1998

Student Interest and Teacher Behaviors.

Keith David Weber

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Student Interest and Teacher Behaviors

Dissertation

Submitted to the College of Human Resources and Education

of

West Virginia University

In Partial Fulfillment of the Requirements for

The Degree of Doctor of Education

by

Keith Weber

Morgantown

West Virginia

1998

ACKNOWLEDGMENTS

O.K. kids, here we go again. The last time I wrote one of these pages it was all old school. In some ways the last one meant more because we didn't know if I could do this. The M.A. was about exorcizing old demons. With that being said, there are many ways that this one is more important than the last one. This time it is about the true meaning of the word commencement, new beginnings. So with all apologies to the old school, this acknowledgment is all about the new world.

To Dr. Richard T Walls who was an exemplary example of what a dissertation advisor should be. Dick, I figure that you are the second most relieved person now that I am done. This way you can get back to doing other work and not spend all of your time cleaning up my messes. I always felt like you had my back, and you proved that to be true a number of times. You probably feel like you deserve a second doctorate after the amount of work you put into me. Thank you for being my advisor, my main supporter, and most of all, my friend.

To Dr. Anne Nardi, Dr. Rayne Dennison, Dr. James C. McCroskey, and Dr. Matt Martin thank you for all your help and guidance. I do truly appreciate the understanding nature with which you all dealt with some of my hiccups. It is a lesson that I will not forget in dealing with my own students.

To Dr. Brian Patterson who has served as my teacher, advisor, mentor, soundboard, and best friend over the past four years. If there is one person that I could not have done this without, it is you. It is impossible to try and put into words how much you and Kristen have meant to me and my sanity. I used to say that every department should have a Patterson. I

take that back, every person should have a Patterson. Thanks for everything.

To Kells, good luck kid! I am leaving you in charge in around here. You are the new Pan! Make sure you take care of all the other kids around this place. I know, "this is one f$*!ed up department", but I sure am going to miss this place, so enjoy it while you can. You know how I never like to give advice, well buckle up because here is one for the road. True courage is shown in people by their ability to relate without unfair judgement. Often when we disapprove of others actions it typically reveals a weakness or inadequacy within ourselves. Just remember, make them treat you with respect. You've always got a place with us, and that is in our hearts.

To Dr. Matt Martin, I know I already said that, but you didn't think I was going to leave it at that did you? I'm not sure if I'm supposed to be saying thanks, or if I should just say its been fun. It has been fun, and I can't wait for conventions and requested speaking engagements. Good luck with everything, and if you ever need anything I got ya back. Just remember, it may not be Henry's property, but the Hudson River is pretty big place. Think about it and let me know in November. Oh, and by the way, you are invited to my wedding but I have to dance the first dance with my wife.

To Renee Kisner, the woman so affectionately referred to as Momma. Well I told you when I first showed up that I was going to be as big of a pain as your own children. Now, you tell me, do I lie? Thank you for everything momma, I can't imagine how this department could run without you (but I have a feeling that if certain others are not careful they may find out). I just want to leave you with this, greatness is not measured by the size of an individuals

accomplishments, but by the number of people they have touched. If this is true, Renee you are one of the greatest people that it has ever been my honor to associate with. Then again, I already knew that.

To Michelle and Bethany, and just how do you think Renee would be able to pull off all the... Uh...miracles that she does without your help. Doesn't Santa need elves? Doesn't Moe have Larry and Curly? Doesn't Groucho have Harpo and Zeppo? So Renee has you guys. Actually, it is more like we in this department have you guys, and we are lucky we do. You two help us in time of crises, protect us from angry students who want to call the dean, answer "how do I..." questions that seem unanswerable, and most importantly, hide us from very angry (if not psycho) department chairs. I am going to miss you two, good luck.

Don, if you don't know how I feel about you by now forget about it. However, there are a few things that I want to say. First, while I know how happy I am with this, I know that you are just as happy. Knowing that makes me feel good because I know having me as a kid hurt an awful lot some times, so it means a great deal to make you happy. Secondly, we say it all the time, what a difference five years makes. I want you to really think about that for a minute. What a difference five years makes, not just in me but in us. Into our lives came Merri, Vicki, and Greg and we are better for it. The demons of our past have become the guardian angels of our present. To steal an eloquent line from my little brother, I now have a big family.

Speaking of families, the last position goes to the most important person in my life today and for every tomorrow to come. This thank you goes out to the woman who is going to

take me as her husband. To Andi, the one who completed my healing process just by her presence. Without you this commencement could not be complete. The love you have shown me, and allowed me to feel has made me young again. Because of you I have found something that I thought I lost a long time ago, faith, and for that I can not thank you enough. I love, respect, and admire you Andi and I couldn't think of anyone I would rather spend my life with.

P.S. What a start

Table of Contents

CHAPTER 1

Literature Review, Research Questions, and Hypotheses

Literature from the fields of educational psychology, instructional communication, and organizational management are reviewed to lend insight into the relationship between interest and empowerment. Theoretical similarities of these two constructs are highlighted in an attempt to argue for concept isomorphism. The discussion of student interest will address (a) how interest has been examined to date, (b) the definition and components of interest, (c) qualitative differences in types of interest, (d) how interest has been manipulated, and (e) measurement and operationalization concerns in interest. This discussion of interest will be followed by a section that looks at how some of the issues raised in the review of the interest literature may be resolved by an examination of learner empowerment and how teacher behavior can impact student attitudes. Finally, method, results, and discussion sections are also included.

A great deal of the research conducted in the instructional realm has dealt with the effect of affective variables on cognitive learning. As a result of this research, it is assumed that affective variables have an "indirect and energizing effect" (Tobias, 1994) on learning by acting on cognitive processes. Hidi (1990) argued that one of these energizing affective variables is interest. Interest is seen as being central in determining how we select and persist in the processing of certain types of information in preference to others.

The role of interest in learning has been a topic of discussion for more than the past

hundred years. According to Schiefele (1991), the concept can be traced back to the writings of Herbart, who was a European educator in the 1800s. Herbart was one of the earliest educators who looked at education from a psychological standpoint. Herbart saw the development of multi-faceted interest as a primary goal of education. Herbart thought that interest assisted in the long term storage of information and provided motivation for further learning. (Schiefele, 1991).

In the early to middle part of the twentieth century, Dewey brought the idea of interest to the United States. Dewey delineated the difference between what he called interest-orientated learning and learning based on coercion. He viewed the latter type of learning as mechanical and proposed that it resulted in learners who simply processed information superficially. This surface-oriented learning deals with the memorization of facts. On the other hand, interest-based learning was proposed to be an active state that is concerned with real objects and has personal meaning to the learner. The vital aspect of this approach to learning is the idea of meaning as a critical component to interest. Dewey claimed that it was not possible for learning to occur if the individual was viewed apart from his or her environment. Interest was said to be the result of the interaction of the learners and their surroundings (Dewey, 1916).

Mitchell (1993) described interest as a hypothetical construct. In this sense, interest is not an entity that is readily observable by our five senses. We, as researchers and teachers, cannot judge the level of interest people have by simply observing them.

According to Mitchell, before we can understand the usefulness of interest, we must first conduct investigations into its construct validity. Mitchell asserted that there are two steps to establishing construct validity. The first step is to identify theoretically consistent and distinguishable facets of interest. Mitchell called these types of investigations "with-in network" (p.424) studies. Such studies call for (a) the formulation of a clear definition of interest, (b) a delineation between sub-components present within the interest construct, and finally, (c) measurement instruments that clearly reflect the intricacies of these components.

The type of validity that Mitchell (1993) referred to is also called content validity. Content validity is concerned with the extent to which the conceptualization and operationalization of a concept adequately represent all facets of that concept (Singleton, Straits, & Straits, 1993). For instance, if a student were to take an exam on the events of World War II, that test would not have content validity if the questions were only concerned with the battle of Midway. This test would need to have questions about the battles in Europe, Africa, Asia, and other aspects of the war for it to be assessing a student's knowledge of World War II in its entirety.

The next step, according to Mitchell (1993) is what he calls "between network" (p.424) studies. This entails the study of how interest might be related to other known constructs. Investigations such as these are normally undertaken to demonstrate construct validity. If a measure is valid, then it should correlate with measures of other

theoretically-related variables (Singleton et al, 1993). Skinner and Belmont (1993), Stipek (1996), and Tobias (1994) suggest that interest is positively related to motivation. If this is the case, then measures of interest (e.g., the Schraw, Bruning, & Svoboda (1995) percieved interest questionnaire) should be positively related to potential measures of motivation such as the (Pintrich, Smith, & Garcia, 1993) motivated strategies for learning questionnaire and the (Duda & Nicholls, 1992) academic goal orientation measure.

In what proceeds in this paper, the discussion of student interest will address (a) how interest has been examined to date, (b) the definition and components of interest, (c) qualitative differences in types of interest, (d) how interest has been manipulated, and (e) measurement and operationalization concerns in interest. This discussion of interest will be followed by a section that looks at how some of the issues raised in the review of the interest literature may be resolved by an examination of a variable called learner empowerment. Finally, teacher behaviors, a context for the practical application of instructional principles, and a rationale for future research are also included.

How Interest Has Been Examined To Date

The modern-day literature in educational psychology clearly demonstrates two generalizations about interest. First, the study of interest is still a major concern to educational psychologists. Secondly, even though there is a large body of research pertaining to the subject of interest, there is not a corresponding body of knowledge concerning the subject. In fact, Hidi and Baird (1988) asserted that little progress has been

made in integrating cognitive factors with affective variables in learning. This sentiment, while far reaching in its implications, finds support throughout the literature. Tobias (1994) wrote:

> While these efforts have done much to explain the complexities of human learning, they have also emphasized how little is known about the influence of affective factors on learning and cognition. It is commonly assumed that affective variables have an indirect energizing effect on learning by acting on the cognitive processes controlling what people learn. Little is known, however, about the specific cognitive processes engaged by affective variables, nor has their presumed energizing role on cognition been verified by research (p.37).

While it seems as both Tobias (1994) and Hidi and Baird (1988) are in agreement concerning how little is known about the impact of affective variables on learning, it is useful to keep in mind that there are some things that we do know about the role of affect in the classroom. For instance, we do know that teacher immediacy, teacher behavior, interest, and state motivation positively influence student learning (Ames, 1992; Bandura, 1977; Deci, Vallerand, Pelletier & Ryan, 1991; Frymier, 1994; Schraw et al., 1995; Schraw & Dennison., 1994). The problem area for researchers has been how to demonstrate these relationships on a

consistent basis. The basic premise that interest positively affects learning and cognition is not what is under attack in the statements made by Tobias (1994) and Hidi and Baird (1988). What is being called into question is how the construct of interest is to be generated, manipulated, and measured. Without an accurate way of determining the foci of student interest, it is difficult to understand the effect of interest on learning.

The importance of understanding the effects of interest on cognitive learning has been addressed by a number of researchers in this area (Deci, 1992; Hidi, 1990; Hidi & Baird, 1988; Iran-Nejad, 1987; Kintsch, 1980; Krapp, Hidi & Renninger, 1992; Mitchell, 1993; Renninger, 1992). Deci (1992) asserted that to truly understand the impact of motivation, we must also understand the impact of interest. The assumption here is that individuals take part in activities that are of interest to them, whether they lead to the achievement of future goals or not. In other words, individuals are motivated to participate in activities of interest for the enjoyment of the activity itself.

Tobias (1994) took this idea one step further when he asserted that, by seeing interest in this light, it becomes synonymous with intrinsic motivation. It might be more useful, however, to see interest as a subset of motivation. The reasoning for this is twofold. First, when looking at motivation from an instructional point of view, there are a number of variables that impact student motivation. Teacher affect, affect for school, locus of control, self-efficacy as well as the existence of rewards and punishments in the

surrounding environment are just a few variables that have been shown to have an effect on student motivation (Ames, 1992; Bandura, 1977; Deci, Vallerand, Pelletier & Ryan, 1991; Dweck, 1986; Frymier, 1994; Pintrich & DeGroot, 1990). Secondly, it would appear as if interest is a characteristic that is attributed to a task or activity, while the resulting behavior of the student is classified as either motivated or unmotivated. For example, if the study of American history is of interest, then an individual may act in a motivated fashion.

This notion of interest as a variable that impacts motivation finds support in the writings of researchers in this field. When writing about the problem of student apathy, Mitchell (1993) stated that:

> Classroom boredom, though, may really be an indicator of a bigger schooling problem, namely lack of motivation to learn. Because disinterest in learning is one primary manifestation of this, one way to attack classroom boredom is from the perspective of an intrinsic motivational variable called interestingness (p.424).

Here, Mitchell approached interest as a variable that is separate from, yet may still affect motivation. In his discussion of the confusion concerning the differences between motivation and interest Schiefele (1991) added that:

> it seems as if interest is nothing more than the lay term for intrinsic motivation. There is some reason to believe, however, that intrinsic

> motivation research does not capture all of the essential aspects of interest. Contemporary motivational research has clearly neglected some aspects of interest that are highly significant from theoretical and educational points of view (p.299).

The clearest delineation between interest and motivation appears later in Schiefele (1991). Here, the author asserted that interest is a directive force that is able to explain a student's choice of an area in which he or she may strive for high levels of performance or exhibit intrinsic motivation. Viewing interest and motivation in this manner, interest appears to be more cognitive while motivation appears more behavioral.

The Definition and Components of Interest

Interest has been defined by contemporary researchers as perceptions of value and prior knowledge (for similar definitions see Mitchell, 1993; Renninger, 1992; Schiefele, 1991; Tobias, 1994). Perceived value can be summarized as receiver-based attributions of meaningfulness or significance of an object. In other words, if a subject or object is evaluated by a receiver as usable or important, then it will have a higher value to that receiver.

The prior knowledge component to interest can be thought of as an object or piece of information activating an already existing schema. If incoming information fits with previously existing information, the receiver is said to have a high degree of prior knowledge concerning that object or subject. Hypothetically, since interest is composed of

prior knowledge and perceptions of value, this gives researchers and teachers two distinct ways to stimulate student interest. By illustrating the usefulness of information to students, interest can be stimulated. Similarly, by relating information to pre-existing knowledge, student interest can be aroused.

While it is useful to define interest as value and prior knowledge, the problem arises when researchers attempt to distinguish between their relative impacts. Dochy (1994) reported that between 30% and 60% of variance that is attributed to interest is actually attributable to prior knowledge. While it seems unrealistic to assume that there is little relationship between prior knowledge and interest, Tobias (1994) posited that the variance attributable to prior knowledge is more likely in the 20% range.

The interest versus prior knowledge debate seemingly becomes a circular argument. People with a high degree of interest in a topic area probably place a greater value on information related to that topic. Placing a higher value on the information in that area would likely drive an individual to acquire more knowledge about that subject. This increase in knowledge could then manifest itself in a higher degree of interest for that topic area.

Tobias (1994) provided a theoretical model illustrating how interest and prior knowledge interact to affect behavior. In this view, a high-high or low-low combination (interest and prior knowledge) are persistent states of being. In other words, if an individual has a high interest in a topic, he or she will most likely acquire a significant

amount of knowledge concerning that topic. Conversely, if an individual does not have a high degree of knowledge concerning a given topic, he or she will also not have a high degree of interest in learning more about that topic.

