THE EFFECT OF AFFECTIVE DOMAIN CHARACTERISTICS ON BEHAVIORAL OR PSYCHOMOTOR OUTCOMES

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ABSTRACT

Whole person learning (WPL) can be defined as the combined influences of the three learning domains, cognitive, affective, and psychomotor (behavioral) in experiential learning. Cognitive and psychomotor domains have long been studied and found to exert a great deal of influence as contributing to whole person learning. The idea of immersion (involvement) is important to whole person learning. In order for whole person learning to be at its greatest one must be immersed/involved in both body and soul. The diminishing of either one will diminish the degree of whole person learning that is taking place. When we consider the "emotional immersion" as part of the "whole person" learning outcome, we find that because emotions and feeling vary to a (great) degree, from individual to individual, so too can the sometimes negative effects (lesser influence) as well as the positive effects (greater influence) of emotions on how we feel toward something, and how that feeling affects not only how and how much we learn, but also to a degree what we learn. Therefore, the purpose of this study is to look at some factors in the affective domain and to determine what type of effect they have on whole person learning.

INTRODUCTION

In many aspects much of experiential learning is devoted to what has been deemed "whole-person learning" (WPL). This is where the cognitive, affective and psychomotor or behavioral dimensions of a person's learning are addressed. That is, WPL always functions integratively, combining the affective and behavioral domains with the cognitive domain always found in the educational process (Hoover, 1974). To be able to determine whether this type of learning has actually taken place, we can measure learning in each of these dimensions, singularly or in combination to arrive at a desired level of measure, across those dimensions. From this one could possibly assume that WPL either took place or it did not, in terms of absolutes and not to the degree. This can be seen or implied through Hoover, et.al. (2010) when it was asserted that, "although intended to produce meaningful outcomes, experiential exercises do not guarantee the integration of experiences across the cognitive, affective, and behavioral components". It is however hard to imagine that these three components do not exist in some way, and to varying degrees, in every experiential exercise.

The original divisions of learning outcomes; cognitive, affective and psychomotor were for the most part, arbitrary since psychologists and educators agreed that in teaching and real-life learning situations, no true separation of cognitive, affective and psychomotor states were possible (Bloom, 1956; Gephart and Ingle, 1976). While this remains true, these domains have been studied as separate entities in trying to best define whole-person learning (Gephart and Ingle, 1976; Krathwohl, Bloom and Masia, 1964). Of these components, the most studied is the cognitive, followed by the psychomotor/behavioral and then the affective. The reason for this is that it is much easier to study the cognitive (what people know) and the behavioral (their actions) than the affective (how they feel about or toward something).

Also too, it has been shown by Giambatista and Hoover (2010) that one of the keys to increasing the impact of experiential learning is through the (a) process that increase (s) the intensity of the experiential setting through a (the) process they labeled as "behavioral immersion". This is the degree, they state, to which immersion takes place or exists is related to the degree to which the learner becomes "involved" or "engaged" in the exercise. The highest learning experiences are ones in which the learning individual functions at a high level of arousal (awareness – a cognitive activity) and activity (performing behavior) on all dimensions (Hoover, 1974) or to be an active part of the exercise. This would, on the surface, seem logical because according to their proposed continuum (Figure 1) the dimensions are contributory and perhaps even synergistically interactive (Hoover, 1974). What is not stated is that the affective domain and its effects are implied to be contributing or influencing at their fullest, which at this point can only be assumed. It is proposed that the affective domain, being the least studied, and perhaps the most variable, has a range that influences the degree to which WPL occurs. This therefore is the purpose of this study.

A question arises in that there is a direct absence of the affective domain. When one is involved or engaged in the exercise, the question that arises is this; "Is the learner engaged by "going through the motions" giving the desired behavior because that is what is expected of them, versus is

the learner "truly passionate" about what they are doing. Emotions are generally thought of as rather destructive, and undesirable displays can be shown as stating, "Don't get so emotional" or " cool off and keep your head". Emotion in this sense occurs within an individual and makes it difficult to relate to a situation in a predictable and acceptable manner (Russel and Black Jr., 1972). What is believed to be missing is the degree of ownership present (your emotions as they relate to the issue) because one can be involved (immersed) without taking ownership (just doing it to do it rather than displaying emotion) or being truly passionate about the issue. In other words, this is seen as being in relation to, as opposed to "doing without thinking" or "acting without thinking".

