Most college vocabulary books lack the sophistication of a complex. Rather, they reflect the characteristics of congeries or disparate objects grouped together without any logical basis. Vocabulary study in college should focus on the process of concept formation in all its complexity, with emphasis on the relationship between the specific and general, concrete and abstract range of meanings. Effective exercises will require the use of synonym guides, dictionaries, and thesauri. A structural analysis of words through the use of templates can assist students in developing precision in word meanings and conceptual clarity. (KS)
Paper Presented at the 1976 Ninth Annual Western College Reading Association Conference Tucson, Arizona

Templates for Vocabulary

Remember the twenty -ation words (starvation, examination) or /t/ spelled -ed words (walked, stopped) or re- words (retake, revise) a week in elementary school. Sometimes there were weeks of potpourri words (behead, catapult, seize, deny, Pacific). Vygotsky's descriptions
for congeries or heap and complexes best explain the words we memorized in elementary school. Vygotsky (6:59) defined a congeries of heap as "... consisting of disparate objects grouped together without any basis." Thus, congeries was a potpourri week.

"In a complex, individual objects are united... not only by... subjective impressions but also by bonds actually existing between these objects" (6:61). The -ation, -re, etc. were the bonds existing between some of our spelling words.

What are college vocabulary books like? Most of them lack the sophistication of a complex. Their chapters and exercises have the characteristics of congeries or heaps. Zuckerman's (7) Words Words Words is a collection of heaps of words that have no bonds. On page twenty-one there is an exercise on synonyms. The words are: ascribe, analogy, improvident, ambiguous, infallible, doctrine, picturesque, exuberance, exhibitionism, relegated. In this potpourri, the bond, if there is one, runs horizontal to a synonym for the answer in a multiple choice set.

For instance, the word: ascribe has four words to its right. The four words are: a. sign, b. correspond, c. attribute, d. write. Thus, the synonymic bond runs from ascribe to attribute.

These ten words have no intrinsic bond. They are together by chance. Their meanings denote nothing more to the student than a vague syncretic conglomeration of words that must be learned. Their diverse meanings force the student to resort to mnemonics. Usually mnemonics generate a syncretic mental set resulting in highly unstable learning. Their presentation
preclude co-ordinate, superordinate, and subordinate intersections which are necessary for conceptualization. A vertical dimension is essential for conceptualization. The vertical dimension of the concept behind the word *ascibe* is expressed by the words: attribute, assign, ascribe, impute, etc.

Feinstein's (2) *Programmed College Vocabulary 3600* and Davis's (1) *Basic Vocabulary Skills* present words in complexes. Feinstein's book has four chapters with the bonds being parts of speech (adjectives, verbs, nouns and five chapters with subject and discipline bonds). "In a complex, the bonds between the components are concrete and factual rather than abstract and logical..." (6:61).

Davis's book also has a discipline focus in the second part. The first four chapters like Feinstein's first two chapters present morphemes. Congeries best describe their presentation of morphemes.

A discipline focus is more appropriate than one on parts of speech. However, memorizing words associated with a discipline does not in itself lead to concept formation or clarification. The discipline focus could result in what Vygotsky (6:66) referred to as a pseudo-concept. The generalization formed to create a pseudo-concept, although phenotypically resembling a concept, is psychologically very different from a concept. Vygotsky gave the following explanation of how a pseudo-concept differs from a concept.

"...For instance, when the sample is a yellow triangle and the child picks out all the triangles in the experimental materials, he could have been
guided by the general idea or concept of triangle. Experimental analysis shows, however, that in reality the child is guided by the concrete, visible likeness and has formed only an associative complex limited to a certain kind of perceptual bond.

This type of response activates short-term memory which involves only the experience itself. No consolidation occurs. No template is built from coded sensory data for permanent storage. "Conceptualization of the structure and meaning of experience... is conducive to effective retrieval at a later time." (5:287). Foss (3:306) wrote, "... it seems that a pattern, template, schema, etc., is learned first, then behavior is produced to match the pattern." Vygotsky (6:110) explains, "Concepts do not lie in the child's mind like peas in a bag, without any bonds between them."

"... (To) be adequately characterized each concept must be placed within two continua—one that represents objective content and another that represents acts of thought apprehending content. Their intersection determines all the relationships of the given concept to others—its co-ordinate, superordinate, and subordinate concepts." (6:112-113).

Hinde (4:7-8) explains the limitations of concepts.

Classifying is a basic human activity; our very perception of the world depends on our classifying the sensations we receive. Classification also forms the basis of all science, because to study natural phenomena it is necessary first to describe and classify them. But the pigeonholes we use are often artificial, and our dependence upon them may conceal the fact that they do not quite fit nature. ... (One) of the first lessons to be learned is that most classifying systems, if pressed far enough, do not work. What we must do, therefore, is to use our categories as tools and not to dignify them as absolutes, bearing constantly in mind the sorts of distinctions for which they are useful and the nature of their limitations.
This author knows of no college vocabulary book with a format that challenges the capability of a post-puberty intellect. Congeries, complexes and pseudo-concepts are the natural cognitive functions of the prepuberty intellect. Vygotsky (6:58) explains:

The development of the processes which eventually result in concept formation begins in earliest childhood, but the intellectual functions that in a specific combination form the psychological basis of the process of concept formation ripen, take shape, and develop only at puberty. Before that age, we find certain intellectual formations that perform functions similar to those of the genuine concepts to come.

