

DOCUMENT RESUME

ED 363 592

SP 034 815

AUTHOR Skipper, Charles E.  
 TITLE Instructional Preferences of Preservice Teachers at Three Different Levels of Academic Aptitude.  
 PUB DATE 93  
 NOTE 17p.; Paper presented at the Annual Meeting of the Mid-Western Educational Research Association (Chicago, IL, October 15, 1993).  
 PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143)  
 EDRS PRICE MF01/PC01 Plus Postage.  
 DESCRIPTORS Academic Aptitude; Affective Behavior; \*College Instruction; Discriminant Analysis; \*Education Majors; Elementary Secondary Education; Higher Education; \*Humanistic Education; \*Preservice Teacher Education; \*Student Attitudes; Teaching Methods; Teaching Styles; Undergraduate Students  
 IDENTIFIERS \*Preservice Teachers

ABSTRACT

In this study of preservice teachers' views about college classroom teaching and learning, 161 students in an undergraduate teacher preparation program were divided into 3 groups (academically talented, high average, and average). Students were asked to express their attitudes toward college instructors' teaching skills, course organization, examining and grading practices, student involvement in learning, and preference for specific instructional methods. Through multiple discriminate function analysis, one significant discriminate function that would differentiate among the three groups was identified. The function was described as preference for humanistic approaches to teaching and learning where the goals are to develop independence and self-direction in students, increase creativity, develop personal meanings, and be evaluated as an individual. This indicates that preservice teachers with varying academic ability levels are different in their preference for the objectives and teaching methods of humanistic education, and this should be recognized in development of instructional strategies. (Contains 19 references.) (JDD)

\*\*\*\*\*  
 \* Reproductions supplied by EDRS are the best that can be made \*  
 \* from the original document. \*  
 \*\*\*\*\*

**Instructional Preferences of Preservice Teachers  
at Three Different Levels of Academic Aptitude**

**Charles E. Skipper  
Department of Educational Leadership  
Miami University  
Oxford, OH 45056**

**Presented at the Annual Meeting of the  
Mid-Western Educational Research Association**

**1993**

**Chicago, Illinois**

U.S. DEPARTMENT OF EDUCATION  
Office of Educational Research and Improvement  
EDUCATIONAL RESOURCES INFORMATION  
CENTER (ERIC)

- This document has been reproduced as received from the person or organization originating it.
- Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

PERMISSION TO REPRODUCE THIS  
MATERIAL HAS BEEN GRANTED BY

*Charles E. Skipper*

TO THE EDUCATIONAL RESOURCES  
INFORMATION CENTER (ERIC)

Preservice teachers bring a wide range of cognitive abilities and affective characteristics to teacher preparation courses and these differences represent a challenge to college instructors, not only to help students understand and apply facts and principles, but also to help them develop a positive attitude toward learning. The task of college instructors as a role model cannot be underestimated because they are in a unique position to demonstrate effective teaching that satisfies the intellectual and motivational needs of future teachers at a time when preservice teachers are searching for ideas and examples of effective teaching.

Do preservice teachers with different levels of academic aptitude hold unique views about college classroom teaching and learning? It is the purpose of this research to attempt to answer this question by comparing three groups of preservice teachers who differ on their ACT composite scores on their attitudes toward college instructors' teaching skills, course organization, examining and grading practices, student involvement in learning, and preference for specific instructional methods. Using national norms, three ability groups were identified and compared. They were an Academically Talented Group with a mean ACT equal to the 97th percentile, a High Average Group with a mean ACT equal to the 82nd percentile, and the third group, the Average Ability Group, with a mean ACT at the 53rd percentile.

The importance of the affective domain in classroom learning has been demonstrated by Bloom (1976) in his model of school learning, where he reasoned that affect related to school learning was determined by perceptions learners have about their achievement and these feelings have a significant role in determining the effort and interest learners have to master specific learning tasks. His model used interests, attitudes, and self

view of learners in teaching-learning situations where he estimated these affective characteristics may account for 20 to 25% of variance in achievement.