Since you (one) perceive(s) emotions as belonging to you (ownership), and you generate thoughts consciously, you (one) consider(s) the emotions to be part of a thought, not vice versa (and hence you call identified emotions, "thoughts"). Therefore it can be said, that a feeling is another word for unconscious thought and that emotion is an unconscious feeling; a feeling is like a conscious emotion (Pettinelli, 2011). Things that are emotional are things that cause you to think; consciously or unconsciously and therefore they would cause you to feel, consciously or unconsciously. The more you like something (feel strongly about) and you can't consciously identify as to why you like it (or do it), the more emotional it is. Emotion is a feeling, completely separate from facts or information (cognitive domain). Your intellect or ability to do things (behavioral domain) which are real is going to generate feelings just like emotions do (Pettinelli, 2011). From this we can now consider the issue of the existence of "affective or emotional" immersion where one puts their whole feeling, beliefs, attitudes, and values into the performance of the exercise and to what degree does this contribute to whole person learning.

The affective domain, as stated earlier, is the least measured of the domains when it comes to whole person learning, yet, it is felt to be central to very part of the learning and evaluation process. One of the reasons why integration of the affective and cognitive domains has rarely been attempted is that affective behaviors (visible emotions) are difficult to conceptualize and evaluating cognitive behaviors are easier to specify, operationalize and measure (Martin and Briggs, 1986). Problems in identifying affective domain characteristics are that the concepts that comprise it are so broad and often unfocused that all aspects of behavior not clearly cognitive or psychomotor are lumped together in a category called affective (Martin and Briggs, 1986). This can be seen (is recognized) in the threshold of consciousness, with awareness and that of evaluation, with one's willingness (based on emotional ties to the stimulus) to respond, is the basis for psychomotor responses. It is the bridge between the stimulus and the cognitive with psychomotor (behavioral) aspects of one's personality.

The purpose of this research is to examine the relationship(s) which may exist between the items in the affective domain and those of the behavioral or psychomotor. The dependent variables are those identified as those in the behavioral domain with the affective domain items being independent. Therefore, this research's ain is to attempt to predict or determine the existence and the strength of the relationship that may exist between affective components on the behavioral or psychomotor domain. Therefore it is further hypothesized that; 1) that the stronger the relationship between affective variables and behavioral variables, the greater the degree of whole person learning takes place, 2) the strongest relationship should exist amongst all the variables. The point of concentration of this study focuses on the affective domain. If indeed it is central to every part of the learning and evaluation process, the end result will be seen in the conceptualization/evaluation of "non-discourse communication" in the psychomotor/behavioral domain. It is therefore further hypothesized that the stronger the relationship between affective variables and behavioral, the greater the degree of whole person learning will take place.

THEORETICAL DEVELOPMENT

The basis for this lime of study stems from the two related facts; the first being that the affective domain is that which is least studied and the second is that aspects of behavior not clearly cognitive or behavioral are lumped into the category called "affective". This would more or les imply and inappropriately so, that the affective domain, in

Figure 1
Conceptual Classification Scheme Illustrating Combinations of Experiential Learning

	Cognitive	Affective	Behavioral	C/A	C/B	C/A/B
High Intensity Learning	Null	Null	Null	Yes	Yes	Definitely
Low Intensity	Yes	Maybe	Maybe	Possibly	Possibly	Possibly

most cases becomes the "catch-all" category where difficult or unexplained phenomena go. In this paper we are going to attempt to identify what makes up the affective domain and in identifying its characteristics, be able to attempt to predict the effects on the behavioral dimension.

One of the reasons why integration of the affective and cognitive domains has rarely been attempted is that affective behaviors are difficult to conceptualize and to evaluate cognitive behaviors are easier to specify, operationalize and measure (Martin and Briggs, 1986). Problems in identifying affective domain characteristics are that the concepts that comprise it are so broad and often unfocused that all aspects of behavior not clearly cognitive or psychomotor are lumped together in a category called affective (Martin and Briggs, 1986). This is with respect to how one individualizes emotion and the relative importance one see in this respect. It has been measured to some extent, the existence of the relationship between these domains in determining the extent of whole person learning.

