

---

# Pro Rege

---

---

Volume 14 | Number 1

Article 3

---

September 1985

## Experiential Learning: Instructional Theory or Outmoded Fad? (revised)

Gloria Goris Stronks

Follow this and additional works at: [https://digitalcollections.dordt.edu/pro\\_rege](https://digitalcollections.dordt.edu/pro_rege)



Part of the [Christianity Commons](#), and the [Higher Education Commons](#)

---

### Recommended Citation

Stronks, Gloria Goris (1985) "Experiential Learning: Instructional Theory or Outmoded Fad? (revised)," *Pro Rege*: Vol. 14: No. 1, 9 - 18.

Available at: [https://digitalcollections.dordt.edu/pro\\_rege/vol14/iss1/3](https://digitalcollections.dordt.edu/pro_rege/vol14/iss1/3)

This Feature Article is brought to you for free and open access by the University Publications at Digital Collections @ Dordt. It has been accepted for inclusion in Pro Rege by an authorized administrator of Digital Collections @ Dordt. For more information, please contact [ingrid.mulder@dordt.edu](mailto:ingrid.mulder@dordt.edu).

# Experiential Learning: Instructional Theory or Outmoded Fad? (revised)

Gloria Goris Stronks  
Professor of Education at Calvin College



*Gloria Goris Stronks holds an A.B. from Calvin College, an M.A. from Western Kentucky University and an Ed.D. from Northern Illinois University. From 1979 to August 1985 she taught at Dordt College and, among other duties, served on the board of Pro Rege. She currently is on the Education Faculty of Calvin College in Grand Rapids, Michigan.*

At some time during the summer months, college faculty receive the results of the students' evaluation of their latest semester of teaching. If they are like most of us they are delighted with the higher ratings and excuse the lower ratings with the comment, "Well, no teacher can please everyone."

A favorite comment on a student evaluation form for one of my courses was, "This course was really a puzzle to me. I did the research paper and you and I talked a lot about my thinking and I learned a great deal from that. And I did the practicum and we talked a lot about my experiences and I learned so much from that. I read a lot of books and articles and really learned in this course so I have to give it a high rating. But my learning was largely due to my own efforts. I don't think that's really the purpose

of a college course. Don't you feel guilty that you were really only guiding my thinking and not actually teaching?" Clever student to realize that her learning was largely due to her own efforts. Clever, also, to put her finger so exactly on my feelings about this kind of learning situation.

When one asks alumni what they remember concerning the academic part of their college life, most will remember courses in which the teachers gave time and interest to the students. Unfortunately this is not always the case. In any institution of higher education many former students will recollect that faculty members didn't really care about individual students who were not among the best and the brightest. They will recollect that teachers were absorbed in narrow specialties and that it was difficult for

the insecure student to become truly involved in his or her own learning.

At the heart of this situation stands the self-definition that is common among college teachers. In graduate school future college teachers learn that their present task is to become specialized scholars, developing skills which will add to the body of knowledge in their chosen discipline. They will become members of a profession but that profession will be defined by a chosen field of study rather than by the work which will take up at least 80 percent of their time. Thus, they will choose to be referred to as philosophers, historians, scientists, and psychologists, rather than finding their identity as college teachers. The memberships in professional organizations, the conferences attended, the research undertaken all reinforce the tendency to become more knowledgeable about their disciplines rather than becoming acquainted with developmental findings concerning the learning of college students or with research concerning techniques and skills which are appropriate in helping that learning take place. College administrators and faculty review committees compound the problem by looking at student evaluations only in order to determine whether the students are comfortable and pleased with the instruction in a given course, rather than attempting to determine whether the instruction in that course is arranged with a concern for the students' intellectual, moral, and emotional development.

College teachers speak of themselves as "influencing" students, as though the greatest effect in the development of the students comes from outside. They will talk of "exposing" students to particular subject matter hoping that the exposure will cause learning to happen. They yearn to have their students study their subject matter "in depth" without a clear idea concerning the difference between the learning of undergraduates and graduate students.

