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Like Tweedledum and Tweedledee?

Influence of Model Similarity on Efficacy, Acquisition of Concepts and Performance of Skills in Cricket among Middle School Children

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Influence of Model Similarity on Efficacy, Acquisition of Concepts and
Performance of Skills in Cricket among Middle School Children**

by

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Dedication

To my parents and siblings, they nurtured my ambitions, and set me on a path of belief,
their lessons drive me on today.

Acknowledgements

This dissertation is dedicated to my family: To my parents, they were my first teachers. They were the best teachers. My brothers and sisters who have tolerated my absence for such a long time!

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Like Tweedledum and Tweedledee?
**Influence of Model Similarity on Efficacy, Acquisition of Concepts and
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The University of Texas at Austin, 2010

Supervisor: Louis Harrison Jr.

This dissertation probes, through a blending of qualitative and quantitative inquiry, the influence of a model's ethnic similarity to observers on the attentional; and motivational processes of young observers. It examines their concept and skill acquisition as well as their performance on the demonstrated (novel) motor skill and any differential in efficacy, skill acquisition and performance under similar or dissimilar conditions. This inquiry aims to establish whether viewing a similar model (of ethnicity similar to the observer) boosts self-efficacious feelings, expectancy and therefore confidence to perform and as a consequence, performance. This is then compared with actual performance and recall of concepts. The probe follows the line of scholarship and research literature that has comprehensively examined the significant influences of similar and dissimilar model characteristics on learning of motor skills by observers. This has often focused on gender, age, and model status and skill level.

In the similarity studies, the feature of ethnicity has not been given as much focus as it should get. This has mainly been due to the controversy that the specter of ethnicity and race investigation evokes in the American society.

Building on previous studies, this dissertation explores the impact of this salient model feature. This feature has not been investigated with as much intensity as compared to the other features such as age, gender, and skill level in literature. And all the later have been found to exert significant influences on acquisition of modeled motor skills.

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INTRODUCTION

BACKGROUND

This investigation seeks to contribute to the body of literature in the area of cross-cultural research specifically within the realm of physical activity and sport. Its focus is to examine the influences of the ethnicity of a model on the learning and performance of a novel motor task. Existing scholarly inquiry have focused mainly on cross-national comparisons and only occasionally delved into multi-cultural and multi-racial communities. This is particularly important with respect to the US, one of the most multiethnic and multi racial societies in the world. Multi cultural and multi racial research is more so relevant in light of the projection that by the year 2050, minorities will be the new majority in the United States, (Futrell, Gomez & Bedden, 2003). Also noteworthy is the fact that sports and activity participation have distinct covert ethnic connotations.

Literature indicates that minorities have long been hampered by low achievement in schools in different content areas, (Ladson-Billings, 1994). The number of minority teachers in American schools can aptly be characterized as anemic (National Center for Education Statistics [NCES], 2006). One of the things that have been suggested as a means to address low achievement among minority children and boost their achievement in schools has been to encourage more minorities to consider the teaching profession. The consideration is to provide minority learners in schools with individuals who look like them to serve as role models. Ethnic similarity, albeit only implied, underlie this reasoning.

PURPOSE OF THE STUDY

The purpose of this study is to determine whether the use of similar models in the demonstration of a novel motor skill actually improves efficacy and achievement beliefs and thus performance in specific situational learning. As discussed elsewhere in this review, role models that look like individuals whom they are intended to benefit have been established to positively influence learning and performance. However, what has not been investigated is whether the valuable effects of modeling goes down to specific instances of observational learning or modeling. The effectiveness of a model of similar ethnicity versus a dissimilar one on learning physical skills has not been fully investigated.

Doing research, in such multi cultural and multiracial societies have long been plagued with controversies that have made such undertakings difficult. Discussions addressing these challenges are lacking in the academic arena, (Apple, 1999). The main reason for this discrepancy is the discomfort that is prevalent in any discussion on matters of ethnicity and race. The discomfort is doubly magnified when cross-ethnic comparison of any kind is considered. This may explain the paucity of literature in this area and therefore the need to explore studies along these lines. An addition in literature may be good in the long term to spur this kind of conversation.

STATEMENT OF THE PROBLEM

Literature suggests that model features influence attention and learning of motor skills observational learning. However, the impact of the ethnic features of the model has not been fully examined. Despite the salience of ethnicity, when compared to

other model characteristics that have widely been probed by researchers in the realm of modeling and motor behavior, the influence of this characteristic on imitation learning has been overlooked in modeling literature. In sports and physical activity settings especially where physical ability has been racialized, and sporting discourse is pedagogized in young people's sporting imagination as Azzarito & Harrison (2008) contend, the impact is bound to be felt in learning and instruction situations.