On the other hand, the two mixed conditions (high-low or low-high) are transient. If a person has a high degree of prior knowledge but a low degree of interest, that person will not attend to advances in that area. Consequently, the relative amount of prior knowledge that individual has will diminish. As for people who fall into the last condition, low prior knowledge and high interest, Tobias (1994) felt there would be one of two outcomes. Either these people would learn more about the topic because they would spend more time on activities that pertain to this area, or they would lose interest as a result of a lack of ability to understand or interact with the subject matter.

The importance to researchers and teachers concerning this relationship is that the relative effects of prior knowledge and interest are not separated. It then becomes impossible to determine which is accounting for the variance in learning. Tobias (1994) suggested that measures of prior knowledge be collected in interest research. This would allow researchers to determine the independent effects of interest by partialing out the influence of knowledge.

As a result of the preceding discussion, certain ideas concerning interest have been highlighted. First, the effects of interest on learning has been a topic of discussion for over a hundred years in the educational psychology literature. The fact that Herbart in the

1800s and Dewey in the early part of the 1900s were concerned with interest illustrates this point. Second, interest is a motivationally based construct. Deci (1992) asserted that because individuals are motivated to participate in activities of interest, to understand the impact of motivation, we must also understand the impact of interest. Third, interest has been defined as prior knowledge and perceived value (Mitchell, 1993; Renninger, 1992; Schiefele, 1991; Tobias, 1994). Fourth, there is a concern over how little we know about the effects of interest (Hidi, 1990; Hidi & Baird, 1988; Schiefele, 1991; Tobias, 1994). Finally, our inability to separate the effects of prior knowledge from value has added to our lack of understanding the effects of interest.

Qualitative Differences Between Types of Interest

Within the literature, there has been a distinction made between different types of interest. The first type of interest is called individual or topic interest. Here, interest is a relatively long-term preference for certain topics, activities, or content areas (Hidi & Baird, 1988; Schiefele, 1991). Research in this area centers around the study of personal preferences and the effect of these preferences on cognitive learning. From this perspective, interest is seen as being trait-like. An example of this would be if a student has an interest in chemistry, biology, baseball, art, music, or dinosaurs. These are topic areas that people may have preferences for.

The second way of studying interest is called situational interest. This approach is concerned with identifying certain stimulus characteristics that elicit interest. From this

perspective, interest is seen as being state-like. It is presumed that stimulus characteristics able to raise interest levels in this manner are novelty, anomaly, unexpectedness, and environmental stimuli (Anderson, Shirey, Wilson, & Fielding, 1987; Berlyne, 1960; Iran-Nejad, 1987; Kintsch, 1980; Schraw et al., 1994). An example of this type of interest is when we go to the movies and enjoy watching a good mystery that stars an actor or actress that we find appealing. The movie generates interest from the viewer through the unexpectedness of the story. Additional interest is created because of the leading actor's appeal, which serves as a positive environmental stimulus.

These different definitions of interest point to a qualitative difference between the two types of variables. Personal (also termed as individual or topic interest) is developed slowly over a long period of time, while situational interest is something that is manufactured quickly. Furthermore, individual interest can have far-reaching implications for preferences while the effect of situational interest is not sustained for a great deal of time.

Whereas personal interest and situational interest can be thought of as being separate and distinct entities, they also have been hypothesized to be related. Csikszentmihalyi (1988) proposed that individual interests can, and sometimes do, stem from continued exposure to topics that are accompanied by stimuli high in situational interest. Renninger (1989; 1990) added that knowledge consists of cognitive representations from previous experience, while value is composed of affective responses

concerning the stimuli present in the environment. These cognitive representations and affective responses develop concurrently and together influence how the individual will react to that subject or that topic in the future. For example, if an individual is listening to a certain song when a positive event occurs, he or she might develop a positive affective response to that song in the future. The cognitive representation would be the memory of the song, while the affective response would manifest itself in feelings of happiness during subsequent contacts with the song. Therefore, a person would develop a lasting preference, or a personal interest, for this song as a result of experiencing the momentary enjoyment, or situational interest.

Renninger (1990) also discussed how classroom teachers can use in-class activities to turn situational interest into personal interest. Activities that are interest-based can be motivating. These types of activities involve attention, persistence, concentration, increased knowledge, and value. From an educational perspective, one would hope that if a classroom, or topic, or activity were high in situational interest, that environment would increase an individual's personal interest level regarding that subject over time. In other words, whereas a teacher may have no control over students' incoming personal interests, that same teacher may be capable of having noticeable influence on the students' outgoing personal interests by the end of a semester or school year. It is important to note that while this hypothesis does have intuitive appeal, this relationship has yet to be tested. As a result, this paper proceeds from the position of interest as being situational in nature.

Manipulating Interest Through Message Characteristics

The majority of the research generated in the area of situational interest can be found under the heading of text-based interest. Text-based interest is considered a specific type of situational interest in the realm of reading (Anderson, Mason, & Shirey, 1984; Hidi & Baird, 1986; 1988). Berlyne (1960; 1974) was one of the earliest researchers to investigate the effect of situationally-bound stimuli on interest. He asserted that interest, curiosity, and exploration are a function of what he termed collative variables. Collative variables are structural characteristics of stimuli. These variables are concerned with the presentation or appearance of stimuli more than the situation that surrounds the stimuli. In other words, collative variables deal with the interestingness of presentation and not the interest that is inherent in the material as it relates to the readers' environment. Collative variables range on continua of familiar-novel, simple-complex, expected-surprising, clear-ambiguous, and stable-unstable (Berlyne, 1974).

Support for Berlyne's assertions of the positive effects of these message characteristics on interest can also be found in the writings of numerous other researchers in this area. Schank (1979) argued that uncertainness and topics such as murder and death generally result in higher interest. Kintsch (1980) and Iran-Nejad (1987) added that the degree to which information is interesting is related to postictability. Postictability refers to the extent that logical attributions can be made for surprising information. Interest in the reader is elicited not only by expectancy violations but also as a result of how well the

information can be related to prior knowledge and how well post-surprise incongruity is resolved.

Hidi and Baird (1986) reported that recall of reading texts was associated with surprising information, goal directed activities, and human interest factors. These results were consistent across situations, even when the interest-provoking segments were not relevant to the main points of the texts. Anderson et al. (1987) suggested that four attributes that may contribute to text-based interest are novelty, character identification, life themes, and activity level. Hidi and Baird (1988) manipulated interestingness of a text to form three experimental conditions. The first was the use of the four strategies outlined by Anderson et al. (1987). An increase in interest was attempted by inserting passages that increase character identification, novelty, life theme, and activity. The second strategy was to add descriptive elaborations concerning main points of the text. The third condition saw the authors attempt to add surprise as outlined by Schank (1979) and Iran-Nejad (1987). The results of this investigation showed that both important and unimportant information was recalled at a significantly higher proportion than that of original text-book writings for all three conditions. Additionally, these differences were apparent for both immediate recall and for delayed recall.

While several studies have explored the positive effects of collative variables on interest and learning, research on seductive details has shown that it is possible for interesting text segments to interfere with recall. Seductive details are defined as highly

interesting but relatively unimportant text segments (Wade, Schraw, Buxton, & Hayes, 1993). Luftig and Greeson (1983) and Luftig and Johnson (1982) argued that these seductive details may be very attractive and actually draw a readers' attention away from segments that are important to the main ideas of the text. Van Dijk and Kintsch (1983) warned that interest caused by surprise leads subjects to perceive information as being more important. Garner, Gillingham, and White (1989), Garner, Alexander, Gillingham, Kulikowich, and Brown (1991), as well as Wade et al. (1993) replicated this finding, adding that seductive details attract a disproportionate amount of readers' attention. Hidi and Baird (1988) added that readers do not recall only important information and forget unimportant information, but they attend to the information that is of interest to them. Additionally, they asserted that interesting anecdotes can interfere with the recall of important information.

The findings discussed in this section are of significance to both researchers and classroom instructors. The research on collative variables and seductive details indicates that interest may be manipulated through message characteristics. This type of interest can either enhance or curtail learning and recall, signifying that it is not enough to create interest in the classroom. Rather, interest should be created in such a way that highlights important ideas.

Creating Interest Through External Manipulation

While much of the study concerning situational interest has focused on message characteristics, there is also a small but emerging body of literature that examines interest from an ecological perspective. Hidi and Baird (1988) addressed this issue when they asserted that interest should be seen as a process rather than as a pre-existing commodity. Interest is the result of how one reacts to a situation or to information of special significance. The significance of certain types of information can vary and therefore lead to different types of information appearing to be of interest. For example, if a student is about to take a biology exam, information about biology will have a special significance to that student. The significance of the information will, in turn, lead that student to have a higher degree of interest in learning about biology. The study of interest from an ecological perspective is consistent with the conceptualizations of Dewey (1916), who believed that the study of interest cannot separate learner from environment.

While message characteristics are important to understand, there is also a need to investigate how the interaction between the learner, instructional activities, and environment affects interest. Schiefele (1991) provided four general strategies for increasing interest. These include promoting student autonomy in the classroom, providing challenging activities, provoking curiosity through discussion or the materials one chooses, and highlighting the functionality of information. The difference between these strategies and what Berlyne (1960) termed collative variables is that Schiefele takes into

account the activity of the learner in the generating of interest. Here, interest is seen as a result of the interaction between the learner and the environment.

Schraw and Dennison (1994) pointed out that Schiefele's suggestions are of particular importance for both researchers and teachers because these strategies are at least partially under our control. Schraw and Dennison posited that situational interest can be seen as a by-product of the readers' purpose for reading, thus, defining a special type of situational interest called purpose-driven interest. There are two different ways of stimulating purpose-driven interest. The first way to generate this type of interest is by schema activation. Schema activation refers to increasing the relative interest in a segment by helping students see the connections of this information to pre-existing knowledge. The impact of prior knowledge on interest was discussed previously in this paper.

A second way to increase purpose-driven interest is to prompt readers to attend to certain types of information based on externally-imposed objectives. Seeing interest in this way allows researchers and teachers to manipulate a student's interest externally. This position is consistent with the conceptualization of Hidi and Anderson (1992) and Krapp et al. (1992).

Schraw and Dennison (1994) conducted three experiments intended to examine whether interest can be increased by external manipulations of reader purpose. By cuing readers as to what types of information are of importance, purpose-driven interest was manipulated via external means. This is important because instead of attempting to

manipulate interest by using different texts or by altering the content within a single text, these experiments changed the purpose for reading a single text. By doing such, it acknowledges the interaction between reader and environment.

Results of these three experiments indicated that segments relevant to subjects' assigned purpose for reading were recalled better than segments that were not. Furthermore, these results were consistent across situations when purpose was assigned either prior to, or following exposure to the text. These findings indicated that the benefits of alerting students to the types of information that are pertinent can be seen at both the encoding and retrieval stages (Schraw and Dennison, 1994).

Measurement and Operationalization Concerns in Interest Research

Schraw et al, (1995) conducted research to further the understanding of what factors influence text interest. The authors created a measure that tapped into six different potential sources of situational interest. These include ease of comprehension, text cohesion (organization and clarity), vividness (containing exciting and vivid details), engagement (thought provoking and stimulating), emotiveness (evoked strong emotions), and prior knowledge. Additionally, they constructed a uni-dimensional scale that measures an individual's perceived interest. They had students fill out these measures following the reading of text material.

The authors found three significant findings as related to the study of interest. Results of their experiment indicated that perceived interest and sources of interest are

related to recall. It was also found that when perceived interest was controlled for statistically, none of the sources of interest were significantly related to recall. Schraw et al. (1995) concluded that this would indicate that the relationship between sources of interest and recall are mediated by perceived interest. This is important to note because it justifies the use of self-report measures to explore the impact of interest on learning and recall.

The last significant outcome of this investigation was the development of the two measures, the sources of interest questionnaire and the perceived interest questionnaire. In particular, the perceived interest questionnaire appears to be a well constructed, scientific measure of interest as a construct. The perceived interest questionnaire, when factor analyzed, proved to be a uni-dimensional scale with good reliability (alpha level .91). For the sake of measurement, this is the first necessary step in the delineation of the components of interest.

In his discussion of situational interest Mitchell (1993), like most other researchers in this area, asserted that situational interest is a multifaceted variable. However, his approach to defining the factors that compose interest is slightly different from that of Schraw et al. (1995) and Tobias (1994). He termed these two components of situational interest "catch" and "hold" (p. 425). Catching an individual's interest consists of finding different ways to stimulate students. Mitchell defined a stimulant as a variable that temporarily increases the activity of an organism. Alternatively, holding someone's

interest is a function of variables that empower students.

Drawing on the work of Berlyne (1960, 1966) and Malone and Lepper (1987), Mitchell (1993) stated that there exist two kinds of stimulation. The first is a sensory stimulant which was defined by Malone and Lepper (1987) as "the attention-attracting value of variations and changes in the light, sound, or other sensory stimuli of an environment" (Malone & Lepper, 1987, p.235). The second type of stimulant is a cognitive stimulant. Cognitive stimulation occurs because of the inherent drive within all people to bring good form to their cognitive structures. Furthermore, Mitchell stated that it is this natural drive that we as educators may use to stimulate interest by allowing people to believe that these cognitive structures are not yet well formed. In other words, Mitchell has asserted that teachers need to be concerned with the cognitive stimulation of students. As a result of this statement, sensory stimulation is neglected in the following discussion of student situational interest.

As previously stated, holding interest is a function of variables that empower students. The term empowerment here refers to the granting of power to others so that they might reach some end or purpose. Mitchell (1993) proposed two ways in which to empower students. He first suggested to make material meaningful to the learners and second, to increase student involvement. Involvement refers to the degree to which the students feel they are active participants in the learning process. It is believed that by empowering students it will hold their interest because even when the source of

empowerment is removed, the student will likely still find the subject matter of value.

While Mitchell's (1993) approach to defining interest is slightly different than the commonly accepted definitions of interest, conceptually it bears a striking resemblance. Mitchell believed that interest consists of two components, referred to as catch and hold. To catch interest we can use either sensory or cognitive means. Catching students via the cognitive route entails instructors utilizing the inherent drive within students to bring order to pre-existing cognitive structures. This description resembles what Schraw and Dennison (1994) referred to as schema activation. A schema may be defined as a pre-existing cognitive structure. In other words, cognitive stimulation, or the cognitive catch component of the Mitchell interest model, consists of utilizing prior knowledge through schema activation (see Table 1).

Holding a person's interest rests in the meaningfulness of the material and the involvement of students in the learning process. Meaningfulness and involvement, according to Schiefele (1991), are what constitute the value-related component of interest. Schiefele wrote that "presumably some objects are preferred because involvement with them creates strong feelings of excitement, whereas other objects are preferred mainly because of the high personal meaning they have for people" (p.303). In other words, the value one finds in an object is determined either by the extent that it involves the learner or as a result of the object's meaningfulness (Table 1).

