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By-Davis, Keith G.; Banning, James H.

THE ROLE OF PERSONALITY AND ATTITUDE VARIABLES IN PROGRAMMED INSTRUCTION. FINAL REPORT.

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In this study, prediction of success in programed learning for students of different personality types was only minimally successful because the dependent variables, which were test scores and final grades, correlated r = 0.52. Ninety-seven 10th and 11th grade mathematics students were individually given the Wechsler Adult Intelligence Scale which was used to determine Personality Assessment System (PAS) variables. Before and after the experimental procedure, a programed mathematics course, semantic differential scales were administered to assess attitudes about school, learning, classes, teachers, programed instruction, programed texts, basic math course, programed math, and regular math. Factor analysis showed few relationships between attitudes and grades or attitudes and PAS variables. Multiple correlation analysis showed that attitudes were the best predictors of final grades, with attitudes toward teachers being the single most important predictor variable. In general, analyses showed the differences between the variables which contribute to the two different criteria, the lack of correlation between the criteria, and the overriding effects of attitudes. Further studies should control such variables as the level of the students in the course, as well as the nature and level of the subject matter, and should provide more adequate numbers of the personality patterns. (JF)

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HEALTH, EDUCATION, AND WELFARE

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Keith G. Davis Ph.D.
James H. Banning Ph.D.

University of Colorado

Boulder, Colorado

April 1968

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SUMMARY

This study attempted to make specific predictions about which types of students would profit most from programmed instruction. The independent variables were personality types as defined by the Personality Assessment System (PAS) and by attitudes held toward programmed instruction and education as measured by Semantic Differential.

The dependent variables were scores on the programmed instruction tests and the course grade. The dependent variables were correlated only $r = 0.52$.

Ninety-seven tenth and eleventh grade students in a Basic Mathematics course were administered the independent variables. During the spring term the Addison-Wesley series "Basic Mathematics" by Richard H. O'Malley was used in the course. The teachers found that it was necessary to intersperse lectures with the programmed instruction to break the monotony.

The data were analyzed by factor analysis, multiple correlation, and analysis of variance.

The results provide minimal support for the hypotheses. Attitudes contribute to both dependent variables, especially course grades. The complex of attitudes related to programmed instruction contribute heavily to test scores, along with general ability followed by specific abilities. Final grades are most influenced by attitudes toward teachers and school.

The Personality Assessment System personality patterns were overshadowed in their predictive ability by attitudes. However, consistent with PAS theory Role Adaptability did predict final grades. Role Adaptability did not predict test performance (or learning) as hypothesized. The externalizer-internalizer dimension of the PAS did not demonstrate predictive utility as hypothesized.

A supplementary sample of sixteen reading improvement students yielded some indications about the types of students who seek such courses and those who are most likely to benefit from them, according to PAS patterns.

Recommendations are made that further studies designed to test the utility of the Personality Assessment System (or other concepts of personality) include attitudes because of their overriding effect, and that the learning situation be more tightly controlled and sampling of personality variables and learning situations be more adequate.

INTRODUCTION

This research study addresses the problem of whether individual personality variables and attitudes toward programmed instruction contribute to the effectiveness in learning by programmed instruction. To date, programmed instruction research has not given full consideration to the world of individual differences. Especially neglected have been personality differences as well as the attitudes held toward programmed instruction. One of the problems of research in this area is the paucity of relevant operationally defined variables.

Previous research has attended primarily to individual rates of learning (linear programming) and to individual paths of learning (intrinsic programming). No attention, however, has been directed toward a comprehensive view of individual differences encompassing personality and the attitudes held toward programmed instruction and learning in general. One would expect that a rather shy person would approach any learning situation quite differently than an individual with a more outgoing makeup. Also, one would expect that the indivudal's attitude toward the mode of instruction would also make considerable difference.

Programmed instruction is now being widely employed in many educational settings, but with little knowledge of how individual personalities and attitudes affect its overall effectiveness as an educational tool. Unlike the tutor or classroom teacher, the program is not usually designed with the flexibility necessary to adjust to the attitude and personality differences. Generally, it is assumed that the programmed instruction is so designed that it can accomodate a lot of learners through the use of small steps, individual pacing, and reward systems assumed to be operating in the feedback.