In the early American college the primary methods of instruction were recitation and

disputation. For the recitation, students were required to repeat textbook assignments orally and verbatim. For the disputation students were given a proposition and then individual students were called on to defend or attack that proposition, always aware that other students would argue the counterposition. The student's language was recognized as an important part of learning.

Even as late as 1750, lectures remained few and were used only as supplements to recitations. The lectures were presented very slowly and the students copied them exactly as presented. Few textbooks were available, and since instructors were considered to be the specialists in given areas, their task was that of telling the students the information from textbooks to which the students did not have access. As enrollments began to grow, it became difficult for instructors to call on students intensively and so the recitations and disputations were set aside.<sup>7</sup> In the middle 1800's, concern for lack of student discussion about the lectures and about their readings led to the formation of seminars and discussion groups in a few colleges. They were often called "conference quiz sections" led by graduate students and intended to reduce the negative features of large class sizes. Since 1900, new instructional techniques have not been developed although films, television, audio-tutorials, and computers are being used for delivering instruction.

The idea behind this kind of teaching was that the task of the instructor was to fill the students up with knowledge. The attempts at using seminars and class discussions show a recognition that the student's language was somehow involved in learning, but for the most part that language was limited to essay answers on tests. As enrollments increased, writing essay answers took a back seat to objective tests, which could be quickly and easily scored.

In the last fifteen years changes have taken place. We are all aware of the demands students made in the sixties to have instruction made relevant to their lives. "Innova-

tion" and "change" were magic words on campuses and some college faculty responded by using contracts, T-groups, and other techniques which seemed interesting. These innovations were often not successful because they were used, at times inappropriately, without a clear understanding of how students make meaning out of the college experience. In a number of ways, the late 1970's have been a reversal of the 1960's. There is presently a more conservative campus climate, and concern for declining test scores have encouraged faculty members who were uncomfortable with anything other than the lecture method to voice their disapproval concerning those "outlandish" methods in use.

At the same time, however, a few researchers such as Kohlberg<sup>2</sup> and Perry<sup>3</sup> used an extension of Piaget's early work on cognitive development and began to study the intellectual, moral, and emotional development of older adolescents and adults, including college students.

In the decade since Perry's work we have seen theories and developmental models of college student learning flourish. The Study Group on the Conditions of Excellence in American Higher Education has reported that knowledge about how to improve overall student achievement is available but not widely known or used by college faculty and administrators.<sup>4</sup> The problem is intensified because the college population is rapidly changing. Much of the early research was done with white male undergraduate students, while presently more than half of all undergraduates are females and one out of six undergraduates is a member of a minority group. Most of the early research was done with traditional age, full-time students, while in the present student population two out of five are over the age of twenty-five and fewer than three in five are attending college full time.<sup>5</sup>

What is clear is that faculty and administrators need to know the information provided by research up to this point and need to consider how to apply that research

to their educational settings. I intend to present a theoretical framework for one effective teaching-learning situation and to provide reasons to support broader use of this strategy. The strategy with which I am concerned is teaching by direct experience or experiential learning.

We are seeing an increase in sponsored experiential learning in higher education. Internships, field placements, work/study assignments, role plays, and gaming simulations are examples of just a few of the more familiar situations. Most off-campus programs carry with them strong elements of experiential learning. Many students have reported that learning by experience has been extremely beneficial for them. We have a situation in which our practice has gone faster than our educational theory and that should make us uncomfortable. To use any instructional strategy because it seems to be popular with students is questionable, to say the least, and leads to teaching which is full of gimmicks and fads, concerning itself more with techniques than with substance.