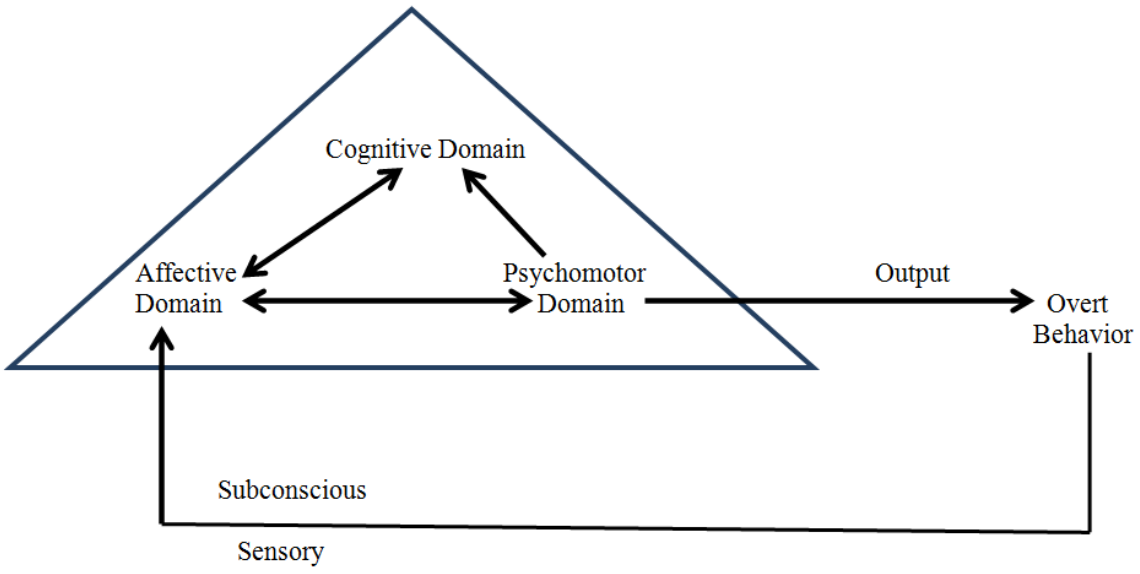
One's personality relies on how one defines how emotions rule our actions. In referring to definitions of emotions it implies that there is more than one way to understand emotion. An emotion is something of which we often are very much aware, and may interfere with the normal, rational way of behaving. Emotions are generally thought of as being destructive and undesirable displays which must be somehow controlled or concealed. As complex disturbances, they can also be thought of as an awareness of pleasantness or unpleasantness (Russell and Black, Jr., 1972). The presence of an emotion tends to give rise to a tension or drive toward or away from an object, situation, or person and obtaining this objective will satisfy that emotion and helps restore a balance. Emotions, like physical needs, act as drives to motivate the individual toward action (Russell and Black, Jr., 1972).

A danger comes when emotions can be generalized across situations. Because emotions can also be unique to individuals and therefore cause individuals to react differently, we should be cautious not to generalize with respect to a degree of learning. Furthermore, emotional or affective behavior, while it may be appropriate for a woman, may be inappropriate for a man and it is likely in which men tend to overlook the role that this important source of energy plays in our daily behavior (psychomotor). It is becoming increasingly recognized that many of our decisions are made for emotional reasons rather than for rational or logical ones (Russell and Black, Jr., 1972). This in turn may affect the degree of whole person learning which takes place and the quality of such learning (is whole person learning different for males than for females).

The question has also been posed as to whether a human being even does thinking without feeling, acting without thinking, etc. Objectives and corresponding behaviors and evaluation materials differ in complexity and are usually set for a given exercise. As the level of complexity changes, this original objective will become part of a further or subsequent objective such as the ability to apply (psychomotor connotation) the principles learned. It seems very clear, therefore, that each person responds as a "total organism" or "whole being" whenever they do respond (Krathwohl, et.al., 1964). In general, educators seem to desire to achieve the higher levels of affective goals in learners, including satisfaction in response and developing a system of values (Eiss, et.al., 1969).

A closer examination of Eiss's model (Figure 2) shows that cognitive activity occurs when the individual decides whether the stimulus is of interest, usually thorough external behavior's sensory input to the subconscious. If the

Figure 2
Eiss's Model for Learning



level of interest demands further exploration then it prompts the individual to make a value judgment. This "value judgment can extend beyond pure curiosity to how much emotional attachment the person has." Psychomotor responses can be of two forms; thinking and doing. In the thinking response, new information is stored in the individual's memory bank and we say that learning has taken place (Eiss, et.al., 1969). However the display of that learning does not take place unless there is some active "doing" on the part of the learner. The intensity of the doing is hypothesized to reside in the degree of emotional or affective immersion related to the beliefs, attitudes, and values of the learner. Therefore, the greater the intensity of the emotion, the greater will be the intensity of the behavior (doing).