Table 1
Relationship of Interest Vocabulary Organized by the Mitchell (1993) Model

I. Interest

A. Personal (long-term, trait-like preferences)

B. Situational (short-term, state-like arousal)

1. Catch (Mitchell, 1993)- may also be thought of as gaining interest

a. Sensory Stimulation- changes in light, sound, temperature, etc...

b. Cognitive Stimulation- may also be called schema activation (Schraw and Dennison, 1994), prior knowledge (Tobias, 1994), or feelings of competence (Schiefele, 1991)

2. Hold (Mitchell, 1993)- may also be thought of as keeping interest- has also been termed value (Schiefele, 1991; Tobias, 1994)

a. Meaningfulness (Mitchell, 1993; Schiefele, 1991)

b. Involvement (Mitchell, 1993; Schiefele, 1991)

Although Mitchell is using a different vocabulary, his conceptualization of situational interest is similar to that of other researchers in this area. He is in essence referring to interest as being composed of knowledge (what he terms the cognitive catch component) and value (the hold component). The usefulness of this model is found in his discussion of how catch and hold are delineated into more practical and measurable parts (Table 1).

The results of the study conducted by Mitchell (1993) supported his theoretical model. It was found that situational interest is a multidimensional construct. The factor structure of his measurement device indicated both meaningfulness and involvement dimensions. While these dimensions were not isomorphic, they also were not orthogonal. The strength of the relationship that exists between these two measures would indicate that there exists a higher-order factor structure. This factor can be referred to as either hold or value.

As for the catch component, Mitchell (1993) asked students questions concerning computers, puzzles, and group work. This was the result of open ended questions indicating that students enjoy these activities in a classroom environment. The questions were intended to represent variables that resulted in cognitive stimulation. While he found the expected results, this technique of assessing cognitive stimulation raises some questions.

The computer, puzzle, and group work measures would seem to assess how much people enjoy those things in particular. Answers to questions such as these may be more skill dependent than interest. A more theoretically-sound way of measuring the cognitive catch phenomena of Mitchell's model might be to assess students' perceptions of prior knowledge or competence concerning a topic or activity at hand. This would increase the generalizability of the cognitive catch. For instance, if a student feels competent or has some prior knowledge with computers, puzzles, and/or group work, the opportunity to do

so in an instructional setting would catch his or her interest. This in turn would be revealed in the score on a measure of competence. Similarly, if a student felt competent or had some prior knowledge about dinosaurs and was given the opportunity to relate that knowledge to the rest of the class, this might also be a situation that would prove to catch his or her interest. Again, this would be revealed in the individual's score on a measure of competence. At the same time, this catch of interest would be overlooked if we used Mitchell's criterion and were simply asking questions about computers, puzzles, and group work.

At this time, it may prove useful to turn our attention back to Mitchell's (1993) assertion, reported earlier, concerning the establishment of construct validity for interest. Mitchell reported that before we can understand the usefulness of interest we must first conduct investigations into its construct validity. The first step in assessing construct validity is what Mitchell called with-in network studies. What is necessary in these types of investigations can be broken into three parts. The first calls for the formulation of a clear definition of interest. Based on the preceding review of the literature, it would seem that we have an acceptable working definition of interest. Interest is composed of knowledge and value.

The second goal of with-in network studies is to delineate what, if any, sub-components are present within the interest construct. Mitchell's (1993) theoretical model that utilized the catch and hold aspects of interest has furthered our understanding of what

is value and what is knowledge. The third and final reason for with-in network studies is the construction of measurement instruments that clearly reflect the intricacies of these components. This appears to be where interest research is at this point in time. The perceived interest questionnaire constructed by Schraw et al, (1995) appears to be an important beginning in an attempt to accurately measure interest. With this questionnaire, researchers have at their disposal a reliable way to measure an individual's perceptions of their interest.

Using the steps put forth by Mitchell (1993), the next step in interest research is to develop measurement techniques that accurately tap into the dimensions of the interest construct. What interest researchers need is a way to delineate the relative effects of knowledge and value in interest. This assertion finds support in the writings of Tobias (1994). He proposed that future investigations into interest should be accompanied by a measure of prior knowledge. This would allow the relative effects of knowledge and value to be partialed out. The benefit of this would be to gain a better understanding of how much variance each contributes to interest findings.

Mitchell (1993) attempted to construct a measure that would achieve this. In addition to the concerns raised earlier regarding the cognitive catch or prior knowledge portion of his questionnaire, there are additional concerns about the hold or value segment. Specifically, there are two main concerns. The first deals with the items that compose the meaningfulness and involvement sub-scales. The two scales consist of four and six items,

respectively. The small number of items coupled with item similarity raise certain questions about their generalizability. For example, "The stuff we learn in this class will never be used in real life" and "I will never use the information in this class again" are both items on the meaningfulness scale. Since there are only four items on this scale and two of them are so similarly worded, it is questionable as to whether this scale can accurately measure all the facets of the construct (content validity).

The second concern deals with the procedure in the factor analysis that was performed. It may have been more useful to conduct the factor analysis with individual items, as is more commonly done, rather than use item pairs as variables. What follows in the next section is a suggestion for what might be a more useful and valid measure of interest. This suggestion is based on the theoretical dimensions of interest as proposed by the scholars in that area.

Learner Empowerment

The present concerns in the area of interest research may direct one to the field of instructional communication. Frymier, Shulman, and Houser (1996) attempted to draw on the body of knowledge that exists under the heading of the learning organization in an attempt to transfer these ideas to the educational context. It is not uncommon for organizational constructs to be applied to the classroom context. Richmond, McCroskey and colleagues utilized French and Raven's (1959) conceptualization of power to conduct a series of studies concerning teacher behavior in the classroom (Kearney, Plax,

Richmond, & McCroskey, 1984; Kearney, Plax, Richmond, & McCroskey, 1985; McCroskey & Richmond, 1983; McCroskey, Richmond, Plax, & Kearney, 1985; Plax & Kearney, 1992; Plax, Kearney, McCroskey, & Richmond, 1985; Richmond & McCroskey, 1984; Richmond, McCroskey, Kearney, & Plax, 1984).

Within the learning organization there is a premium placed on the accumulation of new knowledge. New knowledge is considered to be the best source of competitive advantage for profit-oriented companies. An organization's ability to learn faster than its competitors is viewed as the only sustainable source of advantage available in the marketplace. An organization must anticipate the next appropriate move before their opponents do. In order to do this, it is believed that the organization must have certain characteristics. One of these characteristics is empowered employees. Empowered individuals are motivated to perform tasks and have a level of control over those tasks that is valued by both the individuals and their employers. It is believed that learning organizations require an energized and committed work force with empowered employees who learn to act in the interest of the organization itself (Frymier et al., 1996). Senge (1994) asserted that it is this empowered work force that creates a learning organization because it is people and not organizations that are responsible for learning.

It is the connection between empowerment and learning that led Frymier et al. (1996) to hypothesize about its relevance in the classroom. The authors wrote:

> We support this extension of the application of the quality paradigm from service and manufacturing organizations to education. This extension

> assumes that all organizations, be they educational, governmental, or business, share many common characteristics and process. We do not deny that there are many differences between classrooms and other organizations; however, teachers act as managers of the classroom, responsible for directing and guiding students' behavior just as managers are responsible for directing and guiding subordinates' behavior (p.181).

This comparison between the structure and dynamics of the classroom and the organization helps illustrate the generalizability between these two contexts. It is the responsibility of teachers and managers to help their students and subordinates to learn and grow.

Frymier et al. (1996) lend further support for the usefulness of empowerment within the educational context by adding that empowerment is conceptualized as a motivation-based construct that can exist as either a trait or a state. It is this motivational base of empowerment that the authors believe make it as germane to the teacher-student relationship as it is to the manager-employee relationship. This assertion finds support in the writings of Shulman, McCormack, Luechauer, and Shulman (1993). They suggested that faculty may empower students by creating conditions that sustain student commitment to producing high-quality work.

This review is concerned with the similarity in the conceptualization of learner empowerment to that of situational interest. Thomas and Velthouse (1990) defined empowerment as consisting of four dimensions. The first dimension, meaningfulness, considers the value of a task in relation to one's own beliefs. The more a task resembles or has meaning for an individual's value system, the harder that person will work on the completion of that task. On the other hand, if a task is not deemed to be meaningful, either

now or at some future time, a student is less likely to be motivated to generate high-quality work.

The second dimension, competence, conveys an individual's feelings concerning his or her cognitive capabilities or behavioral repertoire. Feelings of empowerment are diminished when individuals feel that they are unable to reach a certain goal. The third dimension, impact, signifies that the completion of a task or achieving of a goal will make a difference (Thomas & Velthouse, 1990). An applicable example of this is the anecdote of the two sanitation workers. One sanitation worker did not like his job very much and when questioned as to why, he responded that no matter what he does there is always more garbage to take away. The other sanitation worker enjoyed his job and when questioned as to why, he replied that he had a very important job. If the garbage was not taken away on time it would pile up and the town would become infested with rodents. This second sanitation worker felt that he made an impact by doing his job. This is part of empowerment. The more impact individuals believe they have, the more empowered they will feel. These feelings of empowerment will subsequently manifest themselves in behaviors that are classified as being motivated. The last theoretical dimension of empowerment is choice. Choice refers to the degree to which persons self-determine their task goals and the methods for accomplishing them (Thomas & Velthouse, 1990). Thomas and Velthouse predict that greater choice contributes to feelings of increased empowerment.

A comparison of the theoretical conceptualizations of learner empowerment and situational interest indicates that these two variables are virtually synonymous. It would appear that three of the four theoretical dimensions of empowerment are also components of interest. The first similar dimension is meaningfulness. Meaningfulness is a component in both learner empowerment and situational interest. The second similar dimension is what Frymier et al. (1996) referred to as the impact component of learner empowerment. According to Frymier et al., impact is the belief that the completion of a task or achieving of a goal will make a difference in the educational process. This conceptualization of impact closely resembles that of the interest dimension that Mitchell (1993) referred to as involvement. Involvement alludes to the degree to which the students feel they are active participants in the learning process. The similar definitions of involvement and impact point to the overlap of these two ideas. As for the third similar dimension, if you allow, as do Mitchell (1993) and Schiefele (1991), that cognitive stimulation may be caused by feelings of competence, these two dimensions tap into the same quality. Feelings of competence and cognitive stimulation result from schema activation through the use of prior knowledge (Table 1). Taking the correspondence between these three dimensions into account, the similarities between learner empowerment and situational interest becomes apparent.

At this time it would seem advantageous to point out that these four theoretical dimensions of learner empowerment were just that. Preceding the studies conducted by

Frymier et al. (1996), there were no data to support the existence of these dimensions in a classroom setting. These were four dimensions postulated by Thomas and Velthouse (1990) in their study of employee empowerment. Furthermore, there existed no measure that was capable of tapping into these dimensions.

The first of the two studies that were conducted by Frymier et al. (1996) used the Schultz and Shulman (1993) measure of job empowerment. The items on the scale were reworded so as to reflect the educational organization. The findings of this study indicated that empowerment was positively related to constructs such as relevance, teacher immediacy, and state motivation. Additionally, three of the four dimensions of empowerment appeared as a result of factor analysis techniques. The one dimension that failed to materialize was that of choice.

The authors reasoned that choice may not have emerged as a factor because Thomas and Velthouse (1990) were thinking of employees when conceptualizing empowerment, and not students. Choice may not be as applicable to the classroom context. Usually, student "job" requirements are set in the syllabus which describes assignments, grading criteria, and rules for class (Frymier et al., 1996).

While three dimensions of learner empowerment did appear, upon further review Frymier et al. (1996) brought the content validity of the scale into question. The issue at hand was that some of the items represented "feeling empowered" while others represented "being empowering." The distinction is that empowered is a state of being while

empowering is something that you do to someone else. It is this idea of "being empowered" that is of concern to educational researchers.

The purpose of the second study was to refine the learner empowerment measure and further establish its validity and reliability. Additional items were written for the learner empowerment measure, and old items were rewritten to focus on feeling empowered. It is interesting to note that choice items were again included to make another attempt at discerning the existence of a fourth dimension. Results of this second study were similar to the first. Empowerment was positively related to relevance, teacher immediacy, learning (both affective and behavioral), and state motivation. Also, as in the first study, three of the four dimensions of empowerment appeared as a result of factor analysis techniques. The one dimension that failed to materialize was again that of choice. Empowerment appears to be multidimensional with the resulting three factors being correlated. This was consistent with Thomas and Velthouse (1990) and would indicate the existence of a super-ordinate factor structure.

The similarities between interest and learner empowerment are quite remarkable. They both appear to be multi-dimensional. According to Schiefele (1991) and Tobias (1994), interest is the combination of the meaningfulness of material, the involvement of the learner with the material, and the learner's prior knowledge of the subject matter. Similarly, according to Frymier et al. (1996), learner empowerment is the combination of the meaningfulness of material, the impact that the learner has on tasks, and feelings of

competence associated with the activity. It is believed that the dimensions of both interest and learner empowerment are summative, representing a super-ordinate factor structure. Both interest and learner empowerment may exist as either a trait or a state, and each is considered to be a motivation-based construct. The next question for researchers is to test for isomorphism.

If the Frymier et al. (1996) construct of learner empowerment is actually a measure of interest, this could have important ramifications for future interest research. Tobias (1994) called for the collection of data on prior knowledge in subsequent interest research so that we may gain a better understanding of its relative effects on interest findings. Given that we now have a reliable and valid measure of what Frymier and colleagues (1996) referred to as learner empowerment and, that we also have a reliable and valid measure of self-perceived interest (Schraw et al., 1995), it would seem that testing for isomorphism would be the next step. Additionally, since both learner empowerment and situational interest are hypothesized to be related to environmental stimuli, the logical extension of this would be to continue to search for instructional stimuli that might effect interest or empowerment. Frymier et al. (1996) suggested that:

> learner empowerment is situational in nature and that the class environment can affect it. Of course, one important part of the class environment is the teacher. The finding that teacher immediacy and relevance behaviors have a significant and positive relationship with learner empowerment further reinforces the practical utility for teachers to use those behaviors (p. 197).

This statement would indicate that students' level of empowerment, or interest, is

influenced by how teachers manage their classrooms. This assertion is supported in the process-product paradigm of teaching. The following section of this text introduces the process-product research and continues to discuss the line of research that was referred to earlier in this paper conducted by Richmond and McCroskey and colleagues. This area of research is concerned with teachers' use of power in their classrooms and their utilization of behavior alteration techniques.

Teacher Behavior

The idea that teacher behavior impacts student learning is not unique in the area of instructional research. Investigations concerning the impact of instruction characteristics on students are at least forty years old (Gage, 1994; Garrison & Macmillan, 1994). The process-product paradigm of instruction has increased educators' understanding of just how instruction variables can enhance or, for that matter, detract from student achievement. Process-product research, or what has also been referred to as process-outcome research has been defined by Gage (1994) "as that aimed at the discovery of relationships between what goes on in the classroom and student achievement of educational objectives, such as knowledge, intellectual skills, and certain kinds of attitudes and conduct" (p.372).