Related Literature

The specific problem to which the research is addressed to date has not been investigated. The following literature, however, is related pertinent research which does suggest that personality and attitude variables are important considerations in the investigation of the effectiveness of classroom instruction.

Sarason (1958) reports that his studies indicate that in learning situations involving reinforcement by the experimenter, the subject brings into the experimental situation attitudes, anticipations, and assumptions which directly effect the extent to which they accept the experimenter's reinforcement as a basis for modifying their own behavior. In other words, the attitude or other personal characteristics one brings into a particular situation are important in the success or failure of the desired goal of that particular situation. In programmed learning, the desired goal is the mastery of the material presented by the program. If negative attitudes or expectations are held toward programmed learning as a teaching method, then one would expect that these factors would influence the effectiveness of the program.

For a more direct consideration of the effects of individual differences as they relate to programmed learning, the concept of reinforcement may be taken as an example. In programmed learning it is assumed that there are similar reinforcing effects for all learners after they have made a correct response on the program. There is reason to question this assumption. For example, Forlano and Axelrod (1937) have indicated that repeated application of praise or blame has different effects on work performance of "introverts" and "extroverts". Similar results were found by Thompson and Hunnicut (1944) where it was shown that praise as well as blame can be used unwisely if one

does not fully appreciate and understand different personalities found within learning situations. The relevance of the foregoing research to programmed learning is evident. It likewise points out the possibility that other personality dimensions should be taken into consideration.

French's (1952) study indicates that a specific type of feedback given in a learning situation effects differently individuals with high need for achievement than those with high need for affiliation. Learners with high achievement motives were better under conditions of task-relevant feedback, while those with high affiliation motives were more responsive to feedback of a more personal mature. Feedback from programmed instruction is quite definitely impersonal. Therefore, French's findings have direct application to programmed instruction and suggest the need for more comprehensive study of personality variables as related to the effectiveness of programmed instruction.

In the King, Armitage, and Tilton (1960) study the use of rewards given by a vending machine proved to be useful in teaching psychiatric patients diagnosed as schizophrenic. The impersonal nature of the vending machine appeared to be less threatening to the patients than the face to face contact with the instructors. Again, the interaction between techniques of instruction, and the individual differences was shown to be important. Chittick, Eldred and Brooks (1966) have studied the feasibility of predicting learning progress from the Personality Assessment System. In this work they derived several specific hypotheses and concluded that the Personality Assessment System is a relevant measure of personality variables which are appropriate to learning ability.

This study further tests these hypothese which are stated below and will study the relationship of attitudes to progress in progress in programmed instruction.

Subjects for the study were tenth grade general mathematics students. The programmed instruction used in the study was the Basic Mathematics Series published by Addison-Wesley (O'Malley, 1963). The objective of this research was to explore the role of personality dimensions and attitudes toward programmed instruction as they relate to the effectiveness of the programmed learning. Specific questions investigated were the following:

(1) What are the personality variables which effect success in programmed learning? The criteria of success are error score on criterion tests and course grade;

(2) Do attitudes toward programmed instruction effect success as measured in (1) above in programmed learning;

(3) In addition to the general exploration of attitudes and personality variables in (1) and (2) above, there are specific hypotheses relating to personality constellations which will be tested separately.

Personality constellations which were expected to be related to success in programmed instruction are denoted as follows:

A. $E_uF_cA_c$

B. $E_uF_cA_u$

C. $E_cF_cA_c$

D. $E_cF_cA_u$

E. $E_uR_cA_c$

F. $E_uR_cA_u$

G. $E_cR_cA_c$

H. $E_cR_cA_u$

General Conclusions

The two criteria of learning were correlated less than expected and interesting attitude differences account for much of the difference. The

specific hypotheses concerning the effects of personality patterns were minimally supported and other interesting leads were found.