This study will examine the impact of model-observer ethnic similarity on the attention and concept learning of the observers of a novel motor task. The other purpose of this study is to deepen the understanding of the subtle factors that influence the learning of physical activity motor skills from models.

It will also probe, by way of examining quantitative and qualitative data, whether observing an ethnically similar model presents the observer with attentional cues that impact powerfully the learning of a novel motor skill. The study will seek to determine whether there is an elevated sense of self-efficacy resulting from observing a model that is similar to the observer as compared to those viewing a model that is dissimilar demonstrating novel concepts and skills. Attempts will also be made to examine the sources of perceptions of suitability of physical activities which impact the whole process of modeling motor skills.

RESEARCH QUESTIONS

- Does observing a model of similar ethnicity heighten attention and recall of novel motor skill task?

- Does observing a model of similar ethnicity improve efficacy on the part of the observers?
- What are participants observing when they watch a demonstrator perform?
Do those who view a model of similar ethnicity become more attentive than those that view a model of dissimilar ethnicity in the novel motor task?

SIGNIFICANCE OF THE STUDY

This dissertation explores the impacts of models of similar versus dissimilar ethnicities on the learning of physical skills. Success in physical activity and sports is dependent on observation and re enactment of concepts, skills and movement patterns. Observation and re-enactment of skill are in turn influenced by sociological and psychological factors, (Jackson, 1989).

“...racial and ethnic experiences may affect the very nature of social and psychological processes of interest... Jackson points out the roles of these factors in influencing an individual’s basic psychological processes of perception, cognition, intellectual functioning, value acquisition, personality development and expression, and social interaction. Based upon this view, psychological theories...that claim universality should include integral components how the nature of race and ethnicity may influence these basic psychological processes. (p.1).

Other authors have pointed out the importance of race and ethnicity considerations as crucial in modeling, especially in the realm of physical activity and sport skills learning. Duda & Allison (1990) argued vociferously that ignoring variability in social and psychological processes between and among ethnicities will inevitably diminish the importance of learning experiences. They contend that since the fields of exercise and sport, have over a long time been clouded in myths, stereotypes and biases, a theoretical basis of understanding is necessary to clear the misconceptions.

Owing to a long, tortured and still often uneasy history of race relations, the consciousness about race and ethnicity is perhaps felt more intensely in the American society than in other multiracial/multicultural societies. Any research with cross-ethnic framing is approached with much trepidation. Racial discourse is curiously absent or under-discussed in the academic arena, and even more scarce in the realm of sport and physical education (Apple, 1999).

Influences of model ethnicity on efficacy, expectancy, acquisition and performance in different settings

There abounds interesting and compelling situations in popular culture, arts, and even in the realm of education in which ethnicity has been found to proffer beneficial modeling effects. Here, a few of those examples are identified with a view to juxtaposing them to illustrate the relevance of giving the construct of ethnicity/race a closer scrutiny in specific modeling situations. However, the angle from which these influences are examined in each case is different.

Much has been written about stereotypes, stereotype threat and self-stereotypes with regard to appropriateness of different activities for different ethnicities

and racial groups. Racial stereotypes about athletes – particularly Black and White athletes- represent over generalized beliefs about the causes of athletic success and failure, (Steele & Aronson, 1995; Harrison, 2001).

Indeed, evidence points to the fact that people hold very specific positive and negative dispositional beliefs about what lies at the heart of White and Black athletic performance, (Stone, Sjomelling, Lynch & Darley, 1999).

Interestingly, it has been determined that self stereotyping influences an individual's performance. Stereotyping plays an important role in development of expectations which in turn drives the concept of self-fulfilling prophecies (Harrison, 2001). Perhaps the most relevant point to this thesis is that of the tendency for expectations to elicit behavior that will confirm the expectations, (Hamilton & Trolier, 1986; Myers, 1993). It will indeed be very interesting to see what effects the membership in a positively stereotyped group affords an observer of the same group as a model demonstrating a novel task successfully.

In schools, different activities, especially physical and sporting activities have been systematically dichotomized as appropriate for specific ethnic groupings (Harrison, Lee & Belcher, 1999). Individuals from these groups have bought into these stereotypes and internalized them such that it is no doubt reflected in choice, participation patterns and even performance in some activities.

The influence of course, has been a gradual process where stereotypes concerning the appropriateness of different activities for different ethnicities are conceived, nurtured and reinforced. This in turn has inevitably altered interests, choice and participation patterns in physical and sports activities.

Oakes' (1994) proposition that the tendency of identifying with a salient group, aptly called self-stereotyping, exerts such an immense effect when attributes of a group that is target of a stereotype, are viewed as desirable, underscores the effect of this phenomena.