Vygotsky (6:54) quotes Rimat as concluding, "Thought in concepts, emancipated from perception, puts demands on the child that exceed his mental possibilities before the age of twelve."

To meet the academic needs of the college students vocabulary books must have formats designed to challenge the post-puberty intellect. "The development of concepts, or word meanings, presupposes the development of many intellectual functions: deliberate attention, logical memory, abstraction, the ability to compare and to differentiate" (6:83). "If the environment presents no such tasks to the adolescent, makes no new demands on him, and does not stimulate his intellect, by providing a sequence of new goals, his thinking fails to reach the highest stages or reaches them with great delay" (6:58-59). Vocabulary study in college should focus on the process of concept formation in all its complexity. This process is a movement of thought within the pyramid of concepts, constantly alternating between two directions, from the particular to the general, and from the general to the particular (6:80).
Learning Assistance Centers can more effectively meet the college student's concept and word meaning needs by exercises which will require the use of two or more of the following sources:


Flexible use of these sources will provide students majoring in any discipline opportunities to improve the precision of word meanings and conceptual clarity. Students should be encouraged to purchase their own dictionary and thesaurus. Students should leave the Learning Assistance Center committed to the use of a dictionary and a thesaurus after college. A good thesaurus has enough synonyms and antonyms for any concept for a
student to manipulate in his language structure the mental operations necessary to transfer that concept from the plane of action to that of language, i.e., to re-create it in the imagination so that it can be expressed at various levels of precision and intensity. A good dictionary will provide the necessary etymological information for the student to discern the metaphorical relationship between the abstract and concrete concepts represented in many words. It is this metaphorical relationship which enables man to have abstract concepts. Vocabulary study should explore the metaphorical relationships between concrete and abstract concepts in order to increase conceptual clarity for abstract concepts.

A student desiring to increase word meanings and conceptual clarity for the concept: feelings could refer to sections 853 (Feelings), 854 (Lack of Feelings), 855 (Excitement), and 856 (Inexcitability) in Roget's International Thesaurus. The following are two templates designed to assist students in developing precision in word meanings and conceptual clarity. For purposes of illustration, let's consider the concept: feelings. Please note that the first template requires the use of a dictionary as well as the thesaurus.
The thesaurus helps the student to readily identify words used to express various degrees of precision and intensity for the concept being studies. The dictionary aids the student in both phonic and structural analysis. Phonic analysis for the most part is based upon syllables in the English language. As soon as the student understands there are only four basic types of syllables in oral language, he has the foundation necessary to discover how twenty-six graphemes represent the forty plus phonemes of English. Many students need this understanding before they can improve their spelling.
Structural analysis reveals to the student the metaphorical relationships between concrete and abstract concepts represented by words. It is the morphemes that hold the keys to this knowledge. For example, the word: exasperate has as a foundation the concrete concepts of out and rough. When a person is exasperated, the rough aspects of his personality emerge or come out. The suffix: -ate suggest the act or process of the revealing of these rough aspects. Thus, -ate is a grammatical morpheme which permits exasperate to be used as a verb in English syntax. Vocabulary books assume too much when they do not offer exercises in phonetic and structural analysis.

Template II is a structure for critical thinking. It requires a student to consider how positive or how negative a particular word expresses a concept. Critical reading requires a close look at the author's choice of words. His choice can best be evaluated on a scale which includes synonyms and antonyms. The topography of a concept is the sum of the precision and intensity expressed by its synonyms and antonyms. Template II focuses on the topography of the concept: feelings or emotions.

**TEMPLATE II**

<table>
<thead>
<tr>
<th>Negative</th>
<th>Positive</th>
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</thead>
<tbody>
<tr>
<td>exasperate</td>
<td>kindle</td>
</tr>
<tr>
<td>provoke</td>
<td>quicken</td>
</tr>
<tr>
<td>disturb</td>
<td>animate</td>
</tr>
<tr>
<td>disquiet</td>
<td>exhilarate</td>
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<tr>
<td>pique</td>
<td>titillate</td>
</tr>
<tr>
<td>exasperate</td>
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</tbody>
</table>

**Emotions**
Templates should not be used to force students into patterns of convergent thinking. They should be used to help students structure their thinking. They should provide students with the opportunities to discuss, to compare, to re-create with language the content of experience.

Templates are not designed to make concept formation or modification easy. They are designed to make concept formation or modification possible. Vygotsky (6:85) reminds us that "... concepts are not simply acquired by rote but evolve with the aid of strenuous mental activity..." "The result is a ceaseless struggle within the developing language between conceptual thought and... thinking in complexes" (6:74). "It should be noted, ..., that even the normal adult, capable of forming and using concepts, does not consistently operate with concepts in his thinking. ... (T)he adult constantly shifts from conceptual to concrete, complex-like thinking. The transitional, pseudo-concept form of thought is not confined to child thinking; we too resort to it very often in our daily life." (6:75).

"The greatest difficulty of all is the application of a concept, ... to new concrete situations that must be viewed in these abstract terms—a kind of transfer usually mastered only toward the end of the adolescent period. The transition from the abstract to the concrete proves just as arduous... as the earlier transition from the concrete to the abstract." (6:80). Instruction in and vocabulary study for the college student should be oriented toward his post-puberty intellect and not toward his pre-puberty intellect. The only good kind of instruction and study is that which marches ahead of what has already been learned and leads to what a student is capable of knowing.
REFERENCES