Using results from research on gifted/talented college students (Kerr and Colangelo, 1988) (Tomkinson-Keasey, 1990) and college teaching (McKeachie, 1990) this study focused on an affective aspect of preservice teachers learning in college classrooms. In this study, preference for instructional methods and attitudes toward course activities was used as operational definitions of learning styles. There are practical and empirical reasons for this decision. Instructional methods and course goals are easily understood by students because of their experience with them and Curry (1990) found a bewildering array of definitions of learning styles and instruments weak in both reliability and validity. In contrast there have been experimental studies on various instructional methods and their cognitive and affective outcomes. An early experiment on the teaching of college psychology by Guetzkow, Kelly and McKeachie (1954) used a large common lecture and smaller groups were taught by recitation, discussion, and tutorial-independent study methods. There were no practical differences on a final examination of both fact and application items for all three methods, but the discussion group had statistically more favorable attitudes toward psychology than the other two groups. Only students in the recitation sections had a significantly more favorable gain in preference for this method while the tutorial-independent method was least preferred. At the end of the experiment, instructors who had taught sections using each method rated recitation and discussion equal in preference while preference for tutorial-independent study had dropped appreciably.

Wispe (1951) compared the effects of two kinds of instructor behaviors on student achievement and attitudes. He selected instructors who were rated as naturally permissive or directive and compared their sections of the Harvard course in "Social Relations." He found no difference in final examination scores between students taught by different methods, but students preferred the directive method and the poorer students gained more in directive classes.

James (1962) attempted to enhance student achievement in Air Force trainees by comparing student preference for reading or lecture modes. He found two significant interactions--reading produced higher achievement and the reading preference produced greater achievement for higher ability students. But he also found that the highest achievement was earned by trainees who had no instructional preference. The limitations of the study are that no objective measure of preference for instruction was used, the "lecture" was listening to a tape recording, and no attitude measures toward instruction were used.

Pascal (1971) examined the educational outcomes of matching undergraduate students' instructional preferences for lecture, lecture and discussion, and independent study in an undergraduate psychology course titled "Socialization." A minimum of fifty students were assigned to each of the three instructional options. About one half of each group was randomly assigned to the method which they listed as their first option; the other half were randomly assigned to their second or third choice. Students who received their preferred learning method did not earn higher grades or rate the course as more valuable compared to students who did not learn under their first preference. However, students who learned under their preferred method expressed a more positive attitude toward psychology and

students who preferred lecture and lecture and discussion performed better on knowledge and comprehension type final examination questions.

Students in the lecture-discussion and independent study options did not perform better on the application part of the final examination; however, independent reading students scored higher than the other two groups on the evaluation of a novel article. Students assigned to the non-preferred independent study option rated the course more difficult and anxiety provoking than students who preferred this option. Students in the study favored having instructional options with 93.5% positive and 6.5% indifferent while 91.6% thought options provided them with freedom and individualization. Pascal suggested that greater differences were not found due to the preference option because the professor of the lecture was well-liked. Students commented that her lectures caused some to change their minds as to which option they preferred. He concluded students were in favor of having instructional options and they sometimes made "bad" choices, but the use of options must depend on course goals and the relative value of these goals. He concluded that the conflict with offering options concerns which goals are selected and which goals are sacrificed.

Pascal (1973) reported relationships between instructional preferences and specific personal characteristics. Students who chose independent study had a greater need for autonomy, flexibility, and abstract thinking and had greater tolerance for ambiguity than students who preferred lectures. When giving reasons for their choices, 47% who chose independent study did so because it gave them more opportunity to explore personal, social, and academic goals while those who chose lecture wanted the structure it provided (18%) and it required less reading (18%).

Students selecting the lecture-discussion method gave the opportunity to interact with instructors and peers (92%) as their main reason.

Smith (1976) researched teaching method preference by developing a 54-item instrument which became the basis for the Renzuli-Smith Learning Styles Inventory that measured preference for nine different instructional strategies: (1) projects, (2) drill and recitation, (3) peer teaching, (4) discussion, (5) teaching games, (6) independent study, (7) programmed instruction, (8) lecture, and (9) simulation. She then used the instrument in an experiment with young adolescents who were matched in instructional preference for lecture, discussion and simulation. She found that the teaching method preference correlated .38 with achievement and .23 with motivation. Smith concluded students differ in their preference for teaching modalities, and that teaching method matching can significantly enhance educational outcomes.