When this is coupled with the contention of (Biernat, Vescio & Green, 1996), that the process of self stereotyping is especially powerful when attributes of a group are deemed as desirable and elevate both individual and group self esteem, an illustration of how powerful a model's ethnicity can exert in observational learning situation is made more evident. This is the case because for the most part, stereotypes work best along ethnic and racial lines. In fact the process of self-stereotyping by African Americans for athletic success (Stone et al., 1999) may be a significant putative factor in their success.

Perhaps the most vivid example to highlight for the purpose of illustrating the influence of ethnicity of the model on learning, is the research on stereotype threat (Steele & Aronson, 1995) carried out in cognitive learning situations. Of note here, is the way these experiments frame [the construct of race] and the examination of how race or ethnicity explicitly impact learning and mastery in very specific situations.

Other research (Shih, Pittinsky, & Nalini, 1999; Ambady, Shih, Kim & Pittinsky, 1993) showed that performance of a task by both adults and children can either be debilitated or facilitated when an individual feels that the ethnic group in which they claim membership in is either positively or negatively stereotyped in that domain. For example, in Shih, et.al, Asian American women fared much better in a quantitative

task when their ethnic identity was implied in the course of the trials. The underlying framing exploited in that study was the stereotype that Asians fare better in math.

There are of course anecdotal examples from popular culture that have not been given scholarly attention but which merit a closer scrutiny in literature. Dwayne Wade, the top Miami Heat NBA player describes how he grew up to become one the most well known NBA greats. He relates vividly how he used to follow the exploits of an earlier great, Michael Jordan. He describes how he watched every game in which Jordan was featuring, totally absorbed and enthralled, until the end. Only then will he take his basketball and go out to the yard to try to reenact all the moves that he had watched his idol perform. In fact, Wade concedes today that he patterns his basketball game after Michael Jordan.

Is it probable that a mere observation of a model that belongs to similar ethnicity, made obvious by the explicit salience of superficial ethnic features, can activate associations that signal the appropriateness of and especially potential competence when the model seems to perform so well?

The priming experiments of (Bargh, Chen & Burrows, 1996) also established that trait concepts and stereotypes became activated automatically in the presence of relevant behavior or stereotyped group features.

In many situations now, it is common to present and tout successful individuals drawn from different walks of life to either give tips or advice to younger audience. In most cases, these individuals invariably belong to the same ethnicity or gender as those their advice is intended to benefit. The notion that similar individuals in

terms of ethnicity or gender will do a better job of imparting the desired qualities, albeit tacitly acknowledged and widely employed, has not been closely examined.

There is a firm belief that by presenting a similar role model, the observers or the intended audience will pay more attention since the model will possess something they share. In these arrangements, it is taken for granted that the salience of gender or race will work toward increasing the intended effect.

This is consistent with Bandura's (1986) assertion that a similar other has the effect of boosting the observer self-efficacy.

He argued thus:

Observing similar others succeed at a task can raise observers' self-efficacy and motivate them to try the task themselves, because they are apt to believe that if others can succeed, they can as well. Conversely, observing similar others fail can lead people to believe that they lack the competencies to succeed, which can dissuade them from attempting the behavior. Model attributes often are predictive of performance capabilities. Similarity may be especially influential in situations where individuals are uncertain about their performance capabilities such as when they lack task familiarity and have little information on which to base self-efficacy judgments' or when they have previously experienced difficulties and possess self doubts about performing well.

Another strong case made for similarity to the model as contributing to improvement of efficacy and therefore performance is that made by Schunk (1987). He identified perceived similarity between a model and an observer as a particularly critical

element. The central role that perceived model-observer similarity is to convey information about abilities or appropriateness of behavior. Schunk observes:

Modeling is touted as a form of social comparison. Where the objective standards of behavior are unclear or unavailable, observers evaluate themselves through comparisons with others, and that the most accurate self evaluations derive from comparisons with those who are similar in the ability or characteristic being evaluated.

Anecdotal accounts have revealed that indeed when the model is similar, a lot more interest is generated, intense attention rendered and the tendency to emulate more pronounced. In this situation though, it is rarely stated or even vaguely implied, that an ethnically similar model is more effective as compared to a dissimilar one. There is clearly a tacit agreement that we are better off using a similar role model than a dissimilar one for the purpose of role modeling. Often, the framing in which role modeling is employed is explicit enough that the ethnicity of the model is no doubt the centre point or the key point of consideration. As Bandura, (1997) argued, the effectiveness of models to influence learners to actually carry out a particular type of behavior may be dependent on the characteristics of these models. That if a model is similar, rather than dissimilar, to a learner and demonstrates a highly skilled activity, there is more chance that the learner will be motivated.