METHODS

Subjects

Ninety-seven students in the Basic Mathematics course at Boulder High School, Boulder, Colorado, were administered the Wechsler Adult Intelligence Scale. These students were tenth and eleventh graders. All of these students were later administered (before and after the utilization of Programmed Instruction Units) semantic differential scales to assess their attitudes about School, Education, Learning, Classes, Teachers, Programmed Instruction, Programmed Texts, Basic Math Course, Programmed Math, and Regular Math.

Sixteen students in a reading improvement course at the University of Colorado Counseling Center were administered Wechsler Adult Intelligence Scales as a back-up population for the study.

Tests and Criterion Measures

1. Wechsler Adult Intelligence Scale and the Gittinger Personality Assessment System.

The Gittinger Personality Assessment System is a personality theory which utilizes the subtests of the Wechsler as operational definitions of the concepts with three levels of analysis. At one level of analysis there are eight personality patterns; at another level there are sixty-four patterns; and at a third level there are five hundred and twelve personality patterns. At the second level of analysis which is called the Basic Personality Type, eight of the personality patterns theoretically are conducive to more effective learning from programmed instruction. These eight patterns

are stated in the hypotheses. All sixty-four patterns are listed in the appendix. The Personality Assessment System is particularly amenable to this type of research because it provides a means of conceptualizing the normal personality with highly reliable specific mensurational definitions of the complex array of personality types.

2. Measurement of attitudes toward programmed instruction.

The study will employ the technique of the Semantic Differential to measure attitudes toward programmed instruction. The Semantic Differential is a technique developed by Osgood et. al., (1957) as a method for measureing connotative meaning. The instrument is a combination of associational and scaling procedures. Subjects are asked to evaluate a concept by marking a series of seven interval rating scales, each bound by a pair of polar adjectives. The rationale for using the Semantic Differential in the present study is the following: subjects who rate the various concepts relating to programmed learning as high on the potency and evaluations scales will be those who see programmed learning as a valuable and potent teaching technique. If attitudes toward programmed learning have an effect on the total effectiveness of programmed learning, then those who see programmed instruction in a positive way to learn would have a higher performance on the criterion test than those who see programmed learning in a very negative way. (See the appendix for examples of the scales).

3. Measurement of Criterion Variables.

The number of errors made on tests during the programmed instruction will be one criterion variable. The final course grade provided by the high school and Reading Laboratory to cover the course material will provide the second criterion measurement.

Data Collection

The Wechsler Adult Intelligence Scales were individually administered to subjects by trained psychometricians. All other tests and attitude scales were administered by the teachers in the classroom.

Data Analysis and Design

The data were intercorrelated and factor analyzed. A program of factor analysis was utilized which factored the semantic differential variables and correlated all other variables to the factors. Nine oblique factors were retained. In each factor a variable was identified which best described the factor quantitatively and conceptually, which did not load highly on any other factor.

Multiple correlations were computed using the representative variables and the WAIS variables to predict to the criterion variables. The attitude factors were used to predict the criteria; the personality factors were used to predict the criteria; then, all factors were combined to predict the criteria.

Finally, an analysis of variance was calculated testing the specific hypotheses of the Personality Assessment System.

RESULTS

The results are presented in the order which they were calculated, i.e., factor analysis, multiple correlation and analysis of variance. Table I contains the loadings over 0.3 on the 9 oblique factors. The correlations between factors may be found in the appendix. Variable 24 is normal level, the weighted mean score of the Wechsler Adult Intelligence Scale subtests from which subtest deviations are calculated to obtain the Personality Assessment

System personality patterns. No such deviations are correlated to the factors 0.30 or greater except vocabulary, variable 40. Variables 68 through 96 are pretest or pre-programmed instruction attitudes. Variables 97 through 127 are post-test attitudes. Variables 130 through 158 are the difference scores of the two attitude measures.

Variables 128 and 129 are the criterion measures. A full description of all variables may be found in the appendix.