Practitioners in the area of student personnel are familiar with the work of Arthur Chickering.<sup>6</sup> Chickering's focus has been on taking the theory and research concerning student development and applying it to helping students make good decisions. He suggests that development in young adulthood occurs along seven dimensions: developing competence, managing emotions, developing autonomy, establishing identity, freeing interpersonal relationships, developing purpose, and developing identity. In each of these areas, students continually recognize more complexity, shifting, for example, from thinking of their academic task as acquiring facts to recognizing growth in their capacity for analysis, synthesis, and evaluation. He believes that a college environment can interact with students in certain ways which encourage their development along these dimensions and that by giving proper attention to developmental needs, colleges can design coherent programs that better prepare students for the kind of service re-

quired by coming social changes. According to Chickering, "The trick is to design the appropriate combinations of content and processes with the developmental tasks in mind while maintaining a clear focus on the important disciplinary objectives."<sup>7</sup>

When few electives are offered, when books and print are the sole objects of study, when teaching is by lecture, when evaluation is frequent and competitive, ability to memorize is fostered. Sense of competence, freeing of interpersonal relationships and development of identity and purpose are not. When choice and flexibility are offered, when direct experiences are called for, when teaching is by discussion, and when evaluation involves frequent communication concerning the substance of behavior and performance, the ability to analyze and synthesize is fostered, as are sense of competence, freeing of interpersonal relationships, and development of autonomy, identity, and purpose.<sup>8</sup>

Chickering's work was carried forward and along the same lines was developed the theory of intellectual and ethical development of college students designed by William G. Perry and his associates at Harvard University. Perry's work has already been reported on in this journal.<sup>9</sup> Recently Perry has remarked on the necessity of allowing for grief in the process of the student's development.<sup>10</sup> Each of the upheavals of cognitive growth which help a student move from one position to another, threatens the balance between hope and despair. It surely is a delight to experience new ways of thinking, but the simpler ways of thinking carried with them the student's hope and aspirations. It takes time for one's hope and dreams to catch up with such leaps of the mind. When that happens, the student will be able to look back at the simpler times with wry nostalgia. Perry suggests that, as

with any mourning, this grief is easier to deal with when it is recognized by another, and that other could be the college instructor. Students need to have conversations with their instructors concerning what is happening to them as a result of their learning. Perhaps simply by asking questions and by listening in respect for the changes which are occurring in the student, the teacher can serve as a bridge linking the old self with the new. At the very least, students need to sense that their teachers knew them before the change occurred and know them now.

### Kolb's Theory of Experiential Learning

Building on the work of both Chickering and Perry, Kolb has presented an experiential learning model which is focused on the thesis, first articulated by the Russian cognitive theorist, L. Vygotsky, that learning from experience is the process whereby human development occurs. But these experiences must be shared and interpreted through dialogue with others.<sup>11</sup>

Experiential education as a movement is attributed by most people to the educational philosophy of John Dewey and, although the source of the movement is really a diverse group spanning several generations, Dewey articulated most clearly the guiding principles for this type of learning, always viewing the student as an autonomous meaning-maker. In the past forty years, many of these ideas have found their way into traditional education at every level, although experiential education practiced in the sixties was often not at its best, not fully achieved, even according to the pragmatist point of view. Christian educators have repudiated the pragmatist idea of autonomous freedom but have come to recognize the importance of experiential learning, not to guide students to give their own meaning to things, but to guide them toward making responsible judgments and decisions, living in obedience to the Word of God.

Another theorist to whom Kolb admits his

indebtedness is the social psychologist, Kurt Lewin. Lewin consistently was concerned with the integration of theory and practice, an interest which was stimulated by his experience as a refugee to the United States from Germany. In an attempt to understand in a practical way the psychological dynamics of dictatorship and democracy, Lewin studied authoritarian, democratic, and laissez-faire leadership styles.<sup>12</sup> His classic studies revealed that "learning is best

Adults who are "dropping back in" to college campuses are indicating that learning methods which do separate work and study, theory and practice, may provide a more familiar and therefore more productive arena for learning for all college students. Kolb believes that learning is best facilitated when there is dialectic tension and conflict between immediate concrete experience and analytic detachment and this conflict is a central dynamic in the process of experien-

