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Charles J. Huffman PhD,

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PERSONALIZING THE MATERIAL LEADS TO COLLEGE STUDENTS' BETTER UNDERSTANDING OF CONCEPTS

BY CHARLES J. HUFFMAN, PHD

Research on the effectiveness of teaching techniques has found that activities that promote student participation in the learning process, as opposed to passive exposure to the material, usually lead to better understanding of the material (e.g., Franz & Vicker, 2010). “Active learning” techniques, for example, in which students engage the material to be learned by role playing, debating controversial issues, etc., have been found to be effective in many learning environments (e.g., Hillyard, Gillespie, & Littig, 2010; Stewart, Myers, & Cullie, 2010). In particular, activities that allow the student to *do* something with the material have long been a part of education, in

“...students learn better when they are given the chance to apply knowledge to their own lives than when they are just exposed to the material in classes and textbooks.”

the form of laboratory and other experiential activities. Experiential learning has received much attention in the literature since Kolb’s (1984) influential theory was proposed (e.g., Quinton & Smallbone, 2010), but evidence for the effectiveness of experiential activities that allow the student to *apply the material to his or her own life* (i.e., personalize the material) has been lacking. Although many educators use techniques designed to give students an opportunity to personalize the material, often the assessment of the effectiveness of these techniques is limited to evaluating how much the student learns about him or herself, or what those techniques can reveal about the student’s learning style (Kolb & Kolb, 2005). More research is needed to assess the effectiveness of personalization techniques, to attempt to promote understanding of the specific course material. In this study, two of these “personalization” activities were given to college students, and the effectiveness of these assignments at improving students’ knowledge of relevant course material was measured.

Method

Eighteen students at Piedmont Virginia Community College in one section of an introductory psychology course (PSY 200: Principles of Psychology) were given an out-of-class project that involved personalizing one aspect of personality (taking a “Birth Order” personality inventory and writing a paper reflecting on how well the results matched the student’s perception of his or her own personality; see Appendix A for this assignment). Eighteen students in another section (that met

the same days, right after the first section) of the same course at the same college received a comparable personalization project (taking a “Type A/B” personality inventory and writing a paper reflecting on the results; see Appendix A for this assignment). The two projects were chosen because of their similar requirements and content (both were on the topic of personality). The two personality dimensions (Birth Order and A/B) were given equal attention in class lectures for both sections. The students who received these assignments did not know the hypotheses, and a guest instructor, who also did not know the hypotheses, presented the material on personality to the classes. Students in both sections received the same final exam items on Birth Order and Type A/B personality dimensions (three items on each dimension; see Appendix B). For each student the number of correct answers on these final exam items was measured for each of the two personality dimensions. It was hypothesized that the students who completed the Birth Order project would answer significantly more final exam questions correctly about the effects of Birth Order on personality than students who completed the Type A/B project. It was also hypothesized that students who completed the Type A/B personality project would answer significantly more final exam questions correctly about the Type A/B personality dimension than students who completed the Birth Order personality project.

Results and Discussion

A 2 (type of personality project, Birth Order or Type A/B, manipulated between-subjects) X 2 (type of exam item, Birth Order or Type A/B, manipulated within-subjects) two way ANOVA (Analysis of Variance) was used to analyze the results. See table below.

Table:

Mean number of correct answers to exam items as a function of type of project and type of exam item.

Type of Project				
	Birth Order		Type A/B	Grand
Type of Exam Item	Mean		Mean	Mean
Birth Order	2.61	>	2.06	2.34
Type A/B	1.89	<	2.50	2.20
Grand Mean	2.25		2.28	

There was no main effect of type of project, $p > .05$, meaning that students who completed one project did not answer significantly more questions correctly on both types of exam items than students who completed the other project. There also was no main effect of type of exam item, $p > .05$, meaning that students in both sections combined did not answer significantly more questions correctly for one type of exam item than the other. This shows that the exam items for the two personality dimensions were of comparable difficulty. As hypothesized, there was a significant interaction between the two variables, $F(1,34) = 9.44$, $p < .01$. Multiple comparison tests revealed that students who completed the Birth Order personality

project answered correctly significantly more Birth Order exam items (mean = 2.61) than students who completed the Type A/B project (mean = 2.06), and conversely, students who completed the Type A/B project answered correctly significantly more type A/B exam items (mean = 2.50) than students who completed the Birth Order project (mean = 1.89).

In summary, students who completed a particular personality project answered significantly more questions correctly on final exam items pertaining to the personality dimension addressed by that project than students who completed a different personality project. These results suggest that students learn better when they are given the chance to apply the knowledge to their own lives than when they are just exposed to the material in classes and textbooks. In particular, these results show that students learn *concepts* better when given a chance to personalize the material; they do not just learn more about themselves. Curricula that employ individualized instruction in primary and secondary schools take advantage of these teaching techniques, but instructors in higher education often do not have the luxury of giving each student individual activities designed to personalize the material. The assignments used in this study can be used in large as well as small classes and still accomplish the goal of allowing the student to apply and personalize the material. More research is needed on the effectiveness of these assignments to lead to long term (more than one college semester) retention of learned concepts.