Steward (1981) used the Renzuli-Smith Learning Styles Inventory to analyze instructional preference of gifted/talented fourth, fifth and sixth grade students by comparing them with a general population of youth in the same grades. She found the gifted/talented group preferred independent study and discussion while the general population preferred lecture and projects. She also found a multivariant effect attributable to grade, sex, locus of control and favorite subject. Ristow and Edeburn (1983, 1984) surveyed sophomores/juniors in educational psychology classes to determine preference for various instructional methods using the Renzuli-Smith Learning Styles Inventory. In both studies, 70% gave the lecture method high preference while only 13% in 1983 and 24% in 1984 gave independent study high preference. When the data was analyzed by subgroups according to grade point average, the highest achievers (gpa 3.50-

4.00) ranked lecture highest in 1983, and second highest behind discussion in 1984 while independent study was preferred by 22% in 1983 and 44% in 1984.

Skipper (1992) compared an Academically Talented group (ACT 98%ile) and a High Average (ACT 77%ile) group on instructional preferences. He found the academically talented favored learning knowledge that could be applied and instructors who stressed important points, while the High Average group favored learning values and instructors who helped students feel relaxed. While both groups give high ratings to the goal of becoming an independent learner, neither group valued courses or instructors that required independent study.

Cohen (1981) studied the association between specific ratings of instructors behavior by students in college classes and the student level of learning in these multi-section classes. He found instructor skill correlated .50, structure (course organization), .47, and rapport .31 with student achievement. McKeachie (1990) summarized the research on college teaching methods and course outcomes and concluded while scores on objective final examinations are not effected by teaching method, affective outcomes like self-confidence, personal insight, and favorable attitudes toward the subject are related to student-centered discussion methods.

## METHOD

### Subjects

Subjects were 161 students in an undergraduate teacher preparation program at a selective admission midwestern state-assisted university. Three groups were selected according to ACT composite scores. The Academically Talented Group (N = 54) had ACT scores from 28 to 33 or the 94th to 99th percentile on national norms with a mean of 29.83 or the 97th



percentile. The High Average Group (N = 59) had ACT scores that ranged from 23 to 27 or the 71st to 91st percentile with a mean of 24.93 or the 82nd percentile. The Average Ability Group (N = 48) had ACT scores that ranged from 20 to 22 or the 53rd to the 65th percentile with a mean of 20.50 or the 53rd percentile.

### Measurement

A 47 item, five point Likert-type scale asked college students to express their attitudes and preference toward college courses. The following sub-scales and their alpha reliability coefficients were used: instructor teaching skill, .53; course organization, .59; instructor-student rapport, .56; student active participation in learning, .64; and learning by simulation, .59. Also in the scale were descriptions of five different instructors, each respected by students for their skill in lecturing, leading group discussion, using independent learning, case studies, and teaching by using a variety of instructional methods. Included in the scale were attitude statements about course goals in the cognitive and affective domains and the importance of becoming an independent learner. Statements on types of examinations and grading practices were also included.

### Results and Discussions

Instructional preferences and attitudes toward course goals and instructor behaviors were analyzed by comparing three groups of preservice teachers who differed in academic aptitude. Multiple discriminate function analysis was applied to the 47 item Likert-type scale to determine if student preference for various college classroom teaching and learning situations could make up a discriminate function that would differentiate among the three groups and if the function could classify the three groups better than chance. One significant discriminate function was identified,  $X^2$  (94, N =

160) = 146.12,  $p < .00$  which consists of seven items, all of which had a moderate correlation with the function. Three of the seven items concern course goals, two are related to teaching methods, one is related to instructor-student rapport and one to grading practices.