The next important point that makes this a compelling inquiry to pursue is the potential it offers to explore the influences of similarity in contemporary racialized media portrayal of athleticism in the American society. In the contemporary American

society, sport has come to occupy an unprecedented premiership in people's everyday lives. The electronic media no doubt, has served as the vanguard that has extensively proliferated and sustained this notion and has also played a key role in bringing sport to this coveted level.

The point that is indirectly connected to the thesis of this dissertation is that of over representation of individuals of certain ethnicities in different sporting activities especially at elite level. The inevitable emphasis in the mass media through the screening of popular sport, has served to fix firmly in the American psyche the notion that there is a clear cut dichotomized interest, participation and success in different activities by individuals from different ethnic groups. For instance, majority of participants surveyed (Harrison, 1999), believed that certain ethnicities have distinct preferences to particular sports and physical activities.

Any cursory observation of televised sport, the major sporting media, will readily reveal a lopsided racial composition in the elite echelons of certain sports like football and basketball with African Americans enjoying an overwhelming presence. These sports as the most widely watched and of course the most prestigious, thus make their over representation overly magnified. Perhaps the best way to get a perspective of this overrepresentation is to take a look at a set of statistics carried in The Racial and Gender report card (Lapchick and Mathews, 2009) as it aptly illustrates this point.

The report reveals that whereas African Americans make only a paltry 12% of the US population, they constitute 67% of NFL, 82% of NBA, 65% of WNBA and 10.2% MLB. The report also indicates similar trends in sporting activities like boxing

and track and field. In NCAA basketball, 60.2% and 47.4% of male and female basketball players respectively were African American in the 2008 season in Division 1.

The presence of African Americans at the elite levels and their constant spectacular performances at these arenas have tended to promote and firmly fix the stereotype of ethnic suitability of activities despite elite athletes being only a negligible portion of the population. When this is coupled with saturated media portrayal of African Americans as super athletes, it completes the picture that is hard to alter. This feeds self-stereotyping among members of the group and strengthens the notion that similarity will tend to have a greater influence in modeling, in this sports and others activities. The prediction that a similar model will impart a novel skill effectively in comparison to a dissimilar model thus looks plausible.

The questions that arise here and should merit close scrutiny are:

First, does observing an ethnically similar model significantly influence an observer's self-efficacy, expectancy, acquisition and performance of a specific motor task? Secondly, does the mere salience of a model's ethnic features prime individuals in a novel skill demonstration instance and activate feelings of self-efficacy and promote skills acquisition and performance? Thirdly, does a model's ethnic similarity or dissimilarity influence observers' affect, perceived relatedness and as a result influence in physical activity and sports skill acquisition? Answers to these questions will have particular significance in matters of physical education curriculum making as well as making decisions with regard to teacher recruitment and ethnic composition of the teaching force in physical education.

HYPOTHESES

One of the hypotheses of this study is that individuals similar to the model show more affect, attend more to the information the model conveys and will be able to retain more information from the instruction of the novel task episode. Secondly, this study hypothesized that a similar model will confer feelings of self-efficacy on observers as compared to those observing a dissimilar model.

Thirdly, it also hypothesizes that individuals observing a similar model will perform better at re-enacting a novel task after observing a similar model demonstrate it and that conversely, an observer observing a dissimilar model will fare poorly in comparison.

LIMITATIONS OF THE STUDY

This study, owing to the sample size employed may not be readily generalizable. Though the influences of other factors like the media on variables under consideration in this study are assumed to have an impact in an entire society, this sample was obtained from one small location in relation to a vast spread of the American society and may not be representative of that typical age group.

Also, participants in this study were mainly urban. A rural setting sample of participants or participants from areas that are predominantly homogeneous in demographics may have a different response to issues raised in this study.

The other limitation of this study is the fact that it focuses especially on the influence of model similarity and the models used are white and black models only. It

did not put into consideration other demographics although the groups are included in the analysis.

LITERATURE REVIEW

Background

MODELING: A HISTORICAL LOOK

The idea of people watching a performance, action, movement or behavior in order to learn is as old as mankind. The effectiveness of modeling in learning has been acknowledged for a long time and its pedagogical usefulness has enjoyed timeless recognition. In fact, the use of modeling was widely recognized as a premier learning tool in the Greek and Roman era.

Memesis was a term that was wittingly used to imply a process of learning others' behaviors or literary styles by observing, (Rosenthal and Zimmerman, 1978). In the classical era, it was widely documented that esthetics and literary criticism generously employed the method of identifying the best models that were in turn imitated in teaching a new generation.