**...when we teach and when we test in the college classroom, we must do so with a recognition of the importance of both process and outcome.**

facilitated in an environment where there is dialectic tension and conflict between immediate concrete experience and analytic detachment."<sup>13</sup>

Kolb's concept of the learning process is different from that which was distorted first by rationalism and later by behaviorism. Kolb does not present this theory as a third alternative to behavioral and cognitive learning theories, but rather to suggest a "holistic, integrative perspective on learning that combines experience, perception, cognition, and behavior."<sup>14</sup> He continues to call it "experiential," not only to tie it clearly to its intellectual origins in the work of Dewey, Lewin, and Piaget, but also to emphasize the central role that experience plays in the learning process. However, unlike earlier experiential theorists, Kolb emphasizes the central role of dialogue concerning the theories behind the practice.

This new kind of experiential learning, according to Kolb, integrates the best of the traditional and the experiential in education in order to help the student cope with changes and to encourage lifelong learning.

tial learning. This experience may take the form of internships, a business simulation, a cross-cultural arrangement, a case-study, an action research project, or a discovery curriculum, but always must include a carefully structured dialogue about that experience so that ideas may be formed and reformed.

Kolb refutes the concept of learning as a constant, fixed element of thought which can be measured either by tapping into a storehouse of facts or by watching behavioral responses to specific stimulus conditions. For Kolb, as for Chickering and Perry, ideas are not fixed and immutable elements of thought but are formed and reformed through experience and through dialogue about that experience. This implies, quite simply, that all learning is relearning and rethinking experiences. When we teach, we have a tendency to think that students come into any specific course knowing nothing about the subject at hand, or, otherwise, knowing only as much as the prerequisite courses have presented. That is not the case. Students come into their courses with definite theories about each subject.

These theories may be inaccurate and crude but the people we teach have used these beliefs when situations called for that use. And so, the educator's role is not only to present new ideas but to help students to modify or discard old ones. That can best be done by bringing out the learner's beliefs, examining and testing them, and then integrating the new, more refined ideas into the person's belief systems. Thus, Kolb agrees with Perry and Piaget that learning is best conceived as a process and not in terms of outcome.

Following Kolb's reasoning, one could easily ignore the importance of outcome or of product in learning. While it is true that an individual is always in a process where learning is concerned, it is equally true that at any given point that individual acts and reasons with the product of learning up to that point. It seems to me that when we teach and when we test in the college classroom, we must do so with a recognition of the importance of both process and outcome. Course objectives must be stated with both in mind and plans for evaluation of student learning must include each of these aspects.

### Learning Styles

Educators often wonder whether the process of learning and of moving through stages in the learning cycle is the same for everyone. Most college faculty have become aware that students differ from each other in the ways that they learn but that small amount of information can only be frightening if it means that we should be meeting the needs of a variety of individual learning styles within the same class. If there is individuality in learning styles, then surely the use of any one instructional strategy, including experiential learning, would meet the needs only of students with learning styles which best match that strategy.

In recent years, Kolb has been attempting to describe the concept of learning styles as they relate to individuality in learning. He

has found that as a result of heredity, particular past life experience, and the demands of the present environment, most students develop learning styles that emphasize some learning abilities over others. He has described the characteristics of four basic learning styles:

1. The convergent learning style relies primarily on the dominant learning abilities of abstract conceptualization and active experimentation. The greatest strength of this approach lies in problem solving, decision making, and the practical application of ideas. In this style, knowledge is organized in such a way that through hypothetical-deductive reasoning, it can be focused on specific problems. Convergent people are controlled in their expression of emotion. They prefer dealing with technical tasks and problems rather than social and interpersonal issues.
2. The divergent learning style emphasizes concrete experience and reflective observation. The greatest strength of this orientation lies in imaginative ability and the awareness of meaning and values. The primary adaptive ability of divergence is to view concrete situations from many perspectives and to organize many relationships into a meaningful "gestalt." The emphasis in this orientation is on adaptation by observation rather than action. Those oriented toward divergence are interested in people and tend to be imaginative and feeling-oriented.
3. In the assimilation learning style, the dominant learning abilities are abstract conceptualization