The function is best described as preference for humanistic (sometimes called open education) approaches to teaching and learning where the goals are to develop independence and self-direction in students, increase creativity, develop personal meanings, and be evaluated as an individual, not according to a group standard. Humanistic oriented instructors are not authority figures but are friends who guide students in their quest for both knowledge and wisdom in a nonthreatening environment (Gage and Berliner, 1988). The seven items that make up the discriminate function perfectly match the description of humanistic education stated above. The three items related to course goals indicate a preference for independent learning, developing personal values, and using ideas to produce something new and unique. Further, the discriminate function describes instructors as skillful observers of students, are friendly, use a variety of teaching methods, and evaluate student learning based on progress in relation to ability.

The discriminating power of the function becomes more evident when the means of the function for the three groups are compared. The Academically Talented mean is  $-.130$ , the High Average mean is  $.36$  and the Average Ability mean is  $1.03$ . Because the discriminate function was significant ( $p < .00$ ) the three means are significantly different with the Average Ability group holding more positive views of humanistic teaching, the High Average group holding neutral views and the Academically Talented holding negative views toward humanistic teaching. Table 1 presents the

descriptive statistics for the function. To insure that characteristics other than academic ability, such as student's year in college or teaching level interest were not influencing preference for instructional methods and educational goals, multivariate analysis of variance was used to analyze the seven item function to determine if there were any main effects or interactions between the function, year in college and teaching level interest. No significant main effects or interactions were found (Wilks lambda  $F(49) = .725, p < .74$ ). Thus, it can be concluded from this sample that academic aptitude does have a significant relationship with preference for instructional methods and course goals. The function properly classifies 79.6% of the Academically Talented, 65.5% of the High Average and 72.9% of the Average Ability Group. These percentages indicate the discriminate function is much more efficient than chance in the classification task. Table 2 presents this data.

These findings indicate preservice teachers with three academic ability levels are very different in their preference for the objectives and teaching methods of humanistic education. One implication of these findings for educational practice is that college instructors of preservice teachers should develop and use different instructional strategies which will be most effective for specific academic ability groups. Because it is highly unlikely college courses will be organized according to three ability levels, instructors in regular classes cannot satisfy the preferences of one group without making the other two groups less satisfied. But instructors can help all the students in the class understand how class members are alike and different in their instructional preferences and provide some individualization that will allow all students to meet their unique goals and preferences. Pascal's (1971) finding that 91.6% of his college subjects

thought learning options provided them with freedom and individualization is important in relation to educational practice. But he cautioned that options must depend on the course objectives and the priorities given these objectives. The evaluation of features of effective open education (humanistic) by Giaconia and Hedges (1982) clearly support Pascal's warning. They found that four features of open education, child centered teaching, diagnostic evaluation (rather than norm referenced), use of manipulative materials, and individualized instruction did produce higher self concepts, creativity, and positive attitudes toward school. Their results do not support the efficacy of any open education features in relation to improving academic achievement. Further, programs that produced large effects in the affective domain produced smaller effects in academic achievement. They concluded that superior effects in self-concept and creativity are obtained at the expense of smaller effects in academic achievement. Giaconia and Hedges suggest that diagnostic testing rather than competitive testing situations may have contributed to lower academic achievement in effective open education classes. In 100% of their effective open education classes, diagnostic testing was used which may have put these students at a disadvantage when taking standardized achievement tests that were used as academic outcome measures. While the findings of Giaconia and Hedges are appropriate for elementary and secondary students, McKeachie (1990) concluded that college students' scores on objective final examinations seem to be little affected by teaching methods but affective characteristics are enhanced by student-centered teaching methods. It is very likely that all preservice teachers used in this study can easily learn information through reading texts and articles, thereby freeing instructors to spend more class time on examining values and developing creativity and

independence. The biggest problem associated with trying to satisfy the cognitive and affective needs of these diverse groups is which values and goals are most important, not only to individual students, but also for the teaching profession. Future research and practice should focus on how college instructors can both satisfy and challenge preservice teachers with different levels of academic aptitude. It is clear from these findings that Academically Talented students do not hold the same orientation to college teaching and learning as Average Ability students. Perhaps Pascal's ideas on instructional options will help resolve the conflict.

By helping future teachers understand their unique learning preference and by providing some learning options that are unique to each group of learners, college instructors can serve as role models for future teachers who, in turn, can help their students learn by satisfying their personal learning preferences.

