

Refereed Articles

The Effectiveness Of Andragogical Instruction As Compared With Traditional Instruction In Philosophy Courses

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Abstract

Andragogy has been of conceptual, theoretical, and practical importance in the field of adult education for more than 25 years. Though debate regarding the status and role of andragogy fills the pages of professional journals, a dearth of empirical investigations document the superiority or inferiority of andragogy as a methodology. The present research is set within evening Introduction to Philosophy courses (PHI 201) in a private liberal arts college. By means of a pretest-posttest-control-group design, the researcher investigated the effectiveness of andragogy as compared with traditional instruction. Instructional effectiveness was assessed by course achievement (controlling for cumulative grade point average and pretest achievement scores) and student attitudes as measured by the course evaluation instrument. The findings indicate no statistically significant difference ($p = .05$) between the experimental ($n = 19$) and control ($n = 21$) groups on achievement as measured by the composite posttest made up of objective and essay sections and no statistically significant difference ($p = .05$) between the attitudes of the students toward the method of instruction.

Introduction

Enrollment patterns in American colleges and universities call for serious consideration of adult teaching methodologies in those contexts. U. S. Department of Education statistics indicate that in the 1990s 57% of all college students are 22 years of age or older, 42% of all college

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students are 25 years of age or older, and 68% of all part-time students are 25 years of age or older. The median age of college students in the 1990s is over 34 (Aslanian, 1993). "Inevitably, nontraditional adult degree programs, pioneered by private liberal arts colleges, will proliferate, and postsecondary institutions must seek other ways to accommodate older students—not so much out of altruism as out of economic necessity" (Rachal, 1989, p. 5).

Andragogy, a well-worn term in the lexicon of adult education, is one proposal for an effective and learner-appropriate methodology for the growing non-traditional population in the college classroom. Malcolm Knowles, the chief proponent of andragogy, describes it as a learner-centered model of assumptions (Knowles, 1973, 1980, 1984) contrasted with teacher-directed learning (traditional schooling). Despite earlier American uses of the term andragogy (Anderson & Lindeman, 1927a, 1927b), Knowles' (1980, 1984) concept of andragogy is most recognized in contemporary adult education. Over time Knowles (1993) has allowed his view the flexibility to emerge from conceiving of andragogy as a dichotomous contrast with traditional schooling (pedagogy) to viewing it as a set of educational assumptions existing on a continuum. Andragogy, in theory and practice, is based on the differences in learning in adulthood as opposed to childhood. Knowles' (1993) well-rehearsed assumptions distinguish important educational qualities in adult learners in four, or sometimes five, areas: Adult learners have (a) an increasingly self-directed concept of themselves, (b) a reservoir of experience as a resource in learning, (c) a readiness to learn due to developmental life-tasks, (d) a problem-centered orientation in learning, and (e) intrinsic incentives for educational development.

Debate about the status of andragogy as a theory, a set of assumptions, a definition of adult education, or a philosophy has continued since Knowles' initial development of the term. Particularly in the 1980s pages of criticisms, clarifications, and promotions of andragogy mounted. These debates have been chronicled by those offering even further clarifications of the concept of andragogy (Davenport, 1987; Davenport & Davenport, 1985). In the midst of such debate, some believe that the status of andragogy as a theory would be resolved by empirical research (Davenport & Davenport, 1985) while others question whether it was even falsifiable (Cross, 1981). Still others analyze andragogy in light of authority and social structures (Pratt, 1993). With postmodern reactions to a positivistic view of research in the 1990s it is true, nevertheless, that respon-

sible treatments of andragogy “should include the growing empirical base” (Davenport & Davenport, 1985, p. 158).

Experimental Research on the Effectiveness of Andragogy

Experimental research related to learner achievement has produced mixed studies, though more results show no statistical significance in comparative approaches. Beder and Carrea (1988), Madriz (1987), McCann (1988), Ogles (1990), and Saxe (1986) generally support the effectiveness of andragogical instruction as opposed to traditional instruction. Anaemena (1985), Barta (1989) on achievement, Black (1989), Familoni (1991), Farrar (1990), Langston (1989), Rosenblum and Darkenwald (1983), and Stevens (1985), have found no statistically significant differences between the instructional approaches measured. White (1988), Barta (1989) on formatting and attrition, and Clark (1990) generally support the effectiveness of traditional instruction as opposed to andragogical instruction.

There are, however, limitations and weaknesses in the foregoing experimental studies of andragogy. Three criticisms are relevant to the present research. First, since andragogy is more than any one isolated technique (Knowles, 1980; Caughan, 1989), any generalizations made from isolated technique studies to other contexts in which a more robust andragogy is used are unwarranted. For example, in Anaemena's (1985) study programmed instruction sheets in three lessons were the extent to which andragogy was employed. Not only is this an isolated technique, but it is a rather limited amount of instruction which is more closely associated with the behaviorist's theoretical framework than the humanist's, upon which andragogy is based. Likewise, in Familoni's (1991) work collaboration alone is simply an insufficient representation of andragogy. In the same way White (1988) merely compares small group discussion and lecture in the context of a mandatory recertification program for pesticide licensure. Again, comparing an andragogical technique with a more traditional technique is inadequate as an evaluation of the efficacy of andragogy.