The term process-product in itself is revealing about the relationship between instruction and learning. The process refers to teacher behavior and educational techniques in instruction. The product alludes to that which is attained by the learner. In

short the process-product paradigm asserted that there is a direct correlation between instructional practices (process) and learning outcomes (product). Research in this area attempts to arrive at claims concerning relationships between these variables. The result of which can be useful in explaining, predicting, and improving the effects of teaching on student outcomes (Gage, 1994).

The effect of teacher behavior on student learning is the subject of research conducted by Richmond and McCroskey (1983). Building on the French and Raven (1959) research on power, McCroskey and Richmond, who were later joined by Kearney and Plax, produced an ancestry of literature in the instructional field known as the Power in the Classroom series (Kearney et al., 1984; Kearney et al., 1985; McCroskey et al., 1983; McCroskey et al., 1985; Plax et al., 1992; Plax et al., 1985; Richmond et al., 1984; Richmond et al., 1984).

Power in the Classroom was a series of studies that explored different techniques teachers may use to manage classrooms properly. These strategies were based on French and Raven's (1959) description of the five bases of power. Power can be defined as a person's ability to have an effect on the behavior of another person or group (Kearney et al., 1984; Kearney et al., 1985). The bases of power are different strategies or tactics that people use to affect the behavior of others.

According to French and Raven (1959), there are five of these bases of power. The five bases are known as reward, coercive, legitimate, referent, and expert power. Reward

power occurs when an individual grants power over him or herself to another due to the perception that the other has something of worth to give. For example, performing a task for a teacher in hope of receiving a good letter of recommendation is an illustration of reward power. Coercive power is often thought of as the flip side of reward power. This occurs when one grants power based on the perception that someone else can do something bad to us. Studying for a test or doing homework for fear of a bad grade is an instructional example of this type of power. The third power base is called legitimate or assigned power. Here, a person grants power over him or herself because it is felt that the other person has the right to tell others what to do. This right is based on the other person's title or rank. When people complete tasks simply because a teacher, boss, or parent has told them to do so, this is an illustration of legitimate power. Referent power is exercised when persons grant power over themselves because of the relationship they have, or would like to have, with the source. If a friend asks another individual for a favor and he or she does it because "friends help each other," then referent power is being utilized. Finally, the last base of power is called expert power. In this instance power is granted as a result of the perception that the source is knowledgeable or is an expert concerning the topic at hand.

The major finding in the Power in the Classroom series was the expansion of the French and Raven (1959) bases of power into a typology of teacher behavior alteration techniques (Kearney et al., 1985). There are 22 behavior alteration techniques in all.

These behavior alteration techniques are strategies that teachers utilize in the instructional setting while dealing with students.

Furthermore, Richmond and colleagues found that the use of different behavior alteration techniques had varying impacts on student achievement. The use of behavior altering techniques that stem from the reward, referent, and expert power bases had positive effects on student learning (cognitive and affective) and motivation toward studying course content. Conversely, the use of behavior altering techniques that stem from the coercive and legitimate power bases had a negative effect on student learning (cognitive and affective) and motivation toward studying course content.

While the use of behavior alteration techniques has been shown to impact student learning and motivation, the explanation for this effect is not known. In an attempt to better understand the nature of this relationship, it may prove useful to re-introduce some of the ideas presented in the discussion of situational interest and learner empowerment. Mitchell (1993) discussed interest in terms of catch and hold. The catch component is derived from either sensory or cognitive stimulation. The hold aspect deals with either the meaningfulness or involvement of the information with relation to the learner. Frymier et al. (1996) asserted that learner empowerment was the sum of three factors, meaningfulness, impact, and competence.

Keeping these ideas concerning interest and empowerment in mind, a review of the individual behavior alteration techniques provides some insight into the nature of the

behavior alteration--student achievement relationship. Many of the behavior alteration techniques seem to resemble ways in which teachers can increase situational interest or student empowerment. To illustrate, the behavior alteration techniques of deferred reward from behavior, reward from others, altruism, self-esteem, and personal responsibility appear to resemble tactics to make information either have more meaning to the learner, involve the learner to a greater degree, or increase the competence of the learner. It is likely that the effects of behavior altering techniques are mediated through situational interest.

Rationale

The preceding review of the literature has revealed a number of questions concerning the relationship between interest, learner empowerment, teacher behavior, and real-life classroom situations. A goal for education is to develop long-term personal interests in students. It is supposed that one route to the development of personal interest is through sustained and repeated experiences to objects while situational interest is being aroused. The first question concerns the nature of the interest and empowerment relationship. Mitchell (1993) saw interest as being composed of two factors, catch and hold. Catching one's interest can be achieved using two different strategies. The first is through sensory stimulation. Changes in light, sound, movement and the like are ways that one's interest is caught through sensory stimulation. The second way to catch an individual's interest is through cognitive means. Stimulating pre-existing cognitive structures, or what may also be termed schemata, results in cognitive stimulation.

As with the catch component, Mitchell (1993) suggested two methods of holding interest. The first is to make material meaningful to the students. If a student grasps utility in the information, it will help to hold the student's interest. The second way to hold attention is to increase involvement. Involvement refers to the degree to which the students feel they are active participants in the learning process. If students feel their participation or completion of a task makes a difference, they are likely to feel more interested in that particular activity.

While his vocabulary is slightly different, the conceptualization of interest that Mitchell (1993) presented is similar to that of other researchers in this area (Hidi, 1990; Schiefele, 1991; Tobias, 1994). This view holds that interest is made of a cognitive and affective component. Mitchell (1993) asserted that it is this affective component of interest that empowers students. In other words, the perceptions of meaningfulness or personal involvement give students a feeling of power so that they may reach some end or purpose.

Here we see that according to Mitchell (1993), empowerment does not contain a cognitive component. Furthermore, it is only one of the necessary steps in increasing student interest. This differs from the Frymier et al. (1996) conceptualization, and subsequent operationalization of learner empowerment. The Frymier et al. view of empowerment not only consists of this affective component but also includes a measure of perceived competence. An important distinction that begs to be made is that the Frymier et al. (1996) feelings of competence factor does not directly measure the amount or

accuracy of prior knowledge as discussed by Tobias (1994). This factor instead measures one's perceptions of prior knowledge. While this could also be seen as affectively related, any such response would be dependent on schema activation, and therefore related to cognition.

With this in mind the Frymier et al. (1996) learner empowerment construct bears a striking resemblance to that of interest. In fact, they are so similar, it may be safe to assert the two are conceptually the same. If this is true, the mere fact that there is a reliable measure that accurately taps into the different dimensions of interest would allow educators to take the next step in researching the effects of interest.

To test for construct isomorphism, the Frymier et al. (1996) learner empowerment scale must be correlated with another reliable and valid measure of interest. One possibility is the Schraw et al. (1995) perceived interest questionnaire. The scale is unidimensional, with strong reliability and evidence of content and criterion validity. The benefit of demonstrating a close relationship between the learner empowerment and the perceived interest questionnaire would be to allow researchers to answer the calls of Tobias (1994) and Mitchell (1993). Tobias wrote that in future interest research, measures of prior knowledge should be collected so that its effects can be partialed out of interest findings. This would enable us to gain a better understanding of the importance of each dimension of interest. If the Frymier et al. (1996) scale is truly a measure of interest, then the competence subscale would allow researchers to statistically control for perceptions of prior knowledge.

Additionally, while discussing the establishment of construct validity, Mitchell (1993) proposed three goals that must be met. The first is a clear definition of the construct. Interest is defined as perceptions of value and knowledge. The second and third goals deal with differentiating between any sub-components of the construct and developing measures that accurately depict the intricacies of these sub-components. Again, the Frymier et al. (1996) learner empowerment scale would prove useful in achieving the second and third goals forwarded by Mitchell. These arguments lead to the first research question.

> RQ1: What is the relationship between the Frymier et al. (1996) learner empowerment measure and the Schraw et al. (1995) perceived interest questionnaire?

The review of the pertinent literature concerning learner empowerment and situational interest lead to the following hypothesis.

> H1: The summative factor structure, as well as the three sub-scales of the Frymier et al. (1996) learner empowerment measure, will achieve significant and positive correlations to the Schraw et al. (1995) perceived interest questionnaire.

The results of this hypothesis can help clarify the content validity, or Mitchell's (1993) with-in network studies of the empowerment measure as interest. To further establish the validity of the empowerment measure as interest, criterion validity must be established. Mitchell calls these types of investigations between network studies. The question of

concern is, how is interest or empowerment related to other known constructs.

One such construct thought to be related to interest is motivation. Schiefele (1991) writes that the relationship between interest and motivation is so strong that interest has wrongly become a lay term for internal motivation. Other researchers have proposed that interest can be seen as motivator. Here interest is seen as something that increases motivation (Skinner & Belmont, 1993; Stipek, 1996; Tobias, 1994). If the empowerment as interest argument is valid, correlations achieved between motivation and empowerment should not be significantly different from those achieved between motivation and perceived interest. This leads to the following research question and hypotheses.

RQ2: Will the relationship between the Frymier et al. (1996) learner empowerment and motivation be different than the relationship between the Schraw et al. (1995) situational interest and motivation?

H2: The correlation between the summative factor structure of the Frymier et al. (1996) learner empowerment measure and motivation, as measured by the motivated strategies for learning questionnaire (Pintrich et al., 1993) will not be significantly different than the correlation between the Schraw et al. (1995) perceived interest questionnaire and motivation, as measured by the motivated strategies for learning questionnaire (Pintrich, et al., 1993).

H3: The correlation between the summative factor structure of the Frymier et al. (1996) learner empowerment measure and motivation, as measured

by the Duda and Nicholls (1992) classroom goal orientation scale, will not be significantly different than the correlation between the Schraw et al. (1995) perceived interest questionnaire and motivation, as measured by the Duda and Nicholls (1992) classroom goal orientation scale.

The studies conducted by Frymier et al. (1996) indicated that the empowerment measure is positively related to a global measure of motivation. The authors make no attempt at distinguishing between internal or external motivation. This lack of clarity between the relationship of empowerment to the different types of motivation lead to the next research question.

RQ3: What is the relationship between learner empowerment and the different types of motivation?

While Mitchell (1993) did not explicitly discuss predictive validity, it may be implied that references to between-network studies include investigations dealing with the predictive power of a construct. It is believed that teacher behavior has an impact on students' classroom performance. The process-product literature supports this idea. Teacher behavior is seen as the process, while student outcomes are the product. Process-product research is directed at illuminating the relationship between these types of variables (Gage, 1994). Additionally, the research done by Richmond and colleagues illustrates that teacher behavior impacts student learning (both cognitive and affective) and motivation. This leads to the next research question and subsequent hypotheses.

RQ4: What is the relationship between the Kearney et al. (1984) behavior

alteration techniques and the Frymier et al. (1996) learner empowerment measure?

H4: The summative factor structure, as well as the three sub-scales of the Frymier et al. (1996) learner empowerment measure should yield positive relationships with the pro-social Kearney et al. (1984) behavior alteration techniques that stem from reward, referent, and expert power.

H5: The summative factor structure, as well as the three sub-scales of the Frymier et al. (1996) learner empowerment measure, should yield negative relationships with the anti-social Kearney et al. (1984) behavior alteration techniques.

These hypotheses and research questions are concerned with the relationship of empowerment, interest, and teacher behavior in a theoretical sense. These proposed relationships are summarized in Table 2. In Table 2 "h+" represents a proposed high-positive relationship between the two corresponding measures. The symbols "+" and "-" represent either low to moderate positive or negative relationships. The symbol "O" represents a zero correlation is proposed.

Table 2
Proposed Relationships Between Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13
1.Interest	x	h+	h+	h+	h+	+	-	+	+	+	+	+	+
2. L. Emp.	x	x	h+	h+	h+	+	-	+	+	+	+	+	+
3. Meaning	x	x	x	h+	h+	+	-	+	+	+	+	+	+
4. Impact	x	x	x	x	h+	+	-	+	+	+	+	+	+

Table 2
Proposed Relationships Between Variables

5. Comp	x	x	x	x	x	+	-	+	+	+	+	+	+
6. BAT (+)	x	x	x	x	x	x	0	+	+	+	+	+	+
7. BAT (-)	x	x	x	x	x	x	x	-	+	-	-	-	-
8. MSLQ (Int.)	x	x	x	x	x	x	x	+	+	+	+	+	+
9. MSLQ (Ext.)	x	x	x	x	x	x	x	x	x	+	+	+	+
10. MSLQ (Value)	x	x	x	x	x	x	x	x	x	x	+	+	+
11. Class Goal (t)	x	x	x	x	x	x	x	x	x	x	x	+	+
12. Task Orient.	x	x	x	x	x	x	x	x	x	x	x	x	+
13. Ego Orient.	x	x	x	x	x	x	x	x	x	x	x	x	x

CHAPTER 2

Method

Participants

The participants for this study were drawn from a convenience sample of 209 college students from a large mid-Atlantic university. The average age of the sample was 21.4 with a range of 18-43. There were 104 males and 103 females with 2 non-reports. Additionally, there 27 freshman, 40 sophomores, 71 juniors, 70 seniors, and 1 non-report in the sample. A power analysis revels that with this number of subjects the likelihood that a null hypothesis would be erroneously accepted with a correlation of .30 is less than 1% (Cohen, 1988).

A measure of prior knowledge was included in the demographic portion of the questionnaire packet. Prior knowledge was assessed with one question, "How many previous courses have you taken in this subject area." Participants reported an average of having taken 2.3 courses in that subject area previously. Results of a Pearson correlation analysis showed that participants responses to this question were not significantly related to scores on the empowerment measure ($r=.05$, $p>.05$) or its subscales (meaningfulness $r=.07$, $p>.05$; impact $r=.01$, $p>.05$; competence $r=.04$, $p>.05$). As a result, this question was not included in any further analyses.

Procedure

Participants completed a questionnaire packet that included the behavior alteration

technique topology, learner empowerment measure, perceived interest questionnaire, motivated strategies for learning questionnaire, and the classroom goal orientation scale. Additionally, immediately following these scales were the demographic questions. All questionnaire packets were presented in this order. Participants were asked to respond to the questionnaires as they pertain to the class and teacher they have immediately preceding the one they are in now. The questionnaire packets were distributed in two introductory communication courses at a large mid-Atlantic university. Participants received extra credit for their participation and were given twenty minutes to complete the packets in class. The research procedures were conducted in accordance with guidelines for research with human participants (American Psychological Association and the institution involved).

Measures

The main concern for this study is the strength of the relationship between learner empowerment and interest. Interest was measured by the Schraw et al. (1995) perceived interest questionnaire. The perceived interest questionnaire has proved in the past to be a reliable (alpha of .91), unidimentional, 10-item scale. This instrument has been shown to be positively and significantly related to sources of interest and recall (Schraw et al.,1995). In the current investigation the perceived interest questionnaire attained an alpha of .96 as a rating of internal reliability. It should be noted that the procedure for administering the perceived interest questionnaire has been altered in this study. Past research using the

perceived interest questionnaire has focused on text-based interest and not interest as it is being defined here. Previously, subjects were given passages of text to read and then were administered the perceived interest questionnaire. These participants were then instructed to respond to the items based on their feelings of interest while reading the passage. For the purposes of this investigation, participants were asked to respond to the items based on their feelings of interest in a classroom setting.