Isocrates is widely believed to have written the earliest known documentaries expounding on the pedagogical value of modeling and asked that it be employed by teachers. *Mimesis* was used precisely to describe copying another's actions especially in dance, speech or gesture. It is also noted (Rosenthal & Zimmerman (1987) that the definition of *mimesis* was narrowed down to mean the imitation of actions, behavior and movement as opposed to being purely a passive art then touted by thinkers like Aristotle:

Aristotle was far more concerned with mimesis as drama, and in his poetics the concept of imitation served to integrate his analysis of all art forms. Of interest in this connection was his definition of tragedy as a representation of action, or an imitation through action rather than narration, Rosenthal & Zimmerman, (1987).

The Romans seem to have had a more general conceptualization of the idea of modeling. A Roman philosopher aptly captured the essence of modeling thus: “the whole conduct of life that involves emulating positive examples displayed by others, whether it is music, painting, or farming that is modeled”, (Clark, 1957). In the contemporary era, the modern notion of observational learning or modeling has developed against a background of a robust debate.

DO IT LIKE ME: THE CONCEPT OF MODELING

By definition, modeling implies a situation where an observer watches a model perform, then after learning through the observation of the model’s behavior reproduces, observed behavior or action. A *model* has been characterized in different ways. Schunk (1987) described a model as an individual whose behaviors, verbalizations, and expressions are attended to by the observer. These behaviors, verbalizations and expressions then serve as cues for subsequent modeling. It is widely used to teach physical skills.

In fact it is almost impossible to think about a physical activity class, sports and other endeavors that motor skills are employed without the elaborate acts of the

demonstration coming to mind. It has become an integral and as such, a commonplace part of teaching that physical education teachers, coaches and sports practitioners would find it difficult to conceive their work without. Many people can readily recall the use of demonstrations from their physical activity class experiences because of the regular elaborate “show and tell” moments that characterize (d) their physical education and sport experience. Authors and researchers have described the construct of modeling in their writings in different ways indicating the intense interest that the field has generated among them.

Modeling has been defined by researchers in many different ways. Researchers in the realm of modeling seem to be particularly prolific with a diversity of ways of creatively describing their area. Consequently, over the years, a diverse number of terms and phrases including “imitation,” “identification,” “modeling,” “vicarious learning” has been used to refer to the process of reproducing or attempting to reproduce actions that have been executed by another individual (McCullagh, Weiss & Ross, 1989; Meaney, Griffin & Hart, 2005). Others like Bandura’ (1971) have used such terms as “observational learning,” “internalization,” “introjections,” “incorporation,” “copying,” “social facilitation,” “contagion” and “role taking” to describe modeling.

In (Landers, 1975; Bandura’s, 1969), description of observational modeling, the essence of the phenomena of modeling is succinctly summed up thus: “The study of imitative behavior (observational learning) is concerned with the causal relationships between the model’s exhibition of novel responses and the observers’ subsequent attempts to perform them in substantially identical form”.

Gould & Roberts (1982) tout modeling or observational learning as the general process where an observer reproduces overt actions exhibited by a model (either a real life model or a model symbolized through film or video tape), regardless of whether the responses are novel and thus newly acquired, or are modified versions of the existing response repertoires. The concept of modeling as well as its rationale laid out by Bandura (1971) in a theory that vividly underscores the central role of modeling in learning. In fact Bandura notes that in many languages, the words “teach” and “show” is used synonymously. His theory described modeling as acquisition of patterns of behavior or movement, rapidly in large segments, in their entirety (Bandura & Walters, 1963).

Also, (Baer, Peterson & Sherman, 1971) in their detailed description of the phenomena of modeling argued that a behavior is considered imitative if it temporally follows behavior by a model and if its topography and its functionality are controlled by the topography of the models behavior. Topography of an action or behavior is defined as its inherent qualities or characteristics. This description succeeds in casting modeling in its causal nature.

USES OF MODELING

Bandura (1977) conceptualized modeling as a cardinal means of helping individuals to either learn new, or modify existing repertoire of skills and characterized it as the most potent means of transmitting values, attitudes and patterns of thought and behavior. This makes modeling the core concept in the notion of social learning. After all, it is those things that are performed by those around us and those that we relate to that we imitate. The

indispensability of the concept of modeling in this description of its universal applicability and appeal is best captured by Bandura (1971):

There are several reasons why modeling influences are heavily favored in promoting everyday learning. Under circumstances in which mistakes are costly or dangerous, skillful performances can be established without needless errors by providing competent models who demonstrate the required activities. Some complex behaviors can be produced solely through the influence of models (p.3).

It is hardly surprising that modeling has become such a widespread practice employed to influence behavioral change in many facets of life, institutional or otherwise. The complex process of modeling is influenced by a plethora of variables, some not yet fully understood. This aids in explaining the interest in modeling research and the attention given to the information conveyed to the observer through the demonstration as well as factors influencing the effectiveness of the model in conveying modeling information.