TABLE I

FACTOR LOADINGS***

N = 97

Variable Number	Factors I	II	III	IV	V	VI	VII	VIII	IX
24**							30		
40**	-35								
68		58*							
69		60*							
71		32							56
72		67							62*
74									55*
77		60							
80								77*	
81		36						71*	
83			-41						
86				32			33		
87					39*				
89					43*		57		
90					58*				
92							64*		
93					49				
95			35				45		
96			53						36
98				65*					
99				66*					
101		36							40
102								-41	
104		34							
105			41						
107				41				35	
108				45					
110		80*							

TABLE I - continued

Variable Number	Factors I	II	III	IV	V	VI	VII	VIII	IX
110			80*						
111		35	59						-35
113	74								
114	84								
116	72								
117	69*								
119	52*						31		
120	61								
122	49								
123	60								
125				70*					
126**				70*					
128**			45			-32			
129**			32						
130**		-53			33				
131**		-40			49				
133**		-36	62				-32		
134**		-45	37						
136**			54						-41
137**		-34	40						
139**			42					53	-41
140**		-41			44				
142**			66					-45	
143**			63					-47	
145**	73					-34			
148**	61		34		-40	-49			
149**	69					-33			
151**	62		32		-42	-33	-31		
152**	71				-45	-36			
154**	58						-41		
155**	69						-41		
158			30						-48

* Selected to represent factor in Multiple Correlation.

** Extension variables correlated to the factors but not factored.

*** Decimals omitted.

In factor I we have very high loadings on the post tests and differences of the attitudes toward programmed instruction, programmed texts, "Basic Math" (the name of the course) and programmed math. This factor represents the change in attitude toward programmed instruction and the course. One would

assume that many students had a negative set toward the course and a lack of real knowledge about programmed instruction. Their attitudes become more positive during the course.

Factor II represents students' pretest attitudes toward school (68-69) and education (71-72). Noting the difference scores, the subjects' attitudes on these variables changed in a negative direction, but their attitude toward learning is another factor (IX) which changed less, providing an interesting contrast of attitudes toward education and learning.

Factor III is a post-test teacher factor which has few other very high loadings. Attitudes toward teachers changed to positive during the course.

Factor IV is represented best and almost exclusively by students' attitudes toward regular math which did not change during the period in the course between pre and post-test attitude testing. The criterion variables are loaded on this factor.

Factor V is the school post-test attitude which, as we noted in discussing factor II, became more negative.

Factor VI is the "Basic Math" pretest attitude. Those persons who were positive on this scale had a slight but significant change toward being more negative. This attitude has a small negative relationship to test scores.

Factor VII represents potency value of the programmed math in the pretest. Students who reacted very positively in the pretest to create this factor changed somewhat to the negative on the post-test.

Factor VIII is the students' pretest attitude toward teachers which changed toward the negative.

Factor IX is the positive potency rating of learning in the pretests which also had changed slightly toward the negative as noted in the discussion of Factor II, the school and education factor.

Summarizing the results of the factor analysis we find few relationships between attitudes and grades or attitudes and Personality Assessment System variables. Most interesting is the rating change of attitudes toward programmed instruction during the course and positive change in attitude toward teachers by some students, while attitudes toward school and education become more negative.

Multiple Correlation

The variables which best represented the factors conceptually and quantitatively were selected, and with the PAS variables used to predict to the criteria. Table II contains the Personality Assessment System predictors, Table III the attitude predictors, and Table IV the combined predictors.

TABLE II

PERSONALITY ASSESSMENT SYSTEM

N = 51

Prediction of Test Scores by Multiple Correlation

WAIS Variable Deviation		Multiple R*	Shrunken Multiple R
24	Normal Level	28	23
44	Arithmetic	42	37
49	Object Assembly	46	41
65	Perspective/Contact	50	43
48	Block Design	51	43
66	Scientific Information	53	43

Prediction of Final Grade by Multiple Correlation

WAIS Variable Deviation		Multiple R	Shrunken Multiple R
47	Picture Completion	28	24
65	Perspective/Contact	37	31
48	Block Design	41	34
44	Arithmetic	46	38
66	Scientific Information	51	42

*Decimals omitted

In Table II we see that Normal Level from the PAS is the best predictor of the test scores (the criteria are correlated r = 0.52). Other subtest scores raise the prediction but it never attains an impressive prediction. Predicting the final grade is even more interesting, as we noted normal level is not a predictor, and Picture Arrangement deviation which was hypothesized to be a predictor of learning is a predictor of the final grade. Thus, PA which measures the construct of Role Adaptability in the PAS is a predictor in a way which is consistent with PAS theory, but is not a contributor to learning as hypothesized.