Learner empowerment was measured using the Frymier et al. (1996) learner empowerment measure. This is a three-dimensional scale with a superordinate factor structure. Summative scores on the learner empowerment measure have been found to have significant and positive relationships with measures of immediacy, relevance, self-esteem, affective learning, behavioral learning, and state motivation. All three subscales (meaningfulness, impact, and competence) have exhibited the same pattern of results as the summative scale. In addition, the learner empowerment scale and the three subscales (meaningfulness, impact, and competence) have achieved adequate alphas as a measure of internal reliability (.89, .94, .95, .92 respectively) (Frymier et al., 1996). For the purposes of the current project, the learner empowerment measure achieved an alpha of .93 while the three sub-scales, impact, competence, and meaningfulness, achieved alphas' of .88, .92, and .91 respectively.

Teacher behavior was assessed by the Kearney et al. (1984) behavior alteration techniques topology. This topology consists of 22 behavior alteration techniques that

teachers use in managing their classrooms. The 22 behavior alteration techniques are representative of the French and Raven (1959) bases of power. In previous investigations the pro-social behavior alteration techniques (stemming from referent, expert, and reward power) have achieved significant positive correlations with affective and cognitive learning. On the other hand, the anti-social behavior alteration techniques (which include negatively worded items from reward, and referent power, as well as those that stem from the coercive and assigned bases of power) have been shown to be negatively related to both cognitive and affective learning (Plax & Kearney, 1992).

It has been argued that the responses to the individual behavioral alteration techniques may be summed to create a two-dimensional scale. In this case, the two dimensions would be the pro-social and anti-social behavior alteration techniques (Kearney, 1994; Kearney, Plax, Sorensen, & Smith, 1988). In the current investigation, the behavior alteration techniques measure were treated as a topology, meaning that the responses for each technique was used for analysis and not summed. The reason for this is more practical than theoretical. If a teacher was to use the behavior-alteration technique of altruism and the students responded to this, there would be no need to use another technique. In this instance, if the responses were summed to create a two dimensional scale, this instructor would appear to be low on each subscale. What one could then infer based on these results is that the instructor in question does not make an effort to manage his or her classroom effectively. Obviously, in this example that would not be the case.

On the other hand, using the behavior alteration techniques measure as a topology, as it was originally conceptualized, we could see that the instructor is repeatedly using this one pro-social technique on the students.

Motivation was measured in two ways. The first measure of motivation was the intrinsic goal orientation, extrinsic goal orientation, and task value sub-scales from the motivated strategies for learning questionnaire (MSLQ) (Pintrich, et al., 1993). The MSLQ is based on a general social-cognitive view of motivation, where the student is seen as an active processor of information. In past research, the MSLQ was found to be positively related to academic performance. Additionally, it has also been reported that the task value subscale has shown to be the best predictor of class grade (Pintrich et al., 1993). This has strong implications for the role of interest in assessing performance and motivation. With task value being one of the components of the MSLQ, there is a logical link between studying student motivation along with interest. The intrinsic goal orientation and extrinsic goal orientation sub-scales measure students' motivations for why they are engaging in a learning task. The question of importance for these two measures is why a student is completing a task. The task value sub-scale of the MSLQ refers to the student's evaluation of how interesting, important, and useful the class is. The intrinsic goal orientation, extrinsic goal orientation, and task value sub-scales are composed of 4, 4, and 6 items and in the past have achieved reliability alphas of .74, .62, and .90 respectively. In the present study, the respective sub-scales attained reliabilities of .80,

.80, and .93.

The second method for measuring motivation was through the task and ego orientations sub-scales of the Duda and Nicholls (1992) classroom goal orientation measure. Research has found that students' goal orientations to be consistent with their beliefs about how success is achieved. The first goal orientation, task goal orientation, holds a belief that the goal to school is the improving of one's skill or gaining knowledge. Task orientation is generally associated with the belief that success requires interest, effort, and collaboration. Conversely, ego goal orientation is defined by the goal of proving one's superiority over others by demonstrating high ability, often with little effort.

The question of importance for these measures is when do students feel successful. Each sub-scale is composed of 8-items and has achieved reliability alphas of .89 or better in past research. In the present investigation the ego-orientation sub-scale attained an alpha of .92 while the task sub-scale had an alpha of .87. It should be noted that in previous investigations this measure has been used to measure individuals trait orientations towards school. For the purposes of this investigation, participants were instructed to respond to the items as they pertain to a specific course. Measurement characteristics as well as results of previous findings for all instruments are summarized in Table 3. Copies of the instruments are included in Appendix A.

Table 3
Internal Consistency and Predictive Validity of Measures

	Reliability (alpha)	Validity
Interest	.91 (Schraw, et al., 1995)	(+) sources of interest, recall (Schraw, et al.,1995)
Learner Emp.	.89 (Frymier, et al., 1996)	(+) affect, motivation, learning, & immediacy (Frymier, et al., 1996)
Meaningfulness	.94 (Frymier, et al., 1996)	(+) affect, motivation, learning, & immediacy (Frymier, et al., 1996)
Impact	.95 (Frymier, et al., 1996)	(+) affect, motivation, learning, & immediacy (Frymier, et al., 1996)
Competence	.92 (Frymier, et al., 1996)	(+) affect, motivation, learning, & immediacy (Frymier, et al., 1996)
BAT (+)	None (Topology)	(+) affect, motivation, & immediacy (Kearney, 1994)
BAT (-)	None (Topology)	(-) affect, motivation, & immediacy (Kearney, 1994)
MSLQ (Int)	.74 (Pintrich, et al., 1993)	(+) final course grade (Pintrich, et al., 1993)
MSLQ (Ext)	.62 (Pintrich, et al., 1993)	(+) final course grade (Pintrich, et al., 1993)
MSLQ (Value)	.90 (Pintrich, et al., 1993)	(+) final course grade (Pintrich, et al., 1993)
Task Orient.	.89 (Duda & Nicholls, 1992)	(+) perceived ability, (-) boredom (Duda and Nicholls, 1992)
Ego Orient.	.89 (Duda & Nicholls, 1992)	(+) perceived ability, (-) boredom (Duda and Nicholls, 1992)

CHAPTER 3

Results

Research Question 1 concerned the relationship between learner empowerment and interest. Hypothesis 1 asserted that there would be a significant and positive relationship between summative scores on the learner empowerment measure, the sub-scales of the learner empowerment measure, and the perceived interest questionnaire. Results using Pearson Correlation analysis support this hypothesis. The perceived interest questionnaire achieved significant and positive correlations with the learner empowerment summative scores ($r=.77$, $p<.01$), meaningfulness ($r=.82$, $p<.01$), impact ($r=.53$, $p<.01$), and competence ($r=.33$, $p<.01$) (see Table 4).

Table 4
Correlations Between Interest, Empowerment and Motivation

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
1. Interest	X											
2. Learner Emp.	r=.77 p<.01	X										
3. Mean.	r=.82 p<.01	r=.85 p<.01	X									
4. Impact	r=.53 p<.01	r=.80 p<.01	r=.50 p<.01	X								
5. Comp.	r=.33 p<.01	r=.64 p<.01	r=.35 p<.01	r=.31 p<.01	X							
6. MSLQ (tot)	r=.79 p<.01	r=.67 p<.01	r=.75 p<.01	r=.42 p<.01	r=.31 p<.01	X						
7. MSLQ (task)	r=.85 p<.01	r=.75 p<.01	r=.83 p<.01	r=.49 p<.01	r=.33 p<.01	r=.91 p<.01	X					

Table 4
Correlations Between Interest, Empowerment and Motivation

8. MSLQ (intrinsic)	r=.73 p<.01	r=.58 p<.01	r=.63 p<.01	r=.41 p<.01	r=.23 p<.01	r=.84 p<.01	r=.72 p<.01	X			
9. MSLQ (extrinsic)	r=.06 p>.05	r=.04 p>.05	r=.07 p>.05	r=-.06 p>.05	r=.10 p>.05	r=.46 p<.01	r=.13 p>.05	r=.13 p>.05	X		
10. Goal Orn. (tot)	r=.11 p>.05	r=.03 p>.05	r=.05 p>.05	r=-.05 p>.05	r=.07 p>.05	r=.26 p<.01	r=.14 p<.05	r=.17 p<.01	r=.35 p<.01	X	
11. Task Orientation	r=.26 p<.01	r=.22 p<.01	r=.22 p<.01	r=.06 p>.05	r=.24 p<.01	r=.36 p<.01	r=.25 p<.01	r=.44 p<.01	r=.17 p<.02	r=.92 p<.01	X
12. Ego Orientation	r=.0 p>.05	r=-.04 p>.05	r=-.04 p>.05	r=-.09 p>.05	r=-.03 p>.05	r=.14 p>.05	r=.05 p>.05	r=-.01 p>.05	r=.33 p<.01	r=.55 p<.01	r=.17 p<.02

To clarify the relationship between learner empowerment and interest, an exploratory factor analysis was calculated, entering all the items from the learner empowerment measure, as well as all of the items from the perceived interest questionnaire. For a factor to be considered meaningful and stable, it needed to establish certain criteria. The factor had to have an eigen value greater than 1, have 3 or more items with their primary loadings on that factor, and account for at least 5% of variance. Primary loadings were determined using a 40/20 criterion (Hatcher, 1994). An item had to have a factor loading of at least .40, with no secondary loading less than a difference of .20. For example, if an item loaded on Factor 1 at .63 and Factor 2 at .41, then that item's primary loading is on Factor 1. The result of the factor analysis, using a varimax rotation, was a three-factor solution. All three of the learner empowerment sub-scales factored out separately. The only items from the learner empowerment measure that failed to load on the appropriate factor were Items 5, 10, and 20. The items from the perceived interest

questionnaire all loaded on the same factor as the meaningfulness dimension of the empowerment scale (see Table 5 for factor loadings). A second factor analysis was run using only the items from the learner empowerment measure to check for factor stability. This time all of the items loaded on their appropriate factors.

Table 5
Factor loadings and Variance Accounted For By Learner Empowerment and PIQ items

	Factor 1 (41% Variance)	Factor 2 (12%)	Factor 3 (8%)
Learn Emp. 1 (Impact)	.18	.09	.73 *
Learn Emp. 2 (Impact)	.22	.19	.54 *
Learn Emp. 3 (Impact)	.15	.12	.83 *
Learn Emp. 4 (Impact)	.24	.10	.71 *
Learn Emp. 5 (Impact)	.03	.09	.33
Learn Emp. 6 (Impact)	.23	.10	.74 *
Learn Emp. 7 (Impact)	.22	.06	.55 *
Learn Emp. 8 (Impact)	.20	.04	.76 *
Learn Emp. 9 (Impact)	.13	.03	.68 *
Learn Emp. 10 (Impact)	.41	.21	.57
Learn Emp. 11 (Meaning)	.50 *	.19	.21
Learn Emp. 12 (Meaning)	.74 *	.16	.25
Learn Emp. 13 (Meaning)	.76 *	.20	.17
Learn Emp. 14 (Meaning)	.64 *	.16	.12
Learn Emp. 15 (Meaning)	.68 *	.11	.22
Learn Emp. 16 (Meaning)	.59 *	.11	.14
Learn Emp. 17 (Meaning)	.62 *	.20	.07
Learn Emp. 18 (Meaning)	.50 *	.06	.19
Learn Emp. 19 (Meaning)	.48 *	.15	.08
Learn Emp. 20 (Meaning)	.23	.05	.17
Learn Emp. 21 (Competence)	.23	.76 *	.18
Learn Emp. 22 (Competence)	.05	.57 *	-.06
Learn Emp. 23 (Competence)	.09	.85 *	.16
Learn Emp. 24 (Competence)	.13	.72 *	-.04

Table 5
Factor loadings and Variance Accounted For By Learner Empowerment and PIQ items

Learn Emp. 25 (Competence)	.06	.83 *	.12
Learn Emp. 26 (Competence)	.10	.86 *	.08
Learn Emp. 27 (Competence)	.16	.81 *	.18
Learn Emp. 28 (Competence)	.06	.63 *	-.03
Learn Emp. 29 (Competence)	.25	.65 *	.11
PIQ 1	.81 *	.15	.23
PIQ 2	.78 *	.08	.25
PIQ 3	.77 *	.23	.22
PIQ 4	.79 *	.13	.10
PIQ 5	.79 *	.08	.10
PIQ 6	.84 *	.04	.24
PIQ 7	.75 *	.17	.28
PIQ 8	.83 *	.09	.18
PIQ 9	.86 *	.08	.22
PIQ 10	.85 *	.13	.26

Note: Primary loadings are starred

Research Question 2 concerned itself with the nature of the relationships between interest, empowerment, and motivation. Hypothesis 2 proposed that the relationship between the learner empowerment measure and the MSLQ would not be significantly different from the relationship between the perceived interest questionnaire and the MSLQ (see Table 4 for correlations). To test this hypothesis, a t-test was used to compare the two correlations. The result of this t-test showed that there was a significant difference between the correlations ($t[203]=4.198$, $p<.01$). Therefore, Hypothesis 2 was not supported.

Hypothesis 3 posited that the relationship between the learner empowerment

measure and the Duda and Nicholls (1992) classroom goal orientation scale would not be significantly different from the relationship between the perceived interest questionnaire and the classroom goal orientation scale (see Table 4 for correlations). To test this hypothesis a t-test was used to compare the two correlations. The result of this t-test showed that there was not a significant difference between the correlations ($t[203]=1.71$, $p>.05$). Therefore, Hypothesis 3 was supported.

Research Question 3 was concerned with the relationship between learner empowerment and the different types of motivation. To help illuminate the nature of the relationship between empowerment and motivation a Canonical Correlation analysis was run. The first set of variables included was the three sub-scales from the student empowerment scale. The second set of variables were the motivation measures. Each sub-scale from the two motivation measures was treated as a separate variable. The canonical correlation analysis resulted in one significant and interpretable root (Wilks' lambda=.27, $F[15,191]=21.8$, $p<.01$): Rc1 = .83, explaining 70% of the variance. The root indicated that individuals who perceive a high degree of meaningfulness, and to a lesser extent feel that they have an impact and are competent, report a higher amount of internal motivation (see Table 6 for canonical loadings).

Table 6
Relationship Between Motivation Variables and Empowerment Subscales

Motivation and Empowerment Variables	Canonical Loadings for Root 1
Set 1	
Meaningfulness	.83
Impact	.50
Competence	.34
Set 2	
Task Value (MSLQ)	.83
Intrinsic Value (MSLQ)	.63
Extrinsic Value (MSLQ)	.07
Task Orientation (Goal Orientation)	.23
Ego Orientation (Goal Orientation)	-.05

Research Question 4 concerned the relationship between empowerment and teacher behavior. Hypothesis 4 contended that the summative factor structure, as well as the sub-scales of the learner empowerment measure, would be positively correlated with the pro-social behavior alteration techniques that stem from reward, referent, and expert power. Results of Pearson Correlation analysis partially support this assertion. While all of the pro-social behavior alteration techniques are positively related to impact and the summative student empowerment scores, Items 4, 10, and 18-21 failed to achieve a relationship with meaningfulness and competence. The strongest relationships occurred between the learner empowerment scale and behavioral alteration techniques 1 ($r = .31$, $p \leq .01$), 2 ($r = .33$, $p < .01$), and 5 ($r = .34$, $p < .01$) (see Table 7 for correlations).