The concept of modeling is not only employed in the learning of motor skills. It has been demonstrated that modeling can be used effectively in a multiplicity of other spheres to impart skills and behavioral response acquisition as well as in enhancing performance (Greeson, 1986; Possell et al., 1990; Feltz, 1982; Scraba, 1989). This has helped to underscore the preminence of the modeling process in skills acquisition. The notable areas in which modeling has been employed to a great effect include learned

helplessness (Brown & Inouye, 1978), assertiveness, test anxiety, pain tolerance, various phobias and anger mastery, (Meichenbaum, 1977), avoidance reduction, (Kadzin, 1974).

Bandura also highlighted this trend in his assertion that any casual observation, whether inadvertent or deliberate will reveal that it is largely the exposure to social models that is a major conduit through which human behavior is transmitted. Today, in modeling research, most understanding of the phenomena of modeling is based on the theories of social learning advanced by Bandura, (1977; 1986). These theories of course were advanced to explain modeling in a wide spectrum of human behaviors. Social learning theory dealt with the acquisition of behaviors that occur as a result of social interaction. Social learning generally involves the acquisition of those behavior patterns which society expects from members (Khan & Cangemi, 2001).

It is imperative to note here that owing to the rapid advancement of technology, the role of symbolic models in observational learning has become so widespread that it is the norm rather than the exception in teaching, instruction and coaching. So much so that one instance of modeling may end up influencing the behaviors of millions of observers and can be reproduced and used at different times.

Many arguments have been made to advance the virtues of modeling and demonstrations. Demonstration is widely used in the development of motor skills. It has been argued that visual representation is preferred over verbal instruction because language is limited in its preciseness and that it lacks the quality to specify with precision critical aspects of human movement, (Martens, 1975).

Physical education teachers, coaches and practitioners in related areas consider the demonstration as the most important means of teaching motor skills.

Modeling is putatively the best means with which physical skills can be effectively passed on to learners. It is obvious as Meaney, Griffin & Hart, (2005) contend that physical education practitioner's consistently use visual demonstrations or modeling throughout motor skill instruction. Indeed there is a consensus among physical education teachers and coaches that model demonstrations do facilitate learning (Bandura, 1977, 1986; Scully and Newell, 1985; Magill, 1993). Model demonstrations have long been used for teaching and learning motor skills by physical educators and coaches of all sports and at all skill levels (Huang, 2000). The usefulness of the demonstration is of profound importance in the physical education class, perhaps more so than in any other instructional setting.

In emphasizing the role of modeling, (Weiss & Klint, 1987) noted that in physical education settings, whether teaching a new skill or helping to refine previously-learned skills, modeling techniques may be more important in the physical activity classroom than in any other kind of classroom.

Another highlight of the description of the usefulness of the process of modeling (Scully & Newell, 1985) describes demonstrations through modeling as a method of teaching new action patterns. They characterized it as the most common teaching strategy employed by instructors of motor skills. However, as noted already, it always does not have to be a new behavior or movement that must be acquired through modeling. It may be an existing movement or action whose present quality is no longer desirable and needs to be altered to become more useful or effective. Modeling is perhaps one of the most pervasively used strategies in all manner of settings especially when we consider it as a process of general social learning. Imitation of a model such as a parent,

teacher or coach demonstrating a movement pattern is a common process in everyday life, intended to facilitate motor skill acquisition (De Maeght & Prinz, 2004).

The centrality of the demonstration is also underscored by its prevalence in text books (Gould & Roberts, 1982). An examination of texts showed the regular reoccurrence of demonstrations. Physical education method texts devote vast amounts of coverage to demonstrations and their usage. This is an obvious indication of the strong emphasis the field accords modeling through demonstrations.

Visual demonstrations have been used extensively as an instructional technique for a variety of skills. In fact, social psychologists have long acknowledged modeling to be one of the most powerful means of transmitting values, attitudes and patterns of thought and behaviors (McCullagh, Weiss & Ross, 1989; Khan & Cangemi, 2001).

MODELING RESEARCH

The main points of interest for researchers in observational learning have been determining how a motor skill demonstrated by one person comes to be replicated by another. Many variables are at play in the interim period between observing a demonstration and reproducing a modeled motor act or skill. Identifying these elements and how they affect or influence the imitative process has generated very interesting foci of inquiry for motor learning and modeling researchers. Motor behavior researchers like Landers, (1975) note the difficulty of observers of modeled acts reproducing skilled motor responses. Simply put, the process of modeling, even though it looks simple from the outset, is acknowledged to be one of the most complex operations in motor skill

learning. The consideration of the modeling of motor skills alongside the modeling of other social behaviors, and the fact that they starkly contrast, further illustrates the complexity of modeling of motor tasks.