TABLE III

ATTITUDES

N = 51

Predictions of Test Scores by Multiple Correlation

Semantic Differential		Multiple R*	Shrunken Multiple R
91	Pretest total, "Basic Math"	30	26
121	Post-test total, "Basic Math"	37	31
74	Pretest potency, Learning	40	32
112	Post-test total, Teachers	42	32
100	Post-test total, Teachers	45	33

Predictions of Final Grade by Multiple Correlation

Semantic Differential		Multiple R	Shrunken Multiple R
82	Pretest total, Teachers	40	38
91	Pretest total, "Basic Math"	58	54
92	Pretest Potency, Programmed Math	62	57
112	Post-test total, Regular Math	66	61
100	Post-test total, School	69	64
74	Pretest Potency, Learning	70	64

*Decimals omitted

The attitude Scales are better predictors of final grades than the PAS but not as good for predicting test scores. Attitudes toward teachers is the single most important predictor variable.

TABLE IV

N = 51

PAS AND ATTITUDES

Predictions of Test Scores by Multiple Correlation

Variable		Multiple R*	Shrunken R
91	Pretest Total, "Basic Math"	30	26
24	Normal Level WAIS	44	40
44	Arithmetic WAIS	51	46
49	Object Assembly WAIS	56	50
65	Perspective/Contact WAIS	61	56
121	Post-test Total, "Basic Math"	64	57
92	Pretest Potency, Programmed Math	66	59
112	Post-test Total, Teachers	67	59
100	Post-test Total, School	69	61

Predictions of Final Grades by Multiple Correlation

Variable		Multiple R	Shrunken R
82	Pretest Total, Teachers	40	38
127	Post-test Total, Regular Math	53	50
44	Arithmetic, WAIS	58	54
100	Post-test Total, School	63	59
112	Post-test Total, Teachers	68	64
48	Block Design WAIS	71	67
65	Perspective/Contact	73	68
74	Pretest Potency, Learning	76	70
91	Pretest Total, "Basic Math"	78	72

*Decimals omitted

Combining the predictors illustrates an interesting point. In predicting test grades the attitude "Basic Math" which represents the complex of attitudes toward programmed instruction is the best predictor followed by Normal Level (general intelligence), and to a lesser extent other abilities.

However, in predicting final grades, most of the variance is accounted for by attitudes toward teachers and school, followed by ability variables. We will not speculate on the direction of causality, but it is interesting to note the differences between the predictors of test scores and final grades.

TABLE V

ANALYSIS OF VARIANCE

Dependant Variable	DF	F	Probability
Test Errors	7/50	1.77	0.11
Final Grade	7/50	0.82	0.57

The analysis of variance results are not significant.

The hypothesized personality patterns were grouped and tested against each of the criteria. None of the hypothesized deviations resulted in a significant degree. Part of the difficulty with this test was the lack of the specified personality types in the sample.

The Reading Laboratory subjects. Two thirds (11/16) of the students who took the reading improvement course were externalizers at the primitive level of the Personality Assessment System. Sixteen were rigid at the primative level, and eleven of sixteen were role unadaptable at the basic or attained level. Seven of the eight students who performed above the median were role unadaptable at the basic or attained level. These results indicate that the Personality Assessment System does have potential for describing which persons ask for reading improvement and who among this group is likely to profit most from the course.

General Discussion of Results

The lack of consistent significant results relating to the Personality Assessment System necessitates accepting the null hypotheses at this time. The weight carried by attitudes toward teachers in attaining final grades is a cause for some concern because it complicates and confounds research on abilities.