If it is true that one can surmise that a person's value system contributes to their behavior, it then stands to reason that how a person behaves and to the extent of that behavior lies in the level of understanding and associative feelings they already have and continue to develop over time, either by individual exposure or by group pressure. Therefore, in examining the affective domain we seek to determine if various characteristics or aspects adds to the existing relationship. It is hoped that, in general, it adds to the relationship so that one can experience greater whole person learning. Various aspects of the affective domain from a motivational standpoint, one recognizes that attributes and values are things that drive us to act. Given that, it is possible to design/develop motivational tools to help us and not only to act, but to act with greater conviction based on how these individual aspects influence/moderate/ mitigate the relationship, and that the conviction may/will lead to increased performance and greater degrees of learning.

In further consideration of the role of emotions, Pettinelli (2011) state that thoughts are separate from emotions because thought is a period of thinking, and that there is an overlap of feeling and thought (refer to current proposed model of ABSEL thinking). There are still parts of thought that don't have feeling or emotion in them (thinking without feeling), and there are parts of emotion that do not have thoughts in them (doing without thinking). If you are going to be emotional, you are going to be less attentive to something that you would be if you were thinking more. This would also depend upon what you are thinking about at the time in regards to certain stimuli (awareness in the cognitive domain). If you feel that the stimulus is good, then you are going to give it more attention than if you feel that it is bad (possibly). This in turn can affect the degree of whole person learning.

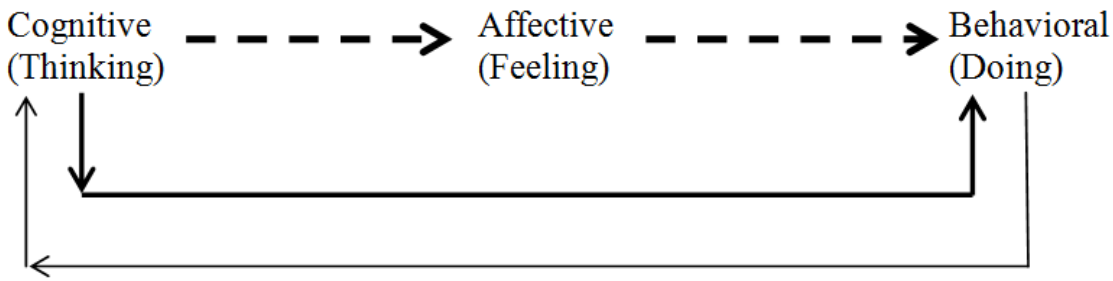
Furthermore, Pettinelli states that thought and feeling may result in the same amount of attention to something, but thought is more precise, with emotions and feelings being more obscure (and hence harder to measure and determine their effect on behavior, which is one of the reasons why they have not been studied much) Emotions are thoughts you can't identify or are difficult to do so. When you feel something, it must be that you are thinking about something (or a particular thing) unconsciously, you just have no idea what it is. Emotions cannot generate thoughts by themselves, but they can drive behaviors.

The desired outcome is to have the greatest degree of whole person learning, and in a sense, to minimize the "credibility gap" which may exist in the psychomotor/ behavioral domain (Eiss, et.al., 1969). This learning experience is seen through Eiss's Model for Learning (Figure 2) which shows the relationships amongst the domains and their contributions to learning. In order to get to that stage or point of whole person learning, we must be able to pinpoint and identify with some degree of accuracy, those characteristics associated with one's feelings, attributes and beliefs, and be able to motivate and properly channel those synergies as they contribute to learning (this is why the feedback loop affects the affective domain, as opposed to affecting either the cognitive or behavioral).

What is hoped to be shown is the following:

- The existence of a relationship between and among the dimensions proposed in Eiss's (1968) Model for Learning.
- The possible existence of high intensity learning as depicted in Hoover's (1974) conceptual classification structure.
- The existence of low intensity learning in experiential exercises.

Figure 3
Proposed Model of Current ABSEL Research



The intensity of learning (behavior) is hoped (can be) shown through a moderate correlation strength relationship between the variables as well as the overall strength.

