A CRITIQUE OF CHICKERING'S DEVELOPMENTAL VECTORS

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Chickering's seven developmental vectors are examined to determine their viability as a classification schema. The author suggests that the classification is not adequate, as the classes are neither mutually exclusive nor exhaustive; and the substantive terms of the classes are not in all cases well-defined in conceptual or operational ways.

The developmental schema described by Chickering (1969) includes seven "vectors" and is assumed to be a classification as it partitions young adult personality development into subdivisions. The purpose of this paper is to determine the degree to which Chickering's schema satisfies the criteria for a legitimate classification. To determine adequacy, the criteria used by Steiner (1975) will be applied. For the purposes of this discussion, a classification can be considered adequate if: (1) the classes are generated by the same principle or principles; (2) the classes are well-defined; (3) the classes are exhaustive; and (4) the classes are exclusive.

The Classification

Chickering generated the classes (vectors) as a result of a review of current research and theory as well as case histories of and comments from college students. The major challenge to Chickering's generation of classes is that the review of the literature was not exhaustive. Chickering called attention to this in the introduction to the vectors: "the primary aim is to be of use to those concerned with higher education.... To this end the emphasis is on ideas and not on exhaustive documentation. Supporting evidence is presented, the general thrust of relevant research is described, and illustrative studies are mentioned, but the literature is not reviewed in detail" (1969, p. 5). Therefore, the research from which the vectors are drawn can be described as methodologically qualitative. That is, Chickering was primarily concerned with descriptive data produced from personal documentation and participant observation. In this type of research the themes emerge from a consideration of the data at hand. It is a logical assumption then that if the review of the literature is inadequate, not all of the themes or incomplete themes will emerge from the data.

On a superficial level, the classes (achieving competence, managing emotions, developing autonomy, establishing identity, freeing interpersonal relationships, developing purpose, and developing integrity) appear exhaustive. That is, the set of substantive terms is complete; there seems to be no "other" class required. The domain of the classification is college student development as indicated by Chickering (1969), yet a definition of college student development was not presented. This makes it difficult to determine whether the subdivisions (classes or vectors) of the whole (domain of college student development) are exhaustive.

The classes should also be exclusive; that is, there should not be evidence of intersection between classes. Considering "competence" and "managing emotions" to be two distinct classes is difficult given Chickering's description of the two vectors. For instance, he used the concept of aggression as an illustration of athletic competition when discussing "physical competence." Aggression can be considered a component of "managing emotions." Also, aggression seems to be related to the class of interpersonal relations; therefore, aggression could also be categorized under "interpersonal competence."

Although Chickering maintained that the vector of identity is "more than simply the aggregate of change in these other areas" (p. 13) (referring to the areas of competence, emotions, and autonomy), this assertion has not been adequately documented. For example, the themes discussed under "identity" tend to correspond with those discussed under the previous three vectors, or class headings; e.g., "Clarification of conceptions concerning physical needs (physical competence), and personal appearance (interpersonal competence), and clarification of sexual identification (managing emotions), of sex-appropriate roles and behavior (managing emotions)" (p. 14).

While this example involves only two of the seven vectors, it does question whether Chickering has used an exclusive set of classes. This example also points to a major problem of the Chickering classification: inadequate definitions of the classes. It is impossible to determine exhaustiveness or exclusiveness of classes unless the terms (or phrases) defining the classes have meaning.

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Definition of Class

To have meaning, "substantive terms of an *adequate* educational theory, therefore, not only (must) have clarity and completeness but they also (must) have conceptual meaning in terms of the teaching-studenting process and operational meaning through variables of that same process" (Steiner, 1978, p. 39). To have conceptual meaning according to Steiner "is to have connotations or senses descriptive of the classes..." (p. 40). An adequate descriptive definition...must (also) have a content so that the stated conditions are characteristic of instances of classes. "An adequate definition is one that takes the form of *definiendum ≡ definiens,* where 'definiendum' stands for the term to be defined, ' ≡ ' stands for if and only if, and 'definiens' stands for the defining terms" (Steiner, 1978, p. 40). According to Steiner, "an adequate operational definition sets forth the process for mapping instances into classifications of values. Such processes are considered under techniques of measurement" (Steiner, 1978, p. 41).

With the above criteria in mind, the substantive terms of each vector will be examined. The degree of adequacy of the meaning of the individual terms will permit an evaluation of the merit of the adequacy of the overall classification.