Some factors which might have effected the results were the level of students in the basic mathematics course, the nature of the subject matter, the

level of the subject matter and the generous interspersing of lectures and traditional assignments with the programmed material by the teachers. One of the primary problems was the lack of certain personality patterns appropriate for testing the major hypotheses.

The most apparent results were the differences between the variables which contribute to the two different criteria, the lack of correlation between the criteria and the overriding effects of attitudes.

CONCLUSIONS AND RECOMMENDATIONS

Although the main sample in the study did not produce consistent positive results, the secondary sample indicated that there is potential for prediction in the PAS. We would recommend a different sampling procedure and learning situation for further investigation of the utility of the Personality Assessment System as a predictor of learning potential under specific conditions of instruction.

The learning situation should be a miniature situation which could be better controlled than a classroom, and sampling should be extended to provide more adequate numbers of the personality patterns of most theoretical interest. Also, the learning situation should sample more types of learning content such as social learning, mathematics, literature, etc.

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APPENDIX

Variable Identification -- WAIS

Variable No.	Variable Name
24	Normal Level (Weighted Mean Score of WAIS Subtests)
40	Vocabulary subtest of WAIS deviation from NL (Normal Level)
41	Information subtest of WAIS deviation from NL
42	Comprehension " " " " " "
43	Digit Span " " " " " "
44	Arithmetic " " " " " "
45	Similarities " " " " " "
46	Picture Arrangement " " " " "
47	Picture Completion " " " " "
48	Block Design " " " " " "
49	Object Assembly " " " " " "
50	Digit Symbol " " " " " "
65	Perspective/Contact Score from PC of WAIS
66	Scientific/Humanistic Information Score from Information Subtest of WAIS

Variable Identification -- Semantic Differential and Criteria

Pretest	Past Test	Difference	Concept	
68	98	130	Schools	P (Potency)
69	99	131	"	E (Evaluative)
70	100	132	"	T (Sum of P&E)
71	101	133	Education	P
72	102	134	"	E
73	103	135	"	T
74	104	136	Learning	P
75	105	137	"	E
76	106	138	"	T
77	107	139	Classes	P
78	108	140	"	E
79	109	141	"	T
80	110	142	Teachers	P
81	111	143	"	E
82	112	144	"	T
83	113	145	Programmed Instruction	P
84	114	146	" "	E
85	115	147	" "	T
86	116	148	Programmed Tests	P
87	117	149	" "	E
88	118	150	" "	T
89	119	151	"Basic Math"	P
90	120	152	" "	E
91	121	153	" "	T
92	122	154	Programmed Math	P
93	123	155	" "	E
94	124	156	" "	T
95	125	157	Regular Math	P
96	126	158	" "	E
97	127	159	" "	T
	128		Test Scores	
	129		Final Grade	

Correlations Between Factors

Factors	2	3	4	5	6	7	8	9
1	.04	.29	.12	.19	.46	.21	.33	.23
2		.08	.07	.16	.14	.09	.06	.16
3			.24	.38	.57	-.09	.24	.44
4				.31	.24	-.29	.11	.38
5					.29	-.22	.18	.35
6						.03	.24	.44
7							.15	.05
8								.38

Correlations Between Factors

Factors	2	3	4	5	6	7	8	9
1	.04	.29	.12	.19	.46	.21	.33	.23
2		.08	.07	.16	.14	.09	.06	.16
3			.24	.38	.57	-.09	.24	.44
4				.31	.24	-.29	.11	.38
5					.29	-.22	.18	.35
6						.03	.24	.44
7							.15	.05
8								.38

Variables Selected for Multiple Correlations

Semantic Differential

Factor	Variable	
I	121	Total "Basic Math" Post test
II	70	Total School Pretest
III	112	Total Teachers Posttest
IV	127	Total Regular Math Posttest
V	100	Total School Posttest
VI	91	Total "Basic Math" Pretest
VII	92	Potency Programmed Math Pretest
VIII	82	Total Teachers Pretest
IX	74	Potency Learning Pretest