Second, since many or most learners are only familiar with traditional schooling, in experimental studies the andragogical method should comprise a large portion of the educational time to properly acclimate the learners to the andragogical approach. Langston (1989), for example, studied one project as self-directed or teacher directed within the context of two political science courses. Since the self-direction variable did not cover the instruction of the entire course, any generalization about

andragogy is duly limited. Similarly, in a mathematics course Black (1989) limited the use of learning contracts to having students decide a minimum grade and agree to participate in interviews with a teacher about progress.

Third, studies which have involved college students in for-credit academic courses are more directly related to the present study, more pertinent to the larger concern of adult learners in higher education, and more helpful in aiding practitioners in instructional effectiveness in collegiate settings. Stevens' (1985) study, pertaining to dental hygiene skills, Barta's (1989) study of keyboarding instruction, and even Clark's (1990) study of clinical nursing skills are sufficiently unrelated in their contexts or content to severely weaken their predictive value of outcomes in a college philosophy course or, more generally, a liberal arts course.

These difficulties pinpoint a critical problem in researching the effectiveness of andragogy. Experimentally, in an effort to control variables, the researcher has to focus, almost of necessity, on instructional *techniques*. As noted earlier, however, if one compares an andragogical technique with a traditional technique *in the same class*, the result is something less than a robust andragogical instructional atmosphere. Andragogy includes a variety of techniques to be sure, but a sound conclusion about the efficacy of andragogy cannot be reached merely by comparing one technique with another, especially when there has been no uniform presentation of andragogy as an instructional context (Knowles, 1980). Seemingly, the best way to avoid these problems is to instruct an entire course andragogically in comparison to teaching an entire course traditionally. For this reason the present research compared an andragogically-instructed class with a more traditionally-instructed class.

It may also be concluded that there is a dearth of research which has studied andragogical instruction in the full context of a college course, especially in liberal arts courses. Since there is a large and growing population of non-traditional students in academic settings, more research directed to this context is certainly warranted. Finally, no researcher in the scope of the foregoing review has applied andragogical instruction to a liberal arts course such as philosophy. Therefore, the crucial elements of the present research are not well represented in previous studies.

Apples and Oranges in Andragogical Research

One unique difficulty in studying the effectiveness of andragogy is comparing achievement in the course content. Two classes which are teacher-directed could easily cover exactly the same content and, there-

fore, the measurement instrument could be exactly the same. On the other hand, an andragogical class, by definition, involves allowing the learners to determine, at least in part, the content. The learners must choose, at least in some measure, their own objectives. The problem thus arises: How can one class in which each student determines his or her own objectives be fairly compared against another class in which the teacher determines the content? This dilemma of “comparing apples with oranges” is, no doubt, one reason for the paucity of comparative studies. The compromise reached in the present study was to specify a list of objectives applying to all the learners from which the andragogical learners may pursue self-directed educational objectives as specified in their learning contract. One may argue that this decreases the purity of the andragogical approach, but such a list of objectives does allow for a relatively fair basis for evaluation. Hence, the present study was designed to compare the effectiveness of andragogical and traditional instructional approaches in introductory philosophy courses. Specifically, the present study compared the content achievement (posttest) and affective assessment (course evaluation) of a class taught using traditional techniques with a class taught with andragogical techniques.

Methodology

Setting and Participants

The setting of the present study was two Introduction to Philosophy courses (PHI 201) at a private liberal arts college. Having been the instructor of the course prior to the study, the researcher taught one course, in one term, with traditional teaching methodology and one course, in the following term, andragogically. Each course met ten weeks on Monday evenings. Students participating in the present study were enrolled in Introduction to Philosophy (PHI 201) courses during the fall and winter trimesters. The students who participated in the present study did so through informed consent; because of the voluntary non-participation of four students and the missing pretest data of two students because of absences, there were 40 final participants in the study.

Instruments

A pretest, objective in format and based on the content of the course (PHI 201), was used to establish the learner’s prior familiarity with certain introductory concepts in philosophy. The evaluation of achievement at the end of the course was based on posttests forming two parts of the

final examination drawn from the objectives of the course. One posttest included 30 items, 25 of them multiple choice and five true-false. The other posttest was a group of three essay questions. The content validity of the objective and essay posttests rested primarily on their relationship to the course objectives. To ensure the content and face validity of the testing instruments, a panel of three experts with teaching experience in similar courses and graduate degrees in philosophy was consulted. The panel of experts also graded the essay posttests in order to guard against instructor bias. A detailed outline of the course content pertaining to the essay questions was provided for each panelist.

The instrument used to collect the affective data was the college's course evaluation. The course evaluation instrument was analyzed in order to provide evidence of its reliability and validity for the purposes of this research. The sample was taken from a group of courses which represent the college's academic classes. A Cronbach alpha analysis was performed on the data as the indicator of internal consistency reliability. The results confirm the reliability (.9665) of the instrument as it pertains to the present study. A factor analysis using a saliency criterion of 0.6 confirmed the validity of the instrument, yielding three factors relevant to the affective dimension of this research.