Competence

Competence, the first vector, is divided into three subcategories: intellectual competence, physical and manual competence, and inter-personal competence. Chickering used White's (1960) somewhat vague definition of competence, "the adolescent equivalent of what Erikson calls a sense of industry" (p. 9). In addition, the following terms are equated with competence: plans for study, abilities and limitations, struggles with materials to be learned and skills to be attained, occupational learning, career plans, and finally, concerns about modern society as the scene of future endeavors (p. 10). While these terms provide a sense of what "competence" is, singly or collectively they fall short of a succinct operational definition. Chickering does not clarify what White meant by using Erikson's "sense of industry." This added information would help in concretely defining competence. Chickering stated that "competence usually has to do with, and is signified by, productivity and achievement" (p. 20). To examine the conceptual clarity of this statement, competence can be assumed to be the *definiendum* and productivity and achievement to be the *definiens.* In terms of adequate content, productivity and achievement seem suspect. According to definition, increased competence would result in increased achievement and productivity. This ignores the area of quality—more productivity in the area of intellectual competence, for instance, does not logically mean increased competence in that area. Achievement, though, should serve to specify this area, but achievement is possible through cheating, and thus, is not a true indication of increased competence.

Competence was defined further by Chickering through White's (1963) description: "The competence of a living organism means its fitness or ability to carry on those transactions with the environment which result in its maintaining itself, growing, and flourishing..." (p. 33). Operationally this definition could easily include all the other vectors (or classes) within the four words "transactions with the environment." The point is the definition of competence is so broad as to include all the other vectors. Nor does the examination of Chickering's subdivisions help to clarify the meaning of competence. The discussion of physical and manual competence centered around the examples of competitive athletics. The studies chosen to be illustrative of this aspect of the vector seem to imply physical competence is acquired by successfully competing in an athletic event. What implications does this attitude have for those not desiring or successful in athletic competition? Can they not develop physical competence? Are there other areas in which persons can become physically competent to spiral themselves into another vector? With intellectual competence there is a similar problem. Chickering's wording and examples suggest that intellectual competence can be determined through assessing intellectual achievement. This assertion, as previously discussed in this essay, cannot be supported.

Managing Emotions

There is no stated definition of the second vector, "managing emotions." It can be inferred that managing emotions connotes loosening of repressions, monitoring of recurrent patterns of incident and reaction, and developing of self-centeredness with regard to sexual and aggressive emotions. In examining the conceptual clarity of this vector, managing emotions cannot be assumed to be the *definiendum* as the phrase indicates a process and not a single term to be defined. In this vector, then, it is impossible to follow the form of analysis which was followed in the vector of competence. The process of "managing emotions" seems to be defined as "developing flexible controls congruent with the self one is and is becoming" (p. 41). Chickering, however, divided the concept into two parts, "increasing awareness" and "increasing integration."

"Increasing awareness" includes such activities as an "increased freedom of expression in word or behavior," a tendency "to become somewhat less self-controlled, orderly and conscientious." The previously mentioned definition of "managing emotions" does not include the clause of "increasing awareness" as described by Chickering. The examples used for "increasing integration" often point to sexual emotions, anxiety, alienation and general "disturbed" behavior. Chickering did not explicate how

students go about controlling or dealing with these emotions (integration) but merely indicated that they do indeed complete college coping with them much better than they did when they entered college. The logical (expected) tie between examples used for "increasing awareness" and "increasing integration" was not demonstrated to exist. It seems in considering "managing of emotions" the *process* should be the most important aspect to discuss. Instead, Chickering focused on the mere existence of the process. Therefore, it is impossible to determine the operational meaning of "managing emotions."

Autonomy

The third vector, "autonomy" yields conceptual clarity. Chickering divided autonomy into three divisions: emotional independence, instrumental independence, and recognition of interdependence. Emotional independence is defined as being "free from continual and pressing needs for reassurance, affection, or approval" (p. 58). Operationally, the student moves toward emotional independence when separated, at least in terms of immediate proximity, from parents. Instrumental independence is divided into two parts; "the ability to carry on activities and to cope with problems without seeking help, and the ability to be mobile in relation to one's own needs and desires" (p. 58). Recognition of interdependence is vaguely defined as a process including the previous two subdivisions. However, it can be described as the realization "that one cannot receive benefits from a social structure without contributing to that structure" (p. 74). In terms of operational meaning, "autonomy" seems sound. However, the definition of instrumental independence is suspiciously reminiscent of the topics discussed under "managing emotions." It can be questioned whether "ability to be mobile in relation to one's own needs and desires" is different from the definition of "managing emotions" (i.e., developing flexible controls congruent with the self one is and is becoming"). This similarity can easily be construed as an intersection of classes despite the fact that the definitional problem can be traced to the vector class of "managing emotions."

Identity

The task of analyzing the fourth vector, "establishing identity," is difficult because Chickering defined it as the culmination of the previous three vectors. This analysis is confounded by the fact that Chickering noted that all the developmental vectors could be classified under the heading "identity formation." If this is true, then why is identity included as a separate vector? This vector is essentially a review of the previous vectors and affords a jumping off point from which to leap into the following vectors. Development of identity is partially equated with the socialization process students experience during college. This fourth vector is obviously not a separate vector but a reiteration of the previous vectors. Its intersection with other classes is readily apparent and its function in the classification is problematic.