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Appendix A: Personality Inventories

Who are you? Personality Assessment Experiential Project PSY 200

Purpose: The purpose of this project is to improve your understanding of your personality (and your understanding of personality types) by allowing you to experience some of the ways personality can be assessed or measured, and to apply those results to your own life (in other words, you personalize the material on personality!).

Birth Order Personality Inventory

Hold down the “control” (ctrl) key and click on the underlined, colored link (URL – starts with http) below to access the birth order inventory. Answer the questions about your personality by clicking on the bubble beside your choice, and then click “submit.” You will be told that you likely are a “first born,” or a “last born,” or whatever birth order personality type you were predicted to be by this inventory, and given some brief information about that birth order type. Read the information about your birth order, *then access another website below for additional information.* Read more information about your birth order there, then write your predicted birth order in the space indicated below, along with your real birth order.

Last, write your reaction to the conclusion that you are a certain birth order in the space indicated for that below. React by stating first if the inventory was correct (were you born in the order that the inventory said you were born in?). Then if the inventory was correct, state whether you think your personality is well described by the description of that birth order, or not well described, and say why or why not. Give examples of your behavior or thinking that either supports the interpretation of your birth order or does not support it. Also, state if you think you learned more about your personality by taking this inventory.

Please use complete sentences and pay attention to spelling, grammar, and syntax in order to write a clear, concise, and coherent paragraph for your reaction.

Birth Order Predictor (quiz or inventory):

<http://www.blogthings.com/birthorderpredictorquiz/>

Your birth order as predicted by the inventory:

Your real birth order:

Your Reaction:

Who are you?
Personality Assessment Experiential Project
PSY 200

Purpose: The purpose of this project is to improve your understanding of your personality (and your understanding of personality types) by allowing you to experience some of the ways personality can be assessed or measured, and to apply those results to your own life (in other words you personalize the material on personality).

Type A/B Personality Inventory

Hold down the “control” (ctrl) key and click on the underlined, colored link (URL – starts with http) below to access this website. Answer the questions about your personality by clicking on the bubble beside your choice, and then click on “submit.” You will be given information about the type A/B dimension, and at the bottom will be your score (a number out of 100), along with an interpretation of that score.

Read the information about type A/B, then read the interpretation of your score, and then write your score in the space indicated below. Last, write your reaction to the interpretation of your score in the space indicated for that below. React by stating if you think your personality is well described by this inventory, or not well described, and say why or why not. Give examples of your behavior or thinking that either supports the interpretation of your score or does not support it. Also, state if you think you learned more about your personality by taking this inventory.

Please use complete sentences and pay attention to spelling, grammar, and syntax in order to write a clear, concise, and coherent paragraph for your reaction.

http://discoveryhealth.queendom.com/questions/type_a_personality_1.html

Score (number out of 100):

Your Reaction:

Appendix B: Exam items pertaining to Birth Order and Type A/B personality dimensions

Birth Order:

According to the birth order approach to personality, a person who becomes very responsible and a leader was likely

- a. born first in a family of several children.
- b. born last in a family of several children.
- c. born in the middle in a family of several children.
- d. none of the above

According to the birth order approach to personality, a person who becomes “spoiled” and used to getting what he or she wants, and develops a less responsible personality, was likely

- a. born first in a family of several children.
- b. born last in a family of several children.
- c. born in the middle in a family of several children.
- d. none of the above

According to the birth order approach to personality, a person who receives less attention while growing up than the other children, and therefore develops a personality that is more likely to be either quiet and shy, or the other extreme: loud and attention-seeking, is likely to have been

- a. born first in a family of several children.
- b. born last in a family of several children.
- c. born in the middle in a family of several children.
- d. none of the above

Type A/B:

A friend of yours is always easy going and laid back. He doesn't get upset if he doesn't accomplish much. His personality would best be classified as

- a. Type A.
- b. Type B.
- c. Type Z
- d. About halfway between Type A and Type B.

A friend of yours is somewhat ambitious and enjoys a challenge, but doesn't get upset about not being the absolute best in whatever he does. His personality would best be classified as

- a. Type A.
- b. Type B.
- c. Type Z.
- d. About halfway between Type A and Type B.

A friend of yours is always struggling to outdo all his competitors in whatever he does, no matter how unimportant the activity is. He is always pressed for time and usually irritable. He has developed problems with hypertension (chronic high blood pressure) and ulcers. His personality would best be classified as

- a. Type A.
- b. Type B.
- c. Type Z.
- d. About halfway between Type A and Type B.

Charles J. Huffman, PhD, is an Associate Professor of Psychology at Piedmont Virginia Community College. He is also the Faculty Advisor to the PVCC Chess Club.