and reflective observation. The greatest strength of this orientation lies in inductive reasoning and the ability to create theoretical models, in assimilating disparate observations into an integrated explanation. As in convergence, this orientation is less focused on people and more concerned with ideas and abstract concepts. Ideas, however, are judged less in this orientation by their practical value....When theory or plans do not fit the facts, these people will more likely disregard or re-examine the facts.

4. The greatest strength of the accommodative learning style lies in doing things, in carrying out plans and tasks and getting involved in new experiences. This style is called accommodation because it is best suited for those situations where one must adapt oneself to changing immediate circumstances. In situations where the theory of plans do not fit the facts, those with an accommodative style will most likely discard the plan or theory. People with an accommodative orientation tend to solve problems in an intuitive trial-and-error manner, relying heavily on other people for information rather than on their own analytic ability.<sup>15</sup>

An individual's learning style is partly a result of that person's personality, but is also greatly influenced by educational experiences beginning at the high school, or possibly at the junior high level, and continuing through the undergraduate years. In the minds of teachers, particular subject areas seem to call for particular instructional

strategies. Teachers often choose to study and teach in particular areas because of their own learning styles, and then present that subject matter in a manner in keeping with the way they best learn. Students become interested in that subject area, in part, because the instructional strategy seems to match their learning styles. Selection of an undergraduate major, and the selection of courses for an entire undergraduate education, are often strongly influenced by the student's learning style. In turn, these selections strongly influence that student's learning style. According to Kolb, undergraduate business majors tend to have accommodative learning styles; engineers tend to be convergent learners; history, English, political science, and psychology majors tend to have divergent learning styles; and mathematics, chemistry, economics, and sociology majors tend to have assimilative learning styles. And when these students move into their careers, they tend to have jobs within that career which are again closely related to their learning styles.

If all of this is true, and people are choosing to teach and to learn given content in part because of their own learning styles, then everyone must be quite happy and perhaps we shouldn't meddle with changing anything. But what is an optimal learning environment? One that satisfies or one that stimulates. There is a problem in allowing specialization to be shaped in early high school and beyond, by teaching styles which are a result of the teacher's chosen way of learning, rather than by an understanding of how learning occurs in the student. If students are selecting areas of study and choosing careers, in part, because of the match between teaching styles and their chosen learning styles, then perhaps high school and college teachers should be using a variety of teaching styles. This would encourage students with different learning styles to consider studying that content area and would also help students who have selected that subject area because the instruction is in keeping with their learning style, to



learn to develop other ways of learning, opening new areas of study for them.

Perhaps what is needed is an integrative approach to education, at both the high school and college levels, as opposed to the specialized approach which is very common. In most academic disciplines the content objectives are explicit. These objectives state the material which is to be covered, along with the concepts which must be understood. All of that is specialized to a given area of knowledge. However, in an integrative approach instructors recognize the importance of specialized knowledge but add to that objectives concerning the growth and creativity of students and also objectives concerning helping the students understand the relationship between that area of knowledge and other content areas. The goal is not only to develop the weak areas in the students' individual learning styles so that they will be able to learn from a variety of learning perspectives. The goal is also to help students recognize the relationships between the content of various disciplines, by promoting an inter-disciplinary approach to learning.

Educators calling for an integrative approach have done so because they claim that it is good education. Educators involved in evaluating training for given professions are beginning to recognize that the integrative approach may even be more practical education. Schein, for example, claims that the professions are so specialized that they have become unresponsive to certain classes of social problems that require an inter-disciplinary or interprofessional point of view. The growing base of basic and applied knowledge in many professions has become so convergent that it is difficult for innovations to occur. Professionals have become unresponsive to the needs of many users of the service because they are working for the organization that employs them rather than for the clients. Professional education often provides neither training nor experience in how to work as a member of a team, how to help clients identify needs, and how to col-

laborate with other professionals on complex projects.<sup>16</sup> It is very likely that these problems are a result of a too specialized education and this too specialized education is, in turn, a result of overspecialization in learning styles.