Research on modeling has had a long history with as many interesting and insightful findings, all attempting to explain how social behaviors and skills are acquired. Long before modeling or observational learning gained prominence as a method of transfer of social skills and strategies, it was widely assumed that modeling was an instinctive process. Bandura (1971) noted that it was not until the middle of the twentieth century that psychologists became increasingly critical of the instinct concept. Evidence increasingly indicated modeling to be a markedly selective process. For instance, observers modeled certain things and not others. If it were an instinctive process, a set or a repertoire of actions or behavior would have been modeled consistently in every instance of modeling. Then, other explanations of the process of modeling notably the associative and reinforcement principles gained traction in explaining modeling before the advent of social learning.

Most of the modern research on modeling is credited to the groundbreaking theories of Bandura that laid down a solid framework for investigating response acquisition. Another notable researcher in this field that contributed ideas that have remained resonant with modeling theorists is Sheffield (1961). With its origins in the field of psychology, modeling has garnered application in diverse fields. But it is in the area of physical activity that it has generated considerable interest due to its prevalence and application in motor skill teaching.

Other modeling researches have found that modeling only facilitated early task performance, Martens, Burwitz and Zuckerman (1976). In the study involving a ball roll up task, three modeling conditions were compared. These conditions were a learning sequence model, correct model and control model groups. They performed the task after viewing a filmed model performing either correctly, incorrectly or a task sequenced progressively. The two groups, correct and incorrect model performed significantly better than the control for only as far as ten trials following the demonstrations. After that, there was no significant edge between the two groups and the control group. The authors of the first roll up tasks conducted a second experiment to investigate the reason why modeling effects wore out after a short time on the roll up task. The earlier process was basically replicated except for the fact that in the later experiment, another filmed demonstration whose performance results for the model were kept until after each participant had estimated outcomes of each trial. They were then required to approximate performance of the filmed model. Following this, no differences between the experimental and control groups remained. It was concluded that correct and sequence model provided task relevant information from the modeled task which helped task performance. Practice conveyed the same information on the other conditions which brought performance to par. Other phases of the experiments followed the same arrangement only that a higher cognitive task and a live model were introduced. These findings supported Sheffield's (1961) conclusions that modeling effects are dependent mainly on nature of the task that is being modeled

Researchers in modeling studies have been trying to examine the context in which the process took place and the role it plays in helping skill and concept

acquisition. For instance, Rosenthal and Zimmerman (1978) explained the question about context:

Can modeling phenomena be adequately explained in terms of response copying? There is extensive evidence to the contrary, data gathered from careful comparison of a model's performance and observer's subsequent imitation. Instead, vicarious learning seems to typically involve the abstraction of rules and meaningful implications from a model's performance; these inferences are then used to integrate previously stored information and to create appropriate terminal (p 85.).

These authors make a pitch for meaningful associations made at the time of observation as potentially big influencers in learning and skill acquisition. As Rosenthal and Zimmerman (1978) contend, there is considerable evidence in research on perception, learning, transfer and recall that human thought is selective and constructive in nature. Social learning theory recognizes the importance of cognitive processes and treats them as a major contributor to behavioral control.

These factors are portent and are thought to guide response acquisition without regard to the complexity of the task to be modeled. This in turn calls for more scrutiny of the modeling process in a bid to understand new and less understood and least studied variables.

MODELING IN PHYSICAL ACTIVITY AND SPORTS

Visual demonstrations rank unarguably the most salient means of skill teaching in many settings where they are called for. Physical education and sports, among other performing arts are spheres where this contention is to a greater extent more strikingly evident. Many researchers in modeling have underscored the premiership of the demonstration in teaching skills. Meaney, Griffin & Hart (2005) concurred that demonstrations are indeed a strategy of choice for physical education practitioners who consistently use visual demonstrations or modeling throughout motor skill instruction. Gould & Roberts (1982) agreed that modeling, by way of demonstrations, enjoy by far a wide acceptance as a teaching technique or strategy in sports and physical education.

The practice of using demonstrations in physical education is so widespread that Weiss & Klint (1987) aptly characterized its critical use by drawing the analogy of the putative self evident truth that “a picture is worth a thousand words”. Modeling in the realm of teaching physical activity has been utilized for as long as physical activities have been taught. Modeling has also been described as a means of acquiring skills, beliefs, notions and novel behaviors (Schunk, 1987; Bandura, 1986; Rosenthal & Zimmerman, 1978). Or as Bandura (1986) put it, the most important method by which people learns a variety of skills and behaviors. Researchers in the arena of motor learning like Adams (1990) also recognized that instructors of all shades employ observational learning techniques.