Table 7
Correlations Between Behavior Alteration Techniques and Student Empowerment

BAT # (Pro/Anti-Social)	Learner Empowerment	Meaningfulness	Impact	Competence
1. (P)	* r=.31, p<.01	* r=.25, p<.01	* r=.26, p<.01	* r=.20, p<.01
2. (P)	* r=.33, p<.01	* r=.31, p<.01	* r=.27, p<.01	* r=.16, p<.02
3. (P)	* r=.29, p<.01	* r=.23, p<.01	* r=.24, p<.01	* r=.20, p<.01
4. (P)	* r=.18, p<.01	r=.13, p>.05	* r=.25, p<.01	r=.00, p>.05
5. (P)	* r=.34, p<.01	* r=.25, p<.01	* r=.30, p<.01	* r=.24, p<.01
6. (A)	r=.01, p>.05	r=.05, p> .05	r=.05, p>.05	r= -.10, p>.05
7. (A)	r= -.03, p>.05	r= -.02, p>.05	r=.00, p>.05	r= -.06, p>.05
8. (A)	r= -.11, p>.05	r= -.07, p>.05	r= -.02, p>.05	* r= -.20, p<.01
9. (A)	r= -.04, p>.05	r= -.09, p>.05	r=.04, p>.05	r= -.04, p>.05
10. (P)	* r=.17, p<.01	r=.09, p>.05	* r=.27, p<.01	r=.03, p>.05
11. (A)	* r= -.14, p<.04	r= -.09, p>.05	r= -.05, p>.05	* r= -.23, p<.01
12. (A)	r= -.11, p>.05	r= -.13, p>.05	r= -.08, p>.05	r= -.02, p>.05
13. (A)	* r= -.20, p<.01	* r= -.16, p<.01	r= -.10, p>.05	* r= -.21, p<.01
14. (A)	r= -.01, p>.05	r= -.04, p>.05	r=.08, p>.05	r= -.10, p>.05
15. (A)	r=.04, p>.05	r=.01, p>.05	r=.11, p>.05	r= -.04, p>.05
16. (A)	r=.07, p>.05	r=.03, p>.05	r=.12, p>.05	r=.00, p>.05
17. (A)	r= -.08, p>.05	r= -.04, p>.05	r=.02, p>.05	* r= -.19, p<.01
18. (P)	* r=.18, p<.01	r=.07, p>.05	* r=.27, p<.01	r=.08, p>.05
19. (P)	* r=.14, p<.05	r=.05, p>.05	* r=.26, p<.01	r=.00, p>.05
20. (P)	* r=.14, p<.05	r=.06, p>.05	* r=.22, p<.01	r=.02, p>.05
21. (P)	* r=.22, p<.01	r=.13, p>.05	* r=.28, p<.01	r=.08, p>.05
22. (P)	* r=.22, p<.01	* r=.15, p<.04	* r=.25, p<.01	r=.11, p>.05

Note: Significant correlations are starred

Additionally, to ascertain which behavioral alteration techniques have the biggest

impact on student empowerment, forward and backward stepwise regressions were computed. The behavior alteration techniques were entered into the regressions as independent variables. The student empowerment summative scores, as well as the scores from the sub-scales, served as the dependent variables. Looking at these regressions simultaneously, it appears as if several behavior alteration techniques are positively related to the student empowerment measure and its sub-scales. Specifically behavior alteration techniques 2 and 5 appear repeatedly (See Table 8).

Table 8
Results of Stepwise Regression Analyses

DV in Forward Regression	Behavior Alteration Technique (Variance Accounted For)	DV in Backward Regression	Behavior Alteration Technique (Total Variance For Model)
Learner Empowerment (Total)	BAT #5 (11.4) BAT #13 (16.6) BAT #2 (20.2) BAT #3 (22.2)	Learner Empowerment (Total)	BAT #2 BAT #5 BAT #10 BAT #11 BAT #13 (23.8)
Meaningfulness	BAT #2 (9.9) BAT #13 (13.6) BAT #3 (15.2)	Meaningfulness	BAT #2 BAT #13 BAT #3 (15.2)
Impact	BAT#5 (8.8) BAT#21 (12.4) BAT#13 (14.5) BAT#10 (17.2) BAT#11 (19.3)	Impact	BAT#10 BAT#11 BAT#13 BAT#18 BAT#20 BAT#22 (20.5)
Competence	BAT#5 (5.8) BAT#11 (13.1) BAT#17 (15.9)	Competence	BAT#5 BAT#7 BAT#8 BAT#11 BAT#13 (18.3)

Hypothesis 5 contended that the summative factor structure, as well as the sub-scales of the learner empowerment measure, would be negatively correlated with the anti-social behavior alteration techniques. Similar to hypothesis 4, results of Pearson Correlation analysis partially support this assertion. Many of the correlations between these behavioral alteration techniques and the empowerment measures are insignificant. In fact, none of the anti-social behavior alteration techniques are related to scores on the impact sub-scale. The competence subscale attained the greatest number of significant relationships with the anti-social behavior alteration techniques. Techniques 8 ($r = -.20$, $p<.01$), 11 ($r = -.23$, $p<.01$), 13 ($r = -.21$, $p<.01$), and 17 ($r = -.19$, $p<.01$) were all negatively related to feelings of competence. Therefore, it would appear that the use of anti-social behavior alteration techniques is most strongly related to decreases in feelings of competence. The only significant correlations that appeared with the summative student empowerment scores were with behavior alteration techniques 11 ($r = -.14$, $p \leq .05$) and 13 ($r = -.19$, $p < .05$) (see Table 7 for correlations).

Additionally, to ascertain which anti-social behavioral alteration techniques have the biggest impact on student empowerment, forward and backward stepwise regressions were computed. The behavior alteration techniques were entered into the regressions as independent variables. The student empowerment summative scores, as well as the scores from the sub-scales, served as the dependent variables. Looking at these regressions simultaneously, we find that only behavior alteration technique 11 and 13 appear to be significantly related to student empowerment (see Table 8).

Post-hoc Analysis

As a result of the earlier factor analysis, additional tests were run to help clarify the relationship between meaningfulness and the perceived interest questionnaire. Individual t-tests were calculated to compare the correlations between meaningfulness and the motivation measures (the MSLQ and classroom goal orientation), to the correlations achieved between the PIQ and motivation measures. The result of these two t-tests showed that there was no significant difference between relationships that meaningfulness and the PIQ achieved with either the MSLQ ($t[203]=1.57$, $p \geq .05$), or classroom goal orientation ($t[203]=1.21$, $p > .05$).

CHAPTER 4

Discussion

Interest as Empowerment

The present research was conducted with two major goals in mind. The first goal was to gain a clearer understanding of the relationship between learner empowerment and interest. Based on the conceptualizations of learner empowerment by Frymier et al. (1996) and situational interest by Schraw et al. (1995), Mitchell (1993), and Schiefele (1991), it was proposed that these two constructs are isomorphic. To test this proposition, Hypotheses 1, 2, and 3 were formulated. Hypothesis 1 proposed strong and positive relationships between the empowerment measure, its subscales, and the perceived interest questionnaire. This hypothesis was supported in two ways. The first support came from the strong-positive correlations achieved between the PIQ and the empowerment measure (.77), and its subscales (meaningfulness=.82, impact=.53, competence=.33). It is typically argued that correlations greater than .80 indicate construct isomorphism (Singleton et al., 1993). The strength of the relationship between the PIQ and learner empowerment, and more specifically the meaningfulness items, would indicate a strong, if not isomorphic, relationship.

The second method for testing the relationship between learner empowerment and situational interest was through the use of a factor analytic technique. The result of an exploratory factor analysis, in which the items from both scales were entered, was a three

factor solution. All but three of the empowerment items factored appropriately, and the items from the PIQ loaded on the same factor as those from the meaningfulness subscale of the empowerment measure. The result of this factor analysis, along with the strong correlation achieved between the PIQ and meaningfulness (.82) lends support to the assertion that they are isomorphic.

Hypotheses 2 and 3 dealt with validating the empowerment as interest argument by testing for significant relationships with other known constructs. Based on the writings of Hidi (1990), Hidi and Baird (1988), Schiefele (1991), and Tobias (1994), we know interest is positively related to motivation. Therefore, if the learner empowerment measure is actually tapping into interest, then it should have the same relationship with motivation as the PIQ does. The MSLQ (Pintrich et al., 1993) is probably one of the most widely recognized measures of motivation in the educational psychology literature. Hypothesis 2 tested for significant differences between the PIQ/MSLQ relationship and the empowerment/MSLQ relationship. This hypothesis was not supported. Significant differences were found between the PIQ/MSLQ relationship and the empowerment/MSLQ relationship. While this is true, it is interesting to note that the correlation achieved between the PIQ and MSLQ (.79) was almost identical to that achieved by the MSLQ and meaningfulness (.75). Additionally, post-hoc t-tests showed no significant differences between the PIQ/MSLQ relationship and the meaningfulness/MSLQ relationship. This supports the idea that the meaningfulness subscale of the empowerment measure and the

PIQ are measuring the same thing.

The classroom goal orientation scale (Duda & Nicholls, 1992) was also selected as a measure of motivation. This scale is concerned with what makes a student feel successful in the classroom. The question of importance in the classroom goal orientation scale is, why am I doing this thing. Similar to the procedure used to test Hypothesis 2, a t-test was calculated to test for significant differences between the PIQ/ classroom goal orientation relationship and the empowerment/classroom goal orientation relationship. The result of this t-test showed that there was not a significant difference between the two correlations. Therefore, Hypothesis 3 was supported. Additionally, post-hoc t-tests show no significant differences between the PIQ/classroom goal orientation relationship and the meaningfulness/classroom goal orientation relationship. This supports the idea that the meaningfulness subscale of the empowerment measure and the PIQ are measuring the same thing.

Research Question 3 attempted to dissect the nature of the empowerment-motivation relationship further. Frymier et al. (1996) found significant correlations between empowerment and a global measure of motivation. What is being explored here is the question of how does the combination of the three empowerment dimensions, meaningfulness, impact, and competence, relate to dimensions of motivation? To answer this question a canonical correlation was computed. The empowerment subscales served as the first set of variables, while the three subscales from the MSLQ and the two

subscales from the classroom goal orientation scale were entered as the second set of variables. The result of the canonical correlation indicated that individuals who see the meaningfulness, and to a lesser extent, feel they have an impact and are competent, are more internally motivated. This result in itself is not surprising. What is noteworthy is the pattern of results. An examination of the canonical loadings for the first set of variables (meaningfulness, competence, and impact) indicates that it is the meaningfulness of the material that is the most strongly related to internal motivation (MSLQ task, MSLQ internal, task goal orientation).

Teacher Behavior and Empowerment

Hypotheses 4 and 5 dealt with the second goal of this research, the relationship of teacher behavior to learner empowerment. Teacher behavior was measured by the Kearney et al. (1984) behavior alteration technique topology. There are 22 behavior alteration techniques that comprise the measure. The items in the topology are individual techniques. Responses to the items are treated as unique variables not to be summed. While the items are not intended to be summed, they can be classified as either being pro-social or anti-social. Hypothesis 4 was concerned with the relationship of the pro-social behavior alteration techniques to empowerment, while Hypothesis 5 was concerned with the anti-social behavior alteration techniques with empowerment.

Results of correlational analysis lend at least partial support to Hypothesis 4, that the pro-social teacher behaviors would be positively related to student empowerment. The

empowerment measure and its sub-scales were positively correlated to most of the pro-social behavior alteration techniques (Items 4, 10, and 18-21 failed to reach significance with the meaningfulness and competence subscales). Similarly, results of correlational analysis lend at least partial support to Hypothesis 5, that the anti-social teacher behaviors would be negatively related to student empowerment. The empowerment measure and the meaningfulness, and competence subscales, were negatively correlated to some of the anti-social behavior alteration techniques.

To further clarify the relationship of teacher behavior and empowerment, regression analyses were computed. The reason for doing so was to pinpoint which of the behavior alteration techniques were most meaningful to student empowerment. Both forward and backward regressions were computed. In a forward regression, items are placed into the model based on their amount of variance accounted for. The item which accounts for the largest portion of variance enters the equation first followed by the next largest. This continues until items are no longer able to add to the model. A backward regression begins by entering all of the items into the model. Items are then removed one at a time starting with the items that account for the least amount of variance. When looking at these regressions together, the results are consistent with the strength of the correlations. The pro-social Items 2 (it will help you later in life, it will prepare you for getting a job or going to graduate school) and 5 (you are the best person for the job, you will feel good about doing it), along with anti-social Items 11 (I will dislike you, I will lose respect for

you) and 13 (because I told you to do it, you don't have a choice, you are here to work) appeared to be the most meaningful. A closer examination of these behavior alteration techniques indicate that students would rather have the benefits of course work explained to them instead of just being ordered to do something for fear of punishment.

While this is important in itself, it is the pattern of results that calls for closer examination. Since all of the pro-social behavior alteration techniques are correlated with the impact subscale, it would suggest a range of teacher behaviors that are positively related to students' perceiving they are active participants in the educational process. Conversely, since the most anti-social behavior alteration techniques are related to feelings of competence, this would suggest that certain teacher behaviors serve to de-empower students. These ideas should not come as a surprise to educators. The relationship between the behavior alteration techniques and meaningfulness and competence are consistent with the rhetoric of even the earliest educational scholars. Dewey (1916) and Berlyne (1960) in one way or another, proclaim the educational benefits to keeping students active and experiencing success.

Implications

As a result of this project, there are a number of implications for future research. It would seem as if instructional communication researchers need to learn a new word. Interest is a variable that has attracted a great deal of attention in the educational psychology literature and should gain the same level of importance in the instructional

communication literature. It would seem impossible to study the positive effects of motivation or affect without at least acknowledging interest.

Conversely, it appears as if the Frymier et al. (1996) learner empowerment scale is exactly what educational psychologists in the area of interest are looking for, it is a reliable scale that accurately measures the different dimensions of interest. If interest is truly meaningfulness, impact, and feelings of competence, the empowerment scale should be used in future interest research. Most importantly for researchers in the area of interest, this scale provides an opportunity to separate the effects of value from feelings of competence (or schema activation). As Tobias (1994) and Schiefele (1991) have stated, before we can truly understand the effects of interest, the relative contributions of prior knowledge and value must be separated. If, as argued previously, feelings of competence are a result of schema activation and prior knowledge, the empowerment measure can provide researchers with a method of partialing out the effects of the different dimensions of interest.

The results of this research also have implications for classroom instruction. The results of the canonical correlation, coupled with the lack of significant relationships between prior knowledge (classes taken in the past) and the empowerment or motivation measures bears noting. While it would be incorrect to assume that schema building had little or nothing to do with students empowerment scores, the loading of meaningfulness on the canonical root indicates the importance of this variable. In reality, it may be the

meaningfulness of the information that serves to activate pre-existing schema. By making material more meaningful, it may allow students to attach incoming information to pre-formed cognitive structures.