Freeing Interpersonal Relationships

The fifth vector, "freeing interpersonal relationships," is defined as having two parts: "increased tolerance and respect for those of different backgrounds, habits, values, and appearance *and* a shift in the quality of relationships with intimates and close friends" (p. 94). In further defining "shift in relationships," Chickering stated that it is a moving "away from dependence toward an independence" (p. 94). Through this description we learn more about what was meant by the term interdependence in the vector of "autonomy," but less is now known about "freeing interpersonal relationships." Again a clear intersection of classes is evident. Vectors are dependent on other vectors for their conceptual clarity. This overlap limits their operational functions, as it is impossible to distinguish the bottom line —the original *definiendum* begets a *definien* to serve for another *definiendum*. Many subdivisions of the vectors, meant to further specify meaning, result in confusion when they emerge as subdivisions in subsequent vectors.

Purpose

The sixth vector, "purpose," was more precisely defined. Developing purpose was clearly proposed as the process of "formulating plans for action and a set of priorities that integrate three major elements" (p. 108). The focus of "purpose," then, operationally includes: (1) vocational and recreational interests; (2) pursuit of vocation; and (3) lifestyle issues including concerns for marriage and family. Chickering used the phrase "increasing integration" to further explicate the process. This is assumed to be an unintentional intersection of the classes. Nevertheless, it supports the contention that the vectors may be too similar as conceptualized to constitute distinct classes. Lifestyle issues are defined in terms of rendering decisions related to the first two subdivisions of "purpose." Marriage and family are separate issues subsumed under lifestyle. It seems then that lifestyle (the way Chickering uses the word) is synonymous with "purpose" and that avocational, vocational, and choice of interpersonal relationships (permanent or transient) are the basic subdivisions which follow. (The restatement of marriage and family into choice of interpersonal relationships, permanent or transient, allows for those who do not choose marriage as a viable option or those who do not choose a heterosexual relationship.) It is suspected that lifestyle should include more specific subdivisions and that it should be presented in such a way that it is not construed as synonymous with the heading under which it falls.

Integrity

The seventh vector, integrity, is described as being closely related to the vectors of "identity" and "purpose." The process of developing integrity is defined as "involving the development of standards by which self appraisal is conducted—one appraises himself in terms of which self-esteem varies as a consequence of the appraisal" (p. 124). To develop integrity then is to humanize values and to personalize values, and to build congruence. Apparently, "humanizing" is a process of tearing down of learned values; "personalizing" is a process of accepting values which students discover on their own or decide to keep from the reconstruction process; and "building congruence" is the same as "developing integrity." Integrity or congruence is reflected by the student "in consistency of belief and behavior, of word and deed" (p. 142). It is assumed that only humanizing values and personalizing values are subdivisions of integrity as congruence is synonymous with integrity. This seems to be another example of an intersection of classes perhaps resulting from an inadequate definition of terms.

Conclusions and Implications

After an examination of the adequacy of Chickering's classification, several conclusions seem warranted. Before any domain can be subdivided it is necessary to clearly articulate the conceptual meaning of the domain. In this case, college student development as the domain must be defined in semantically clear terms. Chickering's classification does not seem to be adequate. The classes (or vectors) are not mutually exclusive, as they exhibit numerous examples of intersection; nor are they exhaustive as is evidenced by the lack of clarity and precision used in their definition. Finally, the substantive terms of the classes are not in all cases well-defined in conceptual or operational ways.

Although methodologically different, the few critiques of Chickering's model have reached similar conclusions. For example, Widick, Parker, and Knefelkamp (1978) have commented on Chickering's lack of specificity:

> While Chickering's work is empirically grounded and compre-
> hensive, the breadth of his theorizing is not accompanied by
> sufficient specificity or precision. In describing the vectors,
> Chickering lays out the types and patterns of change in a global
> fashion. His descriptions of the vectors sometimes articulate
> growth in terms of an inner sense, while at other times he speaks in
> behavioral terms. A better understanding of growth in each vector
> requires delineation of component attitudes, self-percepts,
> behaviors, and sequence of changes. After reading Chickering's
> discussion one still wonders: What *is* intellectual competence?

What are the steps involved in achievement? Greater explication is needed for each of the seven areas (Knefelkamp, 1978, p. 27).

For student affairs staff, such theories should not go unchallenged as to their conceptual rigor. Few critical analyses of Chickering's work have appeared. However, a number of writers have reported operationalizing Chickering's theory for use with specific campus programs. It is tempting to avoid the necessary steps of testing and refining the theories at the core of student development work. However, to gain a clearer understanding of what student development means and how it can be enhanced in a particular setting, these theories must be scrutinized. With a clearer understanding of the college student supported by adequate theories, we can articulate more clearly to our colleagues in academe what it is we do.

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