**Table 1**  
**Descriptive Statistics of the Discriminate Function**  
**Ability Groups**

Preference	Academical Talented		High Average		Average		r	F ratio	Sig Level
	M	SD	M	SD	M	SD			
Grades based on progress and ability	3.22	.88	3.51	1.03	3.79	.74	.25	5.08	.00
Variety of teaching methods	4.55	.66	4.31	.86	4.10	.88	-.22	4.00	.02
Best course develops independent learners	4.18	.75	3.87	.95	3.75	.78	-.22	3.66	.02
Skilled observers help learning	4.44	.53	4.36	.58	4.10	.55	-.22	5.05	.00
Learning personal values most important	2.92	.92	3.15	.93	3.43	1.00	.20	3.65	.02
Goal to produce unique ideas	3.31	.82	3.62	.72	3.68	.87	.20	3.21	.04
Learn from friendly instructors	4.24	.97	4.55	.56	4.56	.61	.20	3.21	.04

**Table 2**  
**Classification Rates**

<b>Group</b>	<b>N</b>	<b>Predicted Group Membership</b>		
		<b>Talented</b>	<b>High Average</b>	<b>Average</b>
Talented	54	79.6%	13.0%	7.4%
High Average	58	15.5%	65.5%	19.0%
Average	48	6.3%	20.8%	72.9%

## References

- American College Testing (1988). American College Testing Assessment Program: Technical Manual. Iowa City, IA. Author.
- Bloom, B. S. (1976). Human Characteristics and School Learning. New York: McGraw-Hill.
- Cohen, P. A. (1981). Student ratings of instruction and student achievement. Review of Educational Research 51(3): 281-309.
- Curry, L. (1990). A critique of the research on learning styles. Educational Leadership, 48(2), 50-56.
- Gage, N. L. and Berliner, D. C. (1988). Educational Psychology, (4th ed.). Boston: Houghton Mifflin.
- Giaconia, R. M. and Hedges, L. V. (1982). Identifying features of effective open education. Review of Educational Research (52)4: 579-602.
- Guetzkow, H., Kelly E. L. and McKeachie, W. J. (1954). An experimental comparison of recitation, discussion, and tutorial methods in college teaching. Journal of Educational Psychology, 45, 193-207.
- James, N. E. (1962). Personal preference for method as a factor in learning. Journal of Educational Psychology, 53, 43-47.
- Kerr, B. A. and Colangelo, N. (1988). The college plans of academically talented students. Journal of Counseling and Development, 67, 42-48.
- McKeachie, W. J. (1990). Research on college teaching: The historical background. Journal of Educational Psychology, 82(2): 189-200.
- Pascal, C. E. (1971). Instructional options, option preferences, and course outcomes. The Alberta Journal of Educational Research, 17, 1-11.
- Pascal, C. E. (1973). Individual differences and preferences for instructional methods. Canadian Journal of Behavioral Science, 5, 272-279.
- Ristow, R. S. and Edeburn, C. E. (1983). An inventory approach to assessing the learning styles of college students. Paper presented at the annual meeting of the Northern Rocky Mountain Educational Research Association, Jackson Hole, WY. (ERIC Document Reproduction Service No. ED 241-559).
- \_\_\_\_\_ (1984). An inventory approach to assessing the learning styles of college students: Continued exploration. Paper presented at the annual meeting of the Northern Rocky Mountain Educational Research



Association, Jackson Hole, WY. (ERIC Document Reproduction Service no. 255-535).

Skipper, C. E. (1992). Instructional preferences of academically talented preservice teachers. College Student Journal, 26(3), 274-280.

Smith, L. H. (1976). Learning styles: Measurement and educational significance. Dissertation Abstracts International, 37, 896a-897a. (University Microfilms no. 76-19,001).

Stewart, E. D. (1981). Learning styles among gifted/talented students: Instructional technique preferences. Exceptional Children, 48, 134-138.

Tomlinson-Keasey, C. (1990). Developing our intellectual resources for the 21st century: Educating the gifted. Journal of Educational Psychology, 82, 399-403.

Wispe, L. G. (1951). Evaluative sections methods in the introductory course, Journal of Educational Research, 34(1), 37-42.