The influence of meaningfulness needs to be researched further. If, for no other reason, than the possible benefits that it may have on the practice of education. As our culture has become more integrated, so to has our school system. Unlike 70 years ago, everyone now goes to school. This has led to an increase in variety of the average student. Students have different heritages, backgrounds, and customs. Given the cries of cultural bias that so many of our instructional practices have been accused of in the past fifteen years, it just might be the meaningfulness of the material that can overcome some of these problems.

Limitations

The fact that a college-student sample was used for this investigation is a limitation. The one characteristic that the subjects share, call the results of this study into question. It can, and should be argued, that since the participants attend college, their interest scores are going to differ from those individuals who do not attend college. Similarly, college students willingness to be influenced by teachers might also be different from non-college students. Since attending college is an act of volition, college students might be expected to have different attitudes toward school and teachers.

A second limitation to this study deals with the operationalization of prior knowledge.

A measure of prior knowledge was included so that its effects could be controlled for. Students were asked (a) to respond to the items in reference to the class that they have immediately before the one they are in now and (b) to indicate how many courses they had previously taken in that subject area. The non-significant correlations between prior knowledge and the empowerment measures are likely a result of bad operationalization. Only the single "how many previous courses" question was used as an indicator. Along with the obvious problem that this presents, the ambiguity of the question may also have confounded the data. While completing the questionnaire, a number of participants asked for clarification as to what was meant by, "How many courses have you previously taken in this subject area." The confusion lies in the meaning of "subject area." For example, suppose that a participant is a psychology major who has taken five psychology courses previously. The course that the participant is referring to on the questionnaire happens to be psychology statistics. The question is, does the participant answer a maximum of "6" because of the previous five classes or "0" because that person has never had a statistics course before? In the future, this problem needs to be addressed, and more items need to be used to assess prior knowledge.

A third possible limitation to this study is the context in which this study took place. As was discussed previously, interest is typically investigated from a text perspective. Participants are typically given a passage to read and then asked about their level of interest in the text. In this investigation, the context in which interest is being

studied is much larger. This creates problems because of a lack of control over outside variables. What might be interesting to do would be a laboratory manipulation of interest. Participants could be given an objective knowledge exam and then shown a lecture. Interest ratings could then be obtained and prior knowledge could be controlled for.

A final limitation to this study deals with the relationships between the perceived interest questionnaire, learner empowerment, and the classroom goal orientation scale. The results of Hypothesis 3 are brought into question since the classroom goal orientation measure failed to achieve significant correlations with the interest measure (PIQ) or the learner empowerment measure. Since neither of these correlations was significant, the comparison seems to lose importance. The problem lies in the conceptualization of the hypothesis. As Duda and Nicholls (1992) asserted, it is task orientation that is related to interest while ego orientation is related to feelings of superiority. The proper conceptualization of the hypothesis should have referred to positive relationships between the PIQ, empowerment, and task orientation measures. The PIQ/task orientation relationship, as well as the empowerment/task orientation relationship, reached significance. It should be noted that the PIQ/task orientation correlation (.26) is almost identical to the empowerment/task orientation correlation (.22), and a t-test reveals no significant difference between them ($t[203]=1.17$, $p \geq .05$).

Future Directions

The results of this study provide some insight into possible future directions. First, a follow-up study needs to be done using the empowerment scale while also employing a better measure of prior knowledge. As was addressed before, it would be premature to begin hypothesizing about the relative contributions of prior knowledge and value to interest. It could be asserted that a more reliable and valid measure of prior knowledge should be positively related to the feelings of competence subscale.

Secondly, only one type of teacher behavior was measured (the behavior alteration techniques). What about the relationships of student interest to other teacher variables such as clarity, immediacy, perceived caring, and credibility? Additionally, how do student trait characteristics affect these relationships? In this investigation, student motivation was explored from a state perspective. How does student trait motivation affect the relationships found in this study? Do certain types of behavior alteration techniques only work for highly motivated students, while others only for students with low trait motivation?

Lastly, educational researchers in the future need to address the motivation-interest relationship. As reviewed earlier, when discussing the steps in validating a construct, Mitchell (1993) stated that the first step is a clear definition. If one were to do a review of the motivation literature and the interest literature, it would be difficult to understand the difference between the two constructs. Even as Schiefele (1991) and Tobias (1994) have

noted, it seems as if interest has become synonymous with internal motivation. The following passage illustrates this conceptual confusion.

> "The importance of moderately difficult tasks is strongly suggested by intrinsic motivation theory. Information processing theorists... claim that optimal arousal and interest are generated by a moderate discrepancy between an external stimulus and an individual's representations... According to other theorists ... intrinsic interest derives primarily from feelings of competence..." (Stipek, p.100).

The switching between the term "intrinsic motivation" and "intrinsic interest" indicates that there is no clear delineation between what is interest and what is motivation. It would seem that before researchers can come to understand the effects of interest and motivation, a clearer distinction between the two must be made.

Interest should not become, as Schiefele (1991) asserts, a lay term for internal motivation. I believe this is so whether we are discussing situational interest or topic interest. Situational interest is a here and now response to something. It can be brought on by changes in stimuli (light, sound, smell, taste, touch,...) or schema activation (this person, place, or thing reminds me of something else). We can talk about being interested in something at this time. It is an active state of being as a result of observing an action, an object, or a combination. Topic interest is subject dependent. It is a stable and consistent preference for certain topics or information. In both situational interest and topic interest, the interest state of being is attributed to an external stimuli (what just happened interested me - I am interested in this thing).

Whereas interest is attributable to external stimuli, motivation may be attributed to

the person. When you are internally motivated, you are motivated to do this thing because you want to better yourself as a person. The drive comes from the need to satisfy something within the person. When you are externally motivated, you are motivated to do this thing because of some outside reward like money, grades, or praise. Conceptual clarity and distinctions between these concepts are a necessity if educators and researchers are to understand the effects of each.

References

Ames, C. (1992). Classrooms: Goals, structures, and student motivation. Journal of Educational Psychology, 84, 261-271.

Anderson, R.C., Mason, J., & Shirey, L.L. (1984). The reading group: An experimental investigation of a labyrinth. Reading Research Quarterly, 20, 6-36.

Anderson, R.C., Shirey, L.L., Wilson, P.T., & Fielding, L.G. (1987). Interestingness of children's reading material, In R.E. Snow & M.J. Farr (Eds.), Aptitude, learning and instruction: Vol., III. Cognitive and affective process analyses (p. 287-299). Hillsdale, NJ: Lawrence Erlbaum Associates.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavior change. Psychological Review, 84, 191-215.

Berlyne, D.E. (1960). Conflict, arousal, and curiosity. New York: McGraw-Hill.

Berlyne, D.E. (1966). Curiosity and exploration. Science, 153, 25-33.

Berlyne, D.E. (1974). Studies in the new experimental aesthetics. (p. 175-180). New York: John Wiley & Sons.

Cohen, J. (1988). Statistical Power Analysis for the Behavioral Sciences. Hillsdale, NJ: Hove and London.

Csikszentmihalyi, M. (1988). Motivation and creativity: Toward a synthesis of structural and energistic approaches to cognition. New Ideas in Psychology, 6, 159-176.

Deci, E.L. (1992). The relation of interest to the motivation of behavior: A self-

determination theory perspective. In K.A. Renninger, S. Hidi, & A. Krapp (Eds.), The role of interest in learning and development (p. 43-70). Hillsdale, NJ: Erlbaum.

Deci, E. L., Vallerand, R. J., Pelltier, L. G. & Ryan, R. M. (1991). Motivation and education. Educational Psychologist, 26, 325-346.

Dewey, J. (1916). Democracy and education: An introduction to the philosophy of education. New York: Macmillan.

Dochy, F. J. R. C. (1994). Prior knowledge and learning. T. Husen & T.N. Postlewaite (Eds.), International Encyclopedia of Education (2nd ed.). Oxford: Pergamon.

Duda, J.L. & Nicholls, J.G. (1992). Dimensions of achievement motivation in schoolwork and sport. Journal of Educational Psychology, 84, 290-299.

Dweck, C. S. (1986). Motivational processes affecting learning. American Psychologist, 41, 1040-1048.

French, J. R. P., & Raven, B. (1959). The bases for social power. In D. Cartwright (Ed.), Studies in social power (p. 150-167). Ann Arbor, MI: Institute for Social Research.

Frymier, A. B. (1994). A model of immediacy in the classroom. Communication Quarterly, 42, 133-143.

Frymier, A., Shulman, G.M., & Houser, M. (1996). The development of a learner empowerment measure. Communication Education, 45, 181-199.

Gage, N.L. (1994). The scientific status of research on teaching. Educational

Theory, 44, 371-383.

Garner, R., Alexander, P.A., Gillingham, M.G., Kulikowich, J.M., & Brown, R. (1991). Interest and learning from text. American Educational Research Journal, 28, 643-659.

Garner, R., Gillingham, M.G., & White, C.S. (1989). Effects of "seductive details" on macroprocessing and microprocessing in adults and children. Cognition and Instruction, 6, 41-57.

Garrison, J.W. & Macmillan, C.J.B. (1994). Process-product research on teaching: Ten years later. Educational Theory, 44, 385-397.

Gorham, J. (1988). The relationship between verbal teacher immediacy behaviors and student learning. Communication Education, 37, 40-53.

Hatcher, L. (1994). A Step by Step Approach to Using the SAS System for Factor Analysis and Structural Equation Modeling. Cary, NC: SAS Institute Inc.

Hidi, S. (1990). Interest and its contribution as a mental resource for learning. Review of Educational Research, 60, 549-571.

Hidi, S., & Anderson, V. (1992). Interest and its differentiated effects on reading and writing. In K.A. Renninger, S. Hidi, & A. Krapp, The role of interest in learning and development (p. 215-238). Hillsdale, NJ: Erlbaum.

Hidi, S., & Baird, W. (1986). Interestingness-A neglected variable in discourse processing. Cognitive Science, 10, 179-194.

Hidi, S., & Baird, W. (1988). Strategies for increasing text-based interest and students' recall of expository texts. Reading Research Quarterly, 23, 465-483.

Iran-Nejad, A. (1987). Cognitive and affective causes of interest and liking. Journal of Educational Psychology, 79, 1-20.

Kearney, P. (1994). Behavior alteration techniques profile. In Rubin, Palmgreen, & Sypher, (Eds.). Communication research measures: A source book, (p.103-108). New York, NY: The Guilford Press.

Kearney, P., Plax, T.G., Richmond, V.P., & McCroskey, J.C. (1984). Power in the classroom IV: Alternatives to discipline. In R. Bostrom (Ed.), Communication Yearbook 8, (p. 724-746). Beverly Hills, CA: Sage.

Kearney, P., Plax, T.G., Richmond, V.P., & McCroskey, J.C. (1985). Power in the classroom III: Teacher communication techniques and messages. Communication Education, 34, 19-28.

Kearney, P. Plax, T.G., Sorensen, G., & Smith, V.R. (1988). Experienced and perspective teachers' selections of compliance-gaining messages for "common" student misbehaviors. Communication Education, 37, 150-164.

Kintsch, W. (1980). Learning from text, levels of comprehension, or: Why anyone would read a story anyway. Poetics, 9, 87-98.

Krapp, A., Hidi, S., & Renninger, K.A. (1992). Interest, learning and development. In K.A. Renninger, S. Hidi, & A. Krapp (Eds.), The role of interest in learning and

development (p. 1-26). Hillsdale, NJ: Erlbaum.

Luftig, R. L., & Greeson, L. E. (1983). Effects of structural importance and idea saliency on discourse recall of mentally retarded and non-retarded pupils. American Journal of Mental Deficiency, 86, 414-421.

Luftig, R. L., & Johnson, R. E. (1982). Identification and recall of structurally important units in prose by mentally retarded learners. American Journal of Mental Deficiency, 86, 495-502.

Malone, T.W., & Lepper, M.L. (1987). Making learning fun: A taxonomy of intrinsic motivations for learning. In R.WE. Snow, & M.J. Farr (Eds.), Aptitudes, learning, and instruction: Vol 3. Conative and affective process analyses (p. 223-254). Hillsdale, NJ: Erlbaum.

McCroskey, J.C. & Richmond, V.P. (1983). Power in the classroom I: Teacher and student perceptions. Communication Education, 32, 175-184.

McCroskey, J.C., Richmond, V.P., Plax, T.G., & Kearney, P. (1985). Power in the classroom V: Behavior alteration techniques, communication training, and learning. Communication Education, 34, 214-226.

Mitchell, M. (1993). Situational interest: Its multifaceted structure in the secondary school mathematics classroom. Journal of Educational Psychology, 85, 424-436.

Pintrich, P. R. & DeGroot, E. V. (1990). Motivational and self-regulated learning

components of classroom academic performance. Journal of Educational Psychology, 82, 33-40.

Pintrich, P.R., Smith, D.F., & Garcia, T. (1993). Reliability and predictive validity of the motivated strategies for learning questionnaire (MSLQ). Educational and Psychological Measurement, 53, 801-813.

Plax, T.G., & Kearney, P. (1992). Teacher power in the classroom: Defining and advancing a program of research. In V.P. Richmond & J.C. McCroskey, (Eds.). Power in the classroom: Communication, control, and concern, (pp. 67-84). Hillsdale, NJ: Lawrence Erlbaum Associates.

Plax, T.G., Kearney, P., McCroskey, J.C., Richmond, V.P. (1985). Power in the classroom VI: Verbal control strategies, nonverbal immediacy, and affective learning. Communication Education, 35, 43-55.

Renninger, K.A. (1989). Individual patterns in children's play interests. In L.T. Winegar (Ed.), Social interaction and the development of children's understanding (p. 147-172). Norwood, NJ: Ablex.

Renninger, K.A. (1990). Children's play interests, representation, and activity. In R. Fivush & J. Hudson (Eds). Knowing and remembering in young children (p. 127-165). Emory Cognition Series (Vol. III). Cambridge, MA: Cambridge University Press.

Renninger, K.A. (1992). Individual interest and development: Implications for theory and practice. In K.A. Renninger, S. Hidi, & A. Krapp (Eds.), The role of interest

in learning and development (p. 361-398). Hillsdale, NJ: Erlbaum.

Richmond, V.P. & McCroskey, J.C. (1984). Power in the classroom II: Power and learning. Communication Education, 33, 125-136.

Richmond, V.P., McCroskey, J.C. Kearney, P., & Plax, T.G. (1984). Power in the classroom VII: Linking behavior alteration techniques to cognitive learning. Communication Education, 36, 1-12.

Schank, R.C. (1979). Interestingness: Controlling inferences. Artificial Intelligence, 12, 273-297.

Schiefele, U. (1991). Interest, learning, and motivation. Educational Psychologist, 26, 299-323.

Schraw, G., Bruning, R., & Svoboda, C. (1995). Sources of situational interest. Journal of Reading Behavior, 27, 1-15.