Individuals speaking for general education are often assumed to be opposed to specialization, but that is not necessarily the case. Modern people are specialists and specialization requires that they have knowledge of a particular discipline or profession. However, within their specialized areas, specialists must see their work as related to all of life and their knowledge as related to actions and values.

### The Need for Experiential Learning

How can experiential learning provide some of the integration which is needed. When you consider the learning styles outlined by Kolb, wouldn't it appear likely that experiential learning would be most helpful to convergent and accommodative learners and not particularly beneficial for divergent and assimilative learners? That would only be true when the experiential learning situation has been organized without careful thought for how it can best fulfill the needs of each learning style. And that was the problem with the earlier attempts at experiential learning. The experience alone, or the experience along with some dialogue concerning "how you felt during that experience" did not provide for an adequate learning situation.

I would like to suggest that every undergraduate needs to be involved in experiential learning situations of different types. Cross-cultural, cross-disciplinary, and professional experiences are all vitally important to a student's education but each of these situations must be structured to provide an integrative approach to learning. Dialogue concerning the experience must be carefully structured so that students who are weak in any given learning style will learn to develop the skills of that style by conversa-

going dialogue concerning the experience is fully as important as the experience itself.

Should any student be allowed to select courses in such a way that experiential learning would never be a part of his or her college education? We would likely agree that accommodators who are delighted with the activities of experiential learning which for them is the "real world," need the theoretical orientation provided in the college classroom. But shouldn't assimilative learners, who are excellent at theorizing and quite happy doing so, be allowed the freedom of developing those theoretical strengths without being forced into a situation in which they must be actively involved with people and with practical matters? Isn't

tion with students who are using that style to a great degree. That is why, although we recognize the importance of internships within a chosen field, we must also recognize the danger that the dialogue concerning those internships is very likely to be one-dimensional unless the instructor makes every effort to have the students confront all of the issues involved. And that is also why we need to make every attempt to provide experiential learning situations which are cross-disciplinary or at least which allow for dialogue among students in different disciplines.

Convergent learners, with their strengths in problem solving, decision making, and the practical application of ideas, need to

## **Responsible disciples of Jesus Christ may never view education as only learning to reason.**

contemplation, itself, an action, an experience? Or course it is. But those who intend to live their entire professional lives in contemplation and in theoretical research, must have as part of their educational experience, an understanding of the relationship between theory and practice and an awareness of how practice developed from theory affects the lives of people. Responsible disciples of Jesus Christ may never view education as only learning to reason.

How can college faculty, specialized as they are in their own professions and in their own learning styles, arrange for the structured dialogue necessary for worthwhile experiential learning? Academic deans, the individuals primarily responsible for college instruction, should arrange for seminars and workshops for faculty who are using experiential learning as an instructional

discuss with faculty and with other students the meaning and values of the experience. Divergent learners, with their imaginative abilities, awareness of meanings and values, and ability to view concrete situations from many perspectives, need the pressure and encouragement of other learners to face the outcomes of their solutions. Assimilators, with their ability to do inductive reasoning and to create theoretical models need to focus more on people and to work out and to discuss the practical value of their ideas. Accommodators, who are very good at carrying out plans and tasks and who will actively welcome the chance to get personally involved in the experience, need to be encouraged by other learners to relate their experiences to theory and to make plans for action according to theory rather than in a trial-and-error manner. In this way, the on-

strategy. This would include all faculty who are involved in off-campus programs, those involved in professional internships, and those using case-studies, action research projects, simulations, or any type of discovery learning. In fact, any faculty member who claims to be using class discussion or small group discussion of any type needs to have an understanding of learning styles and of how learning is related to instruction. And after that they need practice in structuring discussion so that it will be beneficial for all types of learners. (Perhaps faculty members who do not make such claims need that information and practice even more!)