We will begin the investigation by looking at the behavioral dimensions as the dependent variable (cognizant of the individual aspects) in relation to the cognitive dimension. The independent variable in this case will be the affective domain characteristics. We will then look at each affective characteristic individually and then at the total relationship to each behavioral dimension characteristic. This should give us an overall feel for the total extent of the relationship. Much of the (current) ABSEL research on whole person learning uses a model similar to the one in Figure 3, where we think about what it is that we are trying to experience and learn and then go out and do it.

The dotted/dashed line represents this current line of thought. The addition of feelings, values and attitudes as a direct line/relationship to the model adds the value of feeling. A feeling of emotion helps direct what we do, in the behavioral realm and in some way how we do it. In other words, the passion we undertake and its contribution to the learning process. The model shows that much of the research either by passes the affective domain altogether or treats it lightly in assuming its effect on overall learning. This would be consistent with Martin and Briggs (1986).

METHODOLOGY

Students (n=60) in an introductory management course were divided into groups of four by self-selection. Students stayed in these groups for the duration of the course. A series of nine experiential group exercises were administered over the course of the semester. A survey was administered across the three dimensions, cognitive, affective and behavioral. The characteristics which comprised the cognitive domain are listed in Table 1. Cognitive domain variables are those which require an intellectual awareness that stimulates the thought process. Affective domain items (Table 2) address our emotions of how we feel toward the stimulus. The greater the feeling or emotional ties we have concerning these variables, the greater the ownership, and hence the more apt we are to find that these have an effect on how we behave and/or learn. Psychomotor or behavioral dimension items (Table 3) address our actions and how we carry out our emotions. These variables are observable outcomes of the learning process. Determining if there is a direct relationship in which of the affective variables has the greatest influence or effect on the behavioral variables.

A linear regression model was used to investigate the relationships which existed among the domains, primarily the affective and behavioral. Six different models sur-

Table 1
Cognitive Domain

Variable Name	Description
Helplearn	Helped me learn new things
Encthink	Encouraged me to think about the material
IndentProb	Helped my ability to identify problems
HelpIntr	Helped me to see integration of the course material

Table 2
Affective Domain

Variable Name	Description
DrawRel	Helped me see or draw relationships between topic areas
AnalProb	Helped my ability to analyze problems
ThinkCreat	Increased my ability to think creatively
UnderstdAbil	Helped understand my own abilities
KnlBusPrn	Helped my knowledge of business principles
SelfConfid	Helped in developing my self-confidence

rounding the items in the behavioral dimension (Table 3), and using items from Table 2 as independent variables were constructed. For each of these a regression analysis was run yielding the results shown in Tables 4 – 9. These results yielded the following observations: the variables listed in the model were as a result of those items being significant in contributing to the overall relationship; there were either two or three variables identified; many of the variables appeared more than once throughout the analysis. The number of appearances of these variables is listed in Table 10.

As you can see strong relationships existed for R and R2 for each of the dependent variables and that those relationships increased in strength as the number of variables increased. It was also found that no model contained more than three independent variables. The Beta (standardized) values were also looked at in order to determine the influence that each variable had in the total relationship. Standardized Betas were used because they allow for direct comparison of the relative strength of the relationships between variables. Beta values because they allow for direct comparisons of the relative strengths of the relationships between variables. Beta values are between +1 and -1, a partial correlation show between two variables in which the influence of all other variables has been partialed out. Therefore, it is the unique contribution of one variable to explain another variable.

In each of the models it was found that there was an increase in the number of independent variables and that in each case of three predictor variables did the Beta initially increase and then decrease. In the case of only two predictor variables was shown decreases in the Beta. It is interesting to note that in each case, between cases , the influence of a particular variable was different in each case. An example would be between the variables in Table 7 (Increase effectiveness in other business courses) and Table 5 (Can help me become a more effective manager). Each of these had the same predictor variables, but in Table 7 you could find the influence of SelfConfid being less than SelfConfid in Table 5. This would indicate that emotion plays a larger role in being a more effective manager than it would in how well you perform or would perform in other business courses.