Schraw, G., Dennison, R.S. (1994). The effect of reader purpose on interest and recall. Journal of Reading Behavior, 26, 1-16.

Senge, P. (1994). The fifth discipline: The art and practice of the learning organization. New York: Currency Doubleday.

Shulman, G., McCormack, A., Luechauer, D., & Shulman, C. (1993). Using the journal assignment to create empowered learners: An application of writing across the curriculum. Journal on Excellence in College Teaching, 4, 89-104.

Singleton, A. S., Straits, B. C., & Straits, M. M. (1993). Approaches to Social

Science Research. New York: Oxford University Press.

Skinner, E.A. & Belmont, M.J. (1993). Motivation in the classroom: Reciprocal effects of teacher behavior and student engagement across the school year. Journal of Educational Psychology, 85, 571-581.

Stipek, D.J. (1996). Motivation and instruction. In Berliner and Calfee, (Eds.). Handbook of Educational Psychology, (p. 85-113). New York, NY: Macmillan

Thomas, K. & Velthouse, B. (1990). Cognitive elements of empowerment: An "interpretive" model of intrinsic task motivation. Academy of Management Review, 15, 666-681.

Tobias, S. (1994). Interest, prior knowledge, and learning. Review of Educational Research, 64, 37-54.

van Dijk, T.A., & Kintsch, W. (1983). Strategies of discourse processing. New York: Academic Press.

Wade, S. E., Schraw, G., Buxton, W.M., & Hayes, M. T. (1993). Seduction of the strategic reader: Effects of interest on strategies and recall. Reading Research Quarterly, 28, 3-24.

Appendix A: Questionnaire Packet for Population 1

Behavior Alteration Techniques Typology

Below you'll find a series of statements that a teacher might use to try and get students to do what they want. These statements are grouped into 22 categories. Please write next to each grouping how often you think the teacher that you have in the class immediately preceding this one use's statements like these. Use a 1-7 scale with 1=never and 7=very often.

_____1) You will enjoy it. It will make you happy. Because it is fun. You will find it rewarding/interesting. It is a good experience.

_____2) It will help you later in life. It will prepare you for getting a job. It will prepare you for achievement tests or the final exam. It will help you with your assignments.

_____3) I will give you a reward if you do. I will make it beneficial to you. I will give you a good grade or extra credit if you do. I will make you my special assistant.

_____4) Others will respect you if you do. Others will be proud of you. Your friends will like you. Your parents will be pleased.

_____5) You will feel good about yourself if you do. You are the best person to do it. You always do such a good job.

_____6) You will lose if you don't. You will be unhappy if you don't. You will be hurt if you don't. It is your loss. You'll feel bad if you don't.

_____7) I will punish you if you don't. I will make things bad for you if you don't. I'll give you an "F" if you don't. If you don't do it know it will be homework tonight.

_____8) No one will like you. Your friends will make fun of you. Your parents will punish you if you don't. Your classmates will not like you if you don't.

_____9) If you don't, others will be hurt. You'll make others unhappy if you don't. Your parents will feel bad if you don't. Others will be punished if you don't.

_____10) I will like you better if you do. I will respect you if you do. I will think of more highly if you do. I will appreciate you more if you do. I will be proud of you.

_____11) I will dislike you if you don't. I will lose respect for you if you don't. I will think less of you if you don't. I won't be proud of you if you don't. I'll be disappointed in you if you don't.

_____12) Do it, I'm just telling you what I was told. It is a rule, I have to do it and so do you. It is a school policy.

_____13) Because I told you to. You don't have a choice. You're here to work! I'm the teacher, you're the student. I'm in charge, you're not. Don't ask, just do it.

_____14) It is your duty. It's your turn. Everyone has to do their share. It's your job. Everyone has to pull their own weight.

_____15) Your group needs it done. The class depends on you. Don't let your group down. You'll ruin it for the rest of the class.

_____16) The majority rules. All of your friends are doing it. Everyone else has to do it. The rest of the class is doing it. It's part of growing up.

_____17) You owe me one. Pay your debt. You promised to do it. I did it the last time. You said you'd try this time.

_____18) If you do this, it will help others. Others will benefit if you do. It will make others happy if you do. I'm not asking you to do it for yourself; do it for the good of the class.

_____19) Your friends do it. Classmates you respect do it. The friends you admire do it. Other students you like do it. All your friends are doing it.

_____20) This is the way I always do it. When I was your age, I did it.
People who are like me do it. I had to do this when I was in school. Teachers you respect do it.

_____21) From my experience, it is a good idea. From what I have learned, it is what you should do. This has always worked for me. Trust me - I know what I am doing. I had to do this before I became a teacher.

_____22) Because I need to know how well you understand this. To see how well I've taught you. To see how well you can do it. It will help me know your problem areas.

Learner Empowerment Measure

Please answer the following questions based upon how you much you agree or disagree with regard to the class that you have immediately preceding this one. Please respond to the following sentences on a 1-7 scale with 1=Completely Disagree and 7=Completely Agree

EX. I like my teacher

I like my teacher a lot so my answer=7

EX. I have fun in school

I do have fun in school but I have more fun playing basketball so my answer=4

Completely Disagree 1 2 3 4 5 6 7 Completely Agree

_____ 1. I have the power to make a difference in how things are done in school

_____ 2. My participation is important to the success of my class

_____ 3. I can make an impact on the way things are run in school

_____ 4. I can help others learn in school

_____ 5. I can't influence what happens in school

_____ 6. I have the power to create a supportive learning environment in school

_____ 7. My participation in school makes no difference

_____ 8. I make a difference in the learning that goes on in school

_____ 9. I can influence the teacher

_____ 10. I feel appreciated in school

_____ 11. The work that I do in class is meaningful to me.

_____ 12. I look forward to coming to class

_____ 13. School is exciting

_____ 14. School is boring

_____ 15. School is interesting

_____ 16. The work that I do for school is valuable to me

_____ 17. The things I learn in school are useful

_____ 18. School will help me achieve my goals in life

_____ 19. The work I do in school is a waste of my time

_____ 20. School is not important to me.

_____ 21. I feel that I can do the work in school well

_____ 22. I feel intimidated (scared) by the work that I am supposed to do in school

_____ 23. I can do well in school

_____ 24. I don't think that I can do the work in school

_____ 25. I believe that I can achieve my goals in school

_____ 26. I believe in my ability to do well in school

_____ 27. I have what it takes to do well in school

_____ 28. I don't have the confidence in my ability to do well in school

_____ 29. I feel very competent in school

Perceived Interest Questionnaire

Please answer the following questions based upon how you much you agree or disagree with regard to the class that you have immediately preceding this one. Please respond to the following sentences on a 1-5 scale with 1=Completely Disagree and 5=Completely Agree

1. _____ I think the class is very interesting

2. _____ I like to discuss the material from the class with others

3. _____ I would take a class like this one again if I had the chance

4. _____ I get caught-up in the class material without trying to

5. _____ I'll probably think about the implications of the course material for some time to come

6. _____ I think the course topic is fascinating

7. _____ I think others would find this class interesting

8. _____ I would like to study more about this subject matter in the future

9. _____ The class was one of the most interesting that I have taken

10._____ The class really grabs my attention

Motivation Measure from the Motivated Strategies for Learning Questionnaire

Please answer the following questions based upon how you much you agree or disagree with regard to the class that you have immediately preceding this one. Please respond to the following sentences on a 1-5 scale with 1=Completely Disagree and 5=Completely Agree

1. _____ I think I will be able to use what I learn in this course in other courses.

2. _____ It is important for me to learn the course material in this class.

3. _____ I am very interested in the course material in this class.

4. _____ I think the course material in this class is useful for me to learn.

5. _____ I like the subject matter of this course.

6. _____ Understanding the subject matter of this course is very important to me.

7. _____ In a class like this, I prefer course material that really challenges me so I can learn new things.

8. _____ In a class like this, I prefer course material that arouses my curiosity, even if it is difficult to learn.

9. _____ The most satisfying thing for me in this course is trying to understand the content as thoroughly as possible.

10. _____ When I have the opportunity in this class, I choose course assignments that I can learn from even if they don't guarantee a good grade.

11. _____ Getting a good grade in this class is the most satisfying thing for me right now.

12. _____ The most important thing for me right now is improving my overall grade point average, so my main concern in this class is getting a good grade.

13. _____ If I can, I want to get better grades in this class than most of the other students.

14. _____ I want to do well in this class because it is important to show my ability to my family, friends, employer, or others.

Duda and Nicholls Classroom Goal
Orientation (Ego Orientation and Task Orientation)

Please respond to the following items based on the 1-7 scale provided below

Very Strongly Disagree 1	Strongly Disagree 2	Disagree 3	Uncertain 4	Agree 5	Strongly Agree 6	Very Strongly Agree 7
1. I feel really successful when I know more than other people.	1	2	3	4	5	6	7
2. I feel really successful when I have the highest test scores.	1	2	3	4	5	6	7
3. I feel really successful when others get things wrong and I don't.	1	2	3	4	5	6	7
4. I feel really successful when I'm the only one who can answer questions.	1	2	3	4	5	6	7
5. I feel really successful when I'm the smartest.	1	2	3	4	5	6	7
6. I feel really successful when I beat others.	1	2	3	4	5	6	7
7. I feel really successful when I can do better than my friends.	1	2	3	4	5	6	7
8. I feel really successful when others can't do as well as me.	1	2	3	4	5	6	7
9. I feel really successful when I work really hard.	1	2	3	4	5	6	7
10. I feel really successful when something I learn makes me think about things.	1	2	3	4	5	6	7
11. I feel really successful when I get a new idea about how things work.	1	2	3	4	5	6	7

12. I feel really successful when I do my very best.	1	2	3	4	5	6	7
13. I feel really successful when I learn something interesting.	1	2	3	4	5	6	7
14. I feel really successful when something I learn makes me want to find out more.	1	2	3	4	5	6	7

ABSTRACT

Literature from the fields of educational psychology, instructional communication, and organizational management are reviewed to lend insight into the relationship between interest and empowerment. Theoretical similarities of these two constructs are highlighted in an attempt to argue for concept isomorphism. The discussion of student interest will address (a) how interest has been examined to date, (b) the definition and components of interest, (c) qualitative differences in types of interest, (d) how interest has been manipulated, and (e) measurement and operationalization concerns in interest. This discussion of interest will be followed by a section that looks at how some of the issues raised in the review of the interest literature may be resolved by an examination of learner empowerment and how teacher behavior can impact student attitudes. Finally, method, results, and discussion sections are also included.

APPROVAL OF EXAMINING COMMITTEE

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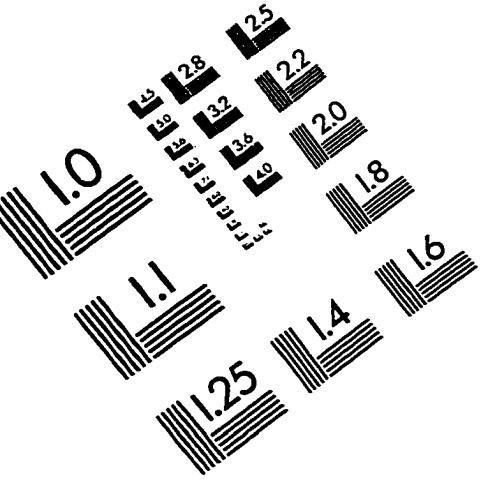
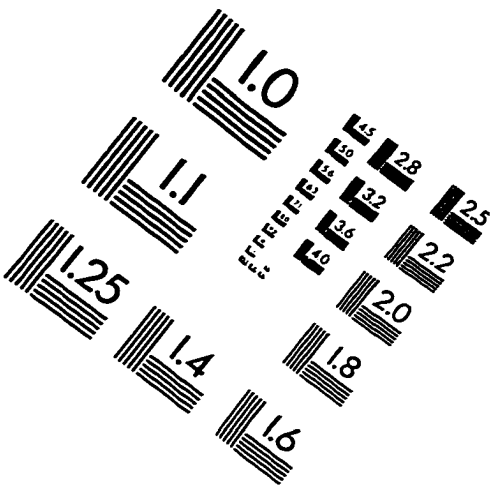
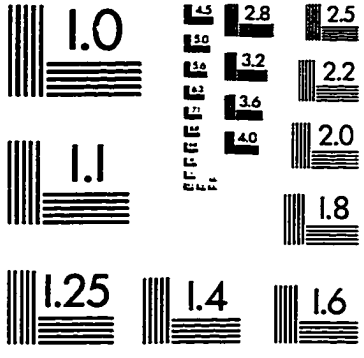
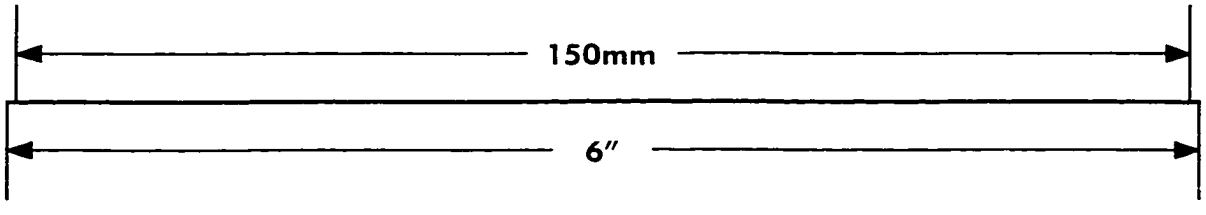
July 2, 1998
Date

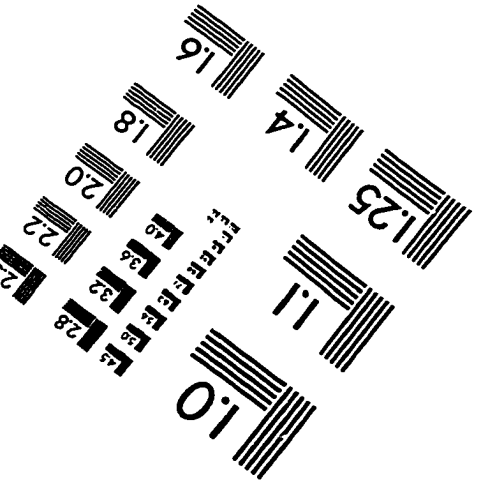
IMAGE EVALUATION
TEST TARGET (QA-3)

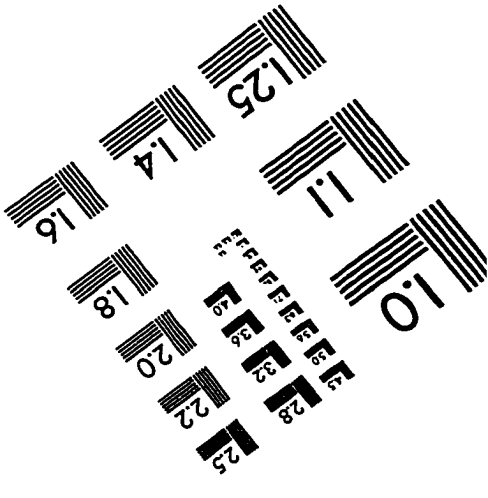












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