Treatment

Andragogical Instructional Techniques: While the course objectives were determined by the instructor as denoted in the course syllabus, projects, presentations, and evaluations (of accomplishing the learning objectives) were determined mutually by the students and the instructor as denoted in each student's learning contract. In the learning contract the students specified learning objectives, indicating the resources to be used in meeting those objectives, defining the evidence to demonstrate meeting the objective, and formulating criteria for evaluation of that evidence, including the exams. The teaching format involved many student and group presentations, lectures by the instructor, assigned readings, and opportunities for question and answer and discussion sessions.

Traditional Instructional Techniques. The content and objectives of the course was determined solely by the instructor as denoted in the course syllabus. The classroom teaching techniques involved primarily instructor dominated class-time via lectures and limited opportunities for question and answer periods following the lectures, as well as discussions at appropriate times. The students had no part in planning the class-

room presentation of the material or objectives for the course. The specific evaluation of each student involved attendance, objective tests, essay tests, and a project, such as a paper, or a presentation of a philosophical topic or issue, or participation in a class debate.

Results

Descriptive Data

Data were collected for the covariates of GPA and pretest achievement scores and the dependent variables of objective posttest, essay posttest, and the composite posttest. The composite posttest was calculated from the average of the objective and essay posttests. The composite posttest was scaled at 100 points. The fall trimester class served as the control group and was treated with traditional teaching methodology. Of the 26 students on the final roster, 21 students participated in the study. Of the 21 participants, 18 were female, making up 86% of the class, and three were male, making up 14% of the class. The mean age of the students was 25 with a standard deviation of 6.52 years. The winter trimester class served as the experimental group and was treated with andragogical teaching methodology. Of the 20 students on the final roster, 19 students participated in the study. Of the 19 participants involved in the study, nine were male, making up 47% of the class and 10 were female, making up 53% of the students. The mean age of the students was 27 with a standard deviation of 6.87 years. The cumulative GPA for the traditional group was slightly higher (2.93) than that of the andragogical group (2.89), while the pretest achievement score for the andragogical group (7.00) was higher than that of the traditional group (5.67). Though the traditional group scored higher on the objective posttest (23.57) than did the andragogical group (21.63), the essay posttest scores were virtually identical. On the composite posttest the traditional group scored higher (70.10) than the andragogical group (66.58) by a small margin.

Affective outcomes of the course were measured via student evaluations of the classes on a scale of 26 continuous items. The affective data for each course were analyzed as a composite mean and composite standard deviation. The fall term (traditional group) had a mean of 4.319 and standard deviation of .325 based on 21 students' completion of the evaluation instrument. The winter term (andragogical group) had a mean of 4.331 and a standard deviation of .221 based on 17 students' completion of the evaluation instrument.

Tests of Hypotheses

Two research hypotheses were tested: one regarding achievement, the second regarding attitude toward the course. These were tested with the statistical techniques of the analysis of covariance (ANCOVA) for achievement and the t test for attitude. For the purpose of assuring the appropriateness of using the analysis of covariance, a homogeneity of regression test was performed. The results suggested that performance of the participants was relatively similar across levels of the independent variable ($F = .62$; $df = 2, 34$; $p = .54$), hence justifying use of analysis of covariance. The F ratio for the achievement hypothesis was .924 ($df = 1, 36$; $p = .343$). The effect size (.0194) was very small, with less than 2% of the variance explained. Based on these data, the researcher found no statistically significant difference in achievement between the andragogical group and the traditional group while holding constant pretest scores and GPA. The t ratio for the attitude hypothesis was -.1333 with 1 and 36 degrees of freedom; thus, this hypothesis was not statistically significant. Based on these data the researcher determined that there were no statistically significant differences in attitudes of the andragogical group and the traditional group.

Discussion

The findings of the present study indicated no statistically significant difference in achievement or attitude between the methodologies. Therefore, the andragogical methodology used proved to be neither more nor less effective than the traditional methodology in the present study. Hence, the decision to use andragogical methods is not unequivocally warranted if one considers the experimental research (see the previous empirical literature review). It might be added, too, that when research findings indicate the superiority of andragogy, the effect sizes and margins of difference are small. Therefore, any boasts about the superiority of andragogy in the areas of achievement or even learner satisfaction are clearly not warranted from the consensus of experimental research.

However, this is not to say there are no convincing reasons to employ andragogical methodology. Andragogy will, no doubt, survive empirical examinations of its effectiveness by virtue of the fact that its primary assumption of self-direction is a normative judgment and, therefore, cannot be empirically falsified (Brookfield, 1986). The other assumptions rest on common sense (i.e., experience as a resource), strong anecdotal

evidence (Knowles, 1984, 1993), and psychological frameworks (Knowles, 1973) and, thus, will not be defeated easily by statistical significance tests. Perhaps, then, the justification of andragogy as a methodology rests on the ability of future researchers and practitioners to formulate connections between the course content, the maturity of the learners, and the desired outcomes of the learning experience. After such considerations appropriate applications of andragogy, as well as traditional techniques, can be made to the specific learning situation.

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