DOCUMENT RESUME

ED 247 124 SE 044 720

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TITLE Science Teaching as a Career Choice of Eighth Grade Students.
PUB DATE 84
NOTE 11p.; Paper presented at the Annual Meeting of the National Association for Research in Science Teaching (58th, New Orleans, LA, April 28, 1984).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Career Choice; *Careers; Grade 8; Influences; Junior High Schools; Race; Science Careers; Science Education; *Science Instruction; *Secondary School Science; Student Characteristics; *Teaching (Occupation)
IDENTIFIERS Science Education Research

ABSTRACT

This research evaluated the desirability of science teaching as a career as rated by eighth grade students. An instrument was developed on which respondents placed their own choice of best and worst possible careers as endpoints on a 10 point scale. Forty-five additional careers, including careers in science teaching, science, and teaching of subjects other than science were then rated by the students with respect to the endpoints. Careers in teaching were generally rated low by the respondents with the exception of physical education and mathematics teaching. The respondent's race and educational aspirations were shown to have a significant relationship (0.05 level) with the ratings of some science teaching careers. Additionally, the relationship between the type of job held by the respondent's parents and the rating of science teaching was also significant in some cases. The most obvious result of this study was the verification that eighth grade students do not rate science teaching as a desirable career. Therefore, the shortage of science teachers seen will not likely diminish unless science teaching is made to be a more attractive career goal. (Author/JN)

Science Teaching as a Career Choice of Eighth Grade Students

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A paper presented at the
annual meeting of the
National Association for Research
Science Teaching

April 28, 1984
New Orleans, La.

ABSTRACT

SCIENCE TEACHING AS A CAREER
CHOICE OF EIGHTH GRADE STUDENTS

This research evaluated the desirability of science teaching as a career as rated by eighth grade students. An instrument was developed on which respondents placed their own choice of best and worst possible careers as endpoints on a 10 point scale. Forty-five additional careers including careers in science teaching, science, and teaching of subjects other than science were then rated by the students with respect to the endpoints.

Careers in teaching were generally rated low by the respondents with the exception of physical education and mathematics teaching. The respondent's race and educational aspirations were shown to have a significant relationship (0.05 level) with the ratings of some science teaching careers. Additionally, the relationship between the type of job held by the respondent's parents and the rating of science teaching was also significant in some cases.

SCIENCE TEACHING AS A CAREER CHOICE OF EIGHTH GRADE STUDENTS

Introduction

The research being reported was undertaken to determine how secondary school students perceive science teaching as a career. The research involved asking a group of 430 eighth grade students to rate the desirability of 45 careers which included secondary school science teaching.

Two major questions were investigated in this research: (1) How do students rate the desirability of science teaching as a career?; (2) What is the relationship between student ratings of science teaching as a career and selected student characteristics?

The ratings given to science teaching careers were evaluated in relation to ratings given to careers in science, careers in teaching of secondary subjects other than science and careers requiring a four year college degree, but that were neither science nor teaching. The student characteristics used in analyzing the ratings of science teaching were gender, age, race, educational aspirations, parent's level of education, and type of job held by the respondent's parents.

Methods

The instrument used in this study represents a modification of a technique developed by Kilpatrick and Cantril (1960) called the Self Anchoring Scale. They used this scale to determine how people perceive their own happiness and success in relation to the best and worst possible alternatives. Our modification of the self anchoring scale so that it could be used with groups consisted of two parts. Students were first asked to record the name of the career they would consider best if they

could do anything they wished. They were, in addition, asked to give several reasons why they felt that this career was best for them. Space was provided for the listing of three reasons. Students were then asked to record the name of the worst possible career and reasons why they felt that this career would be worst. The career suggested by the student as the best career was assigned the rating of 10, and the career suggested as worst was assigned a value of zero. Using the careers that he or she had suggested as endpoints, the student was then asked to rate 4 additional careers of this 10 point scale.

In the second part of the instrument students were asked to respond to items concerning characteristics about themselves.

The careers were placed on the instrument as members of six subgroups. The subgroups were careers in secondary school science teaching, careers in science, careers in teaching of secondary school subjects other than science, careers that require a four year college degree, but are neither science nor teaching, careers that require graduate or professional degrees, and careers requiring high school degree.

The validity of the instrument was established using an expert panel to make a final selection of the careers to included. The reliability of the instrument was established by comparing the ratings of careers contained within the instrument that were also suggested by the student as best or worst. One hundred and ninety three times a career that was suggested by the student as best was also included in the instrument. Of these, careers contained within the instrument and suggested as best were rated as a 10 in 185 cases or approximately 96% of the time. Likewise, there were 128 instances where a career suggested as worst was contained within the instrument. In 115 cases or approximately 90% of the cases, the

career was rated a zero. These figures show the self anchoring scale instrument to be a reliable instrument at least with respect to the ends of the scale.

