Variables		
		Administrators and instructors	Total employees	Students
Structuring of Activities	0.47 <sup>a</sup>	0.59 <sup>a</sup>	0.67 <sup>a</sup>	0.57 <sup>a</sup>
Dispersion of Authority	0.30 <sup>a</sup>	0.54 <sup>a</sup>	0.45 <sup>a</sup>	0.43 <sup>a</sup>
Supervisory Emphasis	0.56 <sup>a</sup>	0.02	0.04	-0.11

<sup>a</sup>Significant at the 0.01 level

decision-making as reflective of an increasingly specialized instructional/administrative and support staff. It appears that increase in student numbers is indirectly related to the structural factors via increases in the number and diversity of programs. It can be argued that the first two factors, through program diversity and staff specialization, are influenced by external demands for programs and the market availability of specialized staff, and thus with external recruitment of staff and students. The third factor, *Supervisory Emphasis*, seems to reflect primarily internal administrative concerns with control and reporting and thus would be independent of size considerations, as Table 3 indicates. These interpretations apply only to colleges considered collectively.

If colleges are considered separately Stinchcombe's comment of no expected relationship between age and structure seems to be justified. Of the 5 colleges forming the population, 3 approximated the characteristics of State 10. In terms of age they were 40, 15, and 8 years old and in terms of size had, respectively, 264, 112, and 111 employees in 1971.

These findings seem to support the observation that age and size, while necessary considerations for college structural development, are not sufficient considerations per se.

## SUMMARY

From this examination of the growth of college structures — at least as this growth was represented by Alberta colleges — three main sets of conclusions arose.

In terms of levels of decision-making, as colleges grow older they tend to become more decentralized and to become more autonomous of their boards of governors. Though decision-making, especially for operational problems, does not necessarily become more widespread at any one level, it does seem to become distributed among more and "lower" levels in the college hierarchy. At the same time, a clearer distinction between operational and policy decisions appears to occur, with operational decisions being made by the chief executive and his staff and policy decisions by the board and a central government commission. This observation, however, says nothing about the amount of influence in college operations exerted by either of these two bodies. Indeed, it seems paradoxical but true that a college could be highly autonomous in terms of operational decisions and yet, in its operation, be highly influenced by the board.

In terms of the degree to which staff behaviors are both specialized and standardized, there is a strong suggestion that increased structuring is directly related to the introduction of increasing numbers and kinds of specialized programs. Not only does specialization suggest the need for more standard types of control but it also appears to result in an increase in the number of support staff. This increase in specialization appears also to result in more decentralized decision-

making. In this last respect colleges are not unique. Studies of other organizations have reported the same phenomena (Hage and Aiken, 1967).

Mechanisms for controlling and regulating employee behavior also tend to be different at different periods in the structural development of colleges. In the initial stages of growth, colleges tend to exercise control by centralizing decision-making at the level of the chief executive and the board of governors. This centralization and the wide reporting spans enjoyed by the chief executive also suggest a sensitivity to the surrounding environment to which the college is accountable, namely, the various boards of school trustees represented on the board of governors. In the "Youth" Stages, colleges appear to exercise control by instituting many direct reporting relationships between subordinates and supervisors. There was a strong suggestion that control could be obtained more readily through surveillance and reporting procedures than through the establishment of more impersonal and procedural mechanisms. In the later stages these reporting relationships were either stabilized or even reduced. They became supplanted by the gradual introduction of more and more written documents to define and record the performance of employees and to communicate rules, regulations, and guidelines for standardizing procedures.

In summary therefore, publicly supported colleges appear, in the dimensions of structuring staff activities, of decentralizing decision-making and of changing hierarchical configurations, to exemplify the process commonly referred to as "bureaucratization." In other words, colleges, as has been postulated for other formal organizations, seem to move from a participative, open-climate stance in their early years to a more authoritarian, closed-climate stance in their later years. They also appear to become less influenced by community wishes as these are expressed through a board of governors. In addition, these progressions seem to occur independently of such factors as changes in chief executive, in legislation, in the composition of the board of governors, in location, in physical plant, and in numbers and kinds of programs.

From what sources do developmental progressions arise? Part of the answer appears to lie in the not-very-profound statement, "They arise from preexisting structural characteristics." Sorokin (1961) has stated that

Growth is the unfolding of the immanent potentialities of the system over time. Environment retards or accelerates, facilitates or hinders, reinforces or weakens the realization of the potentialities (p. 1311).

In fact, this growth study found that the nonstructural factors mentioned above did influence the "unfolding" of the college structures in the ways in which Sorokin suggested. This suggests the (perhaps unpalatable) conclusion that there is a certain inevitability to the development of college administrative structures. This inevitability, if it exists, must surely form one of the sets of constraints in restructuring of organizations. Perhaps one of the sources of college tension is the reluctance on the part of college groups to acknowledge and to take into consideration this constraint.

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