In the case of models with three predictor variables

Table 3
Behavioral/Psychomotor Domain

Variable Name	Description
HelpApply	Help me apply what I learned in class discussion
ApplyTech	Helped my ability to apply techniques
MakeDec	Helped my ability to make decisions
WorkPeople	Helped me work with people
IncEffect	Would help increase my effectiveness in other business courses
Effec Mgr	Can help me become a more effective manager

Table 4
(n=60)
Relationship between Psychomotor and Affective Dimensions: ApplyTech

Dependent Variable Measure	Predictor Variable	Predictor Variable	Predictor Variable
ApplyTech	DrawRel	ThinkCreat	Undstdabil
R	.842	.911	.923
R^2	.710	.830	.852
Adj. R^2	.705	.825	.844
Beta (standardized)	.842	.494	.385
		.492	.408
			.231

Table 5
(n=60)
Relationship between Psychomotor and Affective Dimensions: EffecMgr

Dependent Variable Measure	Predictor Variable	Predictor Variable
EffecMgr	Knlbusprin	Selfconfid
R	.762	.855
R^2	.581	.731
Adj. R^2	.573	.880
Beta (standardized)	.762	.492
		.473

Table 6
(n=60)
Relationship between Psychomotor and Affective Dimensions: HelpApply

Dependent Variable Measure	Predictor Variable	Predictor Variable	Predictor Variable
HelpApply	DrawRel	AnalProb	Knlbusprn
R	.842	.889	.902
R^2	.709	.790	.783
Adj. R^2	.704	.783	.804
Beta (standardized)	.842	.548	.354
		.409	.373
			.271

Table 7
(n=60)
Relationship between Psychomotor and Affective Dimensions: IncEffect

Dependent Variable Measure	Predictor Variable	Predictor Variable
IncEffect	Knlbusprn	SelfConfid
R	.715	.795
R^2	.511	.632
Adj. R^2	.502	.619
Beta (standardized)	.715	.472
		.425

Table 8
(n=60)
Relationship between Psychomotor and Affective Dimensions: MakeDec

Dependent Variable Measure	Predictor Variable	Predictor Variable	Predictor Variable
Make Decision	Analprob	DrawRel	ThinkCreat
R	.815	.878	.887
R^2	.665	.770	.787
Adj. R^2	.659	.767	.776
Beta (standardized)	.815	.480	.319
		.467	.410
			.243

Table 9
(n=60)
Relationship between Psychomotor and Affective Dimensions: WorkPeople

Dependent Variable Measure	Predictor Variable	Predictor Variable
Work People	ThinkCreat	SelfConfid
R	.737	.827
R^2	.544	.684
Adj. R^2	.536	.673
Beta (standardized)	.737	.504
		.441

Table 10
(n=60)
Appearance of Predictor Variables

Variable Name	Appearance
DrawRel	3
ThinkCreat	3
Undstdabil	1
Knlbusprn	3
SelfConfid	3
AnalProb	2

(Table B; the ability to make decisions and Table 6, Help me apply what I learned in class discussions), we see that the Beta coefficients as first increasing and then decreasing, thus indicating a decreased influence of the third variable (Knlbusprn and Thinkcreat respectively) on the strength of the relationship. This would also give validity to the differences in R and R2 from AnalProb and Knlbusprn in Table 6 and DrawRel and ThinkCreat from Table 8.

In these two models it is also interesting to note that the predictor variables DrawRel and AnalProb are the first two variables and their positions are switched in each model. The effect of these two variables, when switched, shows a lesser of an influence (difference) when being able to make a decision. (,013; MakeDec) versus helping to apply the techniques (.139); HelpApply). When all three variables are considered we first see an increase in the influence and then a decrease in influence. This would indicate that different emotions affect our behavior differently and at different times.

For those models with only two variables, we see a decrease in the influence of the second variable with an associated increase in the strengthening of the relationship. In this manner, it can be said that different emotions will exhibit different effects on the behavioral outcomes on experiential learning.

IMPLICATIONS FOR FUTURE RESEARCH

What can be implied by this research is that emotions do have an effect in experiential learning and in particular "whole-person" learning. The degree to which we are immersed cognitively will have a (purely) positive effect on that learning. Although not explicitly studied here has a potential impact for/in a future study. However, when we consider the "emotional immersion" as part of the "whole person" learning outcome, we find that because emotions and feelings vary to a (great) degree, from individual to individual, so too can the sometimes negative effects (lesser influence) as well as the positive effects (greater emotion) of emotions and how we feel toward something. Therefore "whole-person" learning, as we know it, really "whole person learning" and can we have a greater whole, by addressing ones attitudes within the learning. Additionally, is whole person learning the same for males as for females.

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