Results

The students who served as respondents for this research were attending exploratory classes at the time of administration. Most of the students were in a section of the exploratory classes called Occupational Exploration. It was felt that these classes would provide a bias free atmosphere in relation to science teaching. All instruments were administered by one researcher and at no time was the nature of the study disclosed to the students.

The five science teaching subject areas contained within the instrument (life science teaching, earth science teaching, physical science teaching, biology teaching, and chemistry/physics teaching) had mean ratings from 2.91 to 3.38. The highest rated science teaching career, chemistry/physics teaching, was ranked thirty-second of the 45 careers, while biology teaching, the lowest rated science teaching career, was ranked fortieth. Ratings of careers in teaching of subjects other than science ranged from 2.76 to 4.61. Physical education teaching and mathematics teaching were given much higher ratings than teaching of other subjects.

The student characteristics gender, age, father's education and mother's education did not show a significant relationship, at the 0.05 level, with respect to the ratings of any of the five science teaching careers. Interestingly, none of the student characteristics show a significant relationship, at the 0.05 level, with respect to earth science teaching. All of the students who responded to this survey were taking earth science as part of the normal eighth grade curriculum.

The race of the student was shown to have a significant relationship with life science teaching and physical science teaching, but not with the other science teaching areas. The black students, comprising approximately 15% of the sample, were shown to rate science teaching higher than white students in these two cases.

The ratings of science teaching was shown to have a significant relationship with educational aspirations of the student in three of the science teaching careers. In each case, those students with the highest aspirations, i.e. "plan to attend professional or graduate school," rated science teaching higher than students with plans to pursue less formal education. One hundred and nineteen students or approximately 30% marked their choice of educational aspirations as "plan to attend professional or graduate school." Of this group, 49 students rated science teaching with a value of five or more.

There is an interesting divergence in the relationship between the type of job held by the parents and the ratings of science teaching. Students who responded that their fathers were unskilled laborers or did not work outside the home, generally, rated science teaching higher than those students whose fathers had other job types. Conversely, those students whose mothers were employed as "professionals" generally gave life science teaching higher ratings.

Conclusions

The most obvious result of this study was the verification that eighth grade students generally do not rate science teaching as a desirable career. Although the career ratings were certainly related to the students perceptions of job status, eleven of the fifteen careers requiring a high school diploma were rated above any of the science

teaching careers.

This research has not shown how to attract more students to science teaching as a career. The study has shown that the shortage of science teachers presently seen will not likely diminish unless science teaching is made to be a more attractive career goal.

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Career Groups and Rankings

Rank	Career Name	Mean	Career Groups					
			Science (a)	Science Teaching (b)	Non-Science Teaching (c)	4-year College Degree (d)	Professional or Graduate (e)	High School or Technical (f)
1	Computer Programmer	7.03				x		
2	Lawyer	6.99					x	
3	Medical Doctor	6.46					x	
4	Architect	6.13				x		
5	Veterinarian	5.84					x	
6	Engineer	5.63				x		
7	Bank Manager	5.42				x		
8	Cook	5.23						x
9	Oceanographer	5.14	x					
10	Accountant	4.81				x		
11	Chemist	4.74	x					
12	Physicist	4.73	x					
13	Police Officer	4.69						x
14	P.E. Teacher	4.61			x			
15	Electrician	4.58						x
16	Newspaper Reporter	4.48				x		
17	College Professor	4.41					x	
18	Carpenter	4.23						x
19	Sales Clerk	4.24						x
20	Geologist	4.23	x					
21	Auto Mechanic	4.22						x
22	Secretary	4.19						x
23	Mathematics Teacher	4.18			x			
24	Biologist	4.11	x					
25	Soldier or Sailor	4.07						x

Rank	Career Name	Mean	Career Groups					
			Science (a)	Science Teaching (b)	Non-Science Teaching (c)	4-year College Degree (d)	Professional or Graduate (e)	High School or Technical (f)
26	Firefighter	3.98						x
27	Nurse	3.97				x		
28	Truck Driver	3.96						x
29	Social Worker	3.86				x		
30	Farmer	3.60						x
31	Elem. School Teacher	3.45				x		
32	Chemistry/Physics Teacher	3.39		x				
33	Art Teacher	3.37			x			
34	Priest or Minister	3.311					x	
35	Life Science Teacher	3.25		x				
36	Physical Science Teacher	3.22		x				
37	Librarian	3.10				x		
38	Earth Science Teacher	3.05		x				
39	Waiter or Waitress	2.99						x
40	Biology Teacher	2.91		x				
41	Brickmason	2.89						x
42	Language Arts Teacher	2.84			x			
43	Social Studies Teacher	2.76			x			
44	Factory Worker	2.61						x
45	Plumber	2.53						x