I do not mean to suggest that the experiential learning environment is the only situation which meets the needs of all four learning styles. A carefully structured, enthusiastically presented lecture will require students to reason and to think about applying that reflection to concrete situations. It may have an affective orientation as well for students who are experiencing that teacher as a model. And when carefully structured class dialogue is part of that experience, students have the opportunity to test their ideas in public. Experiential learning, however, is the only educational experience in which the students must be actively involved with people and projects outside of the college environment and then must reflect together concerning the meaning and outcome of their actions.

Most judgments which we make throughout our lives, whether they are professional or personal, must be based on more than correct factual information about any given situation. Abercrombie, in *Anatomy of Judgment*, describes her concern for the type of diagnoses medical students were making when they based their judgments only on textbook information and class discussion.<sup>17</sup> She found that students who had been involved in many direct experiences in which they learned to recognize and describe their perceptions and the reasons for those perceptions in areas of life unrelated to medicine became much more competent

diagnosticians than students who had not had such experiences with learning. Our students will be called on to make judgments and those judgments need to be based on accurate information. But those judgments must also be wise and courageous, based on an acceptance of the past, but acknowledging responsibility for the future. Experiential learning, at its best, can provide the linkage between theory and practice necessary for responsible decision-making.

#### Endnotes

<sup>1</sup>*Handbook on Undergraduate Curriculum*, The Carnegie Foundation for the Advancement of Teaching, Jossey-Bass, Inc., 1978.

<sup>2</sup>L. Kohlberg, "Stage and Sequence: The Cognitive and Developmental Approach to Socialization," D.A. Goslin, (Ed.), *Handbook of Socialization Theory and Research*, Chicago: Rand McNally, 1969.

<sup>3</sup>W.G. Perry, *Forms of Intellectual and Ethical Development in the College Years*, New York: Holt, Rinehart, and Winston, 1970.

<sup>4</sup>*Involvement in Learning: Realizing the Potential of American Higher Education*, Final Report of the Study Group on the Conditions of Excellence in American Higher Education, Sponsored by the National Institute of Education, October 1984.

<sup>5</sup>*Involvement in Learning*, 1984.

<sup>6</sup>A. Chickering, *Education and Identity*, San Francisco: Jossey-Bass, 1969.

<sup>7</sup>A. Chickering, "The Life Cycle," A. Chickering (Ed.), *The Modern American College*, San Francisco: Jossey-Bass, 1981, p. 34.

<sup>8</sup>Chickering, 1969, p. 148.

<sup>9</sup>G.G. Stronks, "Stages of Intellectual Development: A Scheme," *Pro Rege*, Vol. XI, No. 4, 1983.

<sup>10</sup>W.G. Perry, "Sharing in the Costs of Growth and Comments on Chapters 2, 3, 5, and 6," C.A. Parker (Ed.), *Encouraging Development in College Students*, Minneapolis: University of Minnesota, 1978.

<sup>11</sup>L. Vygotsky, *Thought and Learning*, Cambridge Press: Mass. Institute of Technology, 1962.

<sup>12</sup>K. Lewin, *Field Theory in Social Sciences*, New York: Harper and Row, 1951.

<sup>13</sup>D. Kolb, *Experiential Learning: Experience as the Source of Learning and Development*, New Jersey: Prentice-Hall, Inc., 1984, p. 9.

<sup>14</sup>Kolb, p. 21.

<sup>15</sup>Kolb, pp. 78-79.

<sup>16</sup>E. Schein, *Professional Education: Some New Directions*, The Carnegie Foundation for the Advancement of Teaching, 1972.

<sup>17</sup>M. Abercrombie, *The Anatomy of Judgment*, New York: Basic Books, 1960.