All WAIS variables

INSTRUCTIONS -- SEMANTIC DIFFERENTIAL

Here is how you are to use the scales in this booklet:

If you feel that the concept at the top of the page is very closely related in meaning to one end of the scale, you should place your checkmark as follows:

Fair ____ : ____ : ____ : ____ : ____ : ____ : ____ Unfair

OR

Fair ____ : ____ : ____ : ____ : ____ : ____ : ____ Unfair

If you feel that the concept at the top of the page is quite closely related to one or the other end of the scale (but not extremely), you should place your checkmark as follows:

Strong ____ : ____ : ____ : ____ : ____ : ____ : ____ Weak

OR

Strong ____ : ____ : ____ : ____ : ____ : ____ : ____ Weak

If the concept seems only slightly related in meaning to one side as opposed to the other side (but not really neutral), then you should check as follows:

Active ____ : ____ : ____ : ____ : ____ : ____ : ____ Passive

OR

Active ____ : ____ : ____ : ____ : ____ : ____ : ____ Passive

The direction toward which you mark, of course, depends upon which of the two ends of the scale seems most closely related to the meaning of the concept you are judging.

If you consider the concept to be neutral on the scale, both sides of the scale equally associated with the concept, or if the scale is completely irrelevant, unrelated to the concept, then you should place your checkmark in the middle space:

Safe ____ : ____ : ____ : ____ : ____ : ____ : ____ Dangerous

(Sample page)
Programmed Learning

VALUABLE	: : : : : : :	WORTHLESS
LARGE	: : : : : : :	SMALL
FREQUENT	: : : : : : :	RARE
FAST	: : : : : : :	SLOW
PLEASANT	: : : : : : :	UNPLEASANT
AGGRESSIVE	: : : : : : :	DEFENSIVE
FRESH	: : : : : : :	STALE
STRONG	: : : : : : :	WEAK
REAL	: : : : : : :	UNREAL
RELAXED	: : : : : : :	TENSE
ACTIVE	: : : : : : :	PASSIVE
GOOD	: : : : : : :	BAD
POTENT	: : : : : : :	FEEBLE

Basic Personality Types

I_u	R_u	A_c	I_u	R_u	U_c
I_u	R_u	A_u	I_u	R_u	U_u
I_c	R_u	A_c	I_c	R_u	U_c
I_c	R_u	A_u	I_c	R_u	U_u
I_u	F_u	A_c	I_u	F_u	U_c
I_u	F_u	A_u	I_u	F_u	U_u
I_c	F_u	A_c	I_c	F_u	U_c
I_c	F_u	A_u	I_c	F_u	U_u
I_u	F_c	A_c	I_u	F_c	U_c
I_u	F_c	A_u	I_u	F_c	U_u
I_c	F_c	A_c	I_c	F_c	U_c
I_c	F_c	A_u	I_c	F_c	U_u
I_u	R_c	A_c	I_u	R_c	U_c
I_u	R_c	A_u	I_u	R_c	U_u
I_c	R_c	A_c	I_c	R_c	U_c
I_c	R_c	A_u	I_c	R_c	U_u
E_u	R_u	A_c	E_u	R_u	U_c
E_u	R_u	A_u	E_u	R_u	U_u
E_c	R_u	A_c	E_c	R_u	U_c
E_c	R_u	A_u	E_c	R_u	U_u
E_u	F_u	A_c	E_u	F_u	U_c
E_u	F_u	A_u	E_u	F_u	U_u
E_c	F_u	A_c	E_c	F_u	U_c
E_c	F_u	A_u	E_c	F_u	U_u

Basic Personality Types - continued

E_u	F_c	A_c	E_u	F_c	U_c
E_u	F_c	A_u	E_u	F_c	U_u
E_c	F_c	A_c	E_c	F_c	U_c
E_c	F_c	A_u	E_c	F_c	U_u
E_u	R_c	A_c	E_u	F_c	U_c
E_u	R_c	A_u	E_u	R_c	U_u
E_c	R_c	A_c	E_c	R_c	U_c
E_c	R_c	A_u	E_c	R_c	U_u