Motor skills are as varied in complexity as there are physical activities. Because different skilled motor responses have a graduated degree of difficulty and complexity, research in modeling, especially in hitherto unconsidered variables, promises

to be an intriguing one. This is reflected by the scholarship in the area over the last four decades and there are a number of reasons for this interest.

As Magill (2003) points out:

One reason is the phenomenal growth of interest in the role of vision in skill learning. Because demonstrating how to do a skill typically involves visual observation on the part of the learner, researchers have been able to use the study of demonstration and skill learning to assess how the visual system is in skill acquisition and performance (p. 249).

There is a general agreement that any attempt to teach a child a physical skill, sport or otherwise makes apparent the vital role that demonstrations play in motor skill learning and performance. There are other channels - for instance verbal cues – that can help in the learning of motor skills. However, many motor skills do not readily lend themselves to description however elaborately they are done, nor is this mode of information easily retained and translated to action by observers (Weiss, Ebbeck & Rose, 1992). When juxtaposed with other modes of conveying information to observers, demonstrations still rank as the most effective.

The presentation of a motor skill or task that is new to an observer or an amended aspect of the observers' existing repertoire of motor skills causes an observer to engage in a cognitive function to understand it. Because modeling has been found to facilitate motor task performance by conveying task relevant information to the observers, it is likely that modeling will facilitate learning in the cognitive phase of skill

acquisition (Feltz, 1982). Social learning theory posits that behavior is learnt through central processing of response information before it is performed.

MODELING AND MODEL CHARACTERISTICS

Yes, I can do that because he looks like me!

Perceptions of self ability do indeed play a crucial role in all achievement motivation. For instance, Bandura's social learning theory (1977) posits that the confidence in own ability is key in self-efficacy. Atkinson's theory projects that an individual's competency beliefs in a task performance and their perception of success probability are constantly highly correlated. Rotter's (1966) locus of control theory contends that children who believe to be competent academically also most likely believe to control rewards associated with academic success. Also posited (Weiner's, 1974) in the theory of attribution is the argument that individuals who have greater self-competence beliefs are likely to credit their ability and effort for success and failure to other causes.

It has also been established that individual's self-confidence is boosted when similar others succeed at the tasks and challenges. Similarity has been touted as key factor in modeling success. Similarity is now widely exploited in role modeling situations and its value has almost become conventional wisdom.

In physical activity and sports settings, findings in previous modeling studies have consistently shown that in the learning of many human behaviors particularly the learning of highly salient motor skills, child observers may be particularly

motivated to achieve by peers and adults (Landers & Landers, 1973). These authors note that in ascertaining the motivational effects accrued from observers viewing models in the absence of direct rewards, the characteristics of the model are an important consideration. With the exponential increase of interest in modeling and demonstrations, so has the interest in model characteristics as key influencers in observational learning, Magill, (2004).

Within any social group some individuals are likely to command greater attention than others. Modeled conduct varies in effectiveness. The functional value of the behaviors displayed by different models is therefore highly influential in determining which models people will observe and which they will disregard. Attention to models is also channeled by their interpersonal attraction. Models who possess engaging qualities are sought out, while those lacking pleasing characteristics are generally ignored or rejected.

It is apparent from this contention that the impact of model characteristics on the learning motor tasks is profound and certainly has far reaching implications on the extent of learning or skill acquisition through observing models. This argument indicates that there will always be a differential in amount and quality of learning from models by observers depending on the characteristics or qualities possessed by models and the perceptions of the observers. Consequently, there are various ways of considering the influence of model characteristics and a multitude of confounding factors to consider with a view to gaining a modicum of understanding.

In review of modeling literature by Gould & Roberts, (1982) *social* factors that influence modeling were identified. Studies manipulating different variables have attempted to explain different social factors that influence the effectiveness of a model in conveying information to the observer. This is largely based on Bandura's (1977) social learning theory which was developed to explain behaviors that occur as result of social interactions. This theory provides a framework that has proven very useful to the researchers in examining relationships among cognitive processes, modeling and motor skill acquisition.

Bandura's, (1986) social cognitive theory pointed out that the psychological effects of modeling are mediated by an individual's perception of certain model characteristics that include age, sex and skill level. In his revision and expansion of the social learning theory, he pointed out that observers selectively attend to specific features of the skill being modeled as well as to the features of the model. This, he pointed out, is then projected as cognitive representation that serve the crucial role of directing future movement. Essentially, when an individual observes a model, the observed cues are transformed into a symbolic memory code of some kind which forms the basis of later translation into movement. A combination of all cues direct this process.

Models demonstrating high levels of competence are considered to be experts, and attain a status that will more likely command attention and serve as more influential to the observer's behavior than models that lack these qualities. Influential models are more apt to be attended to, stimulate more practice and have their actions reproduced even though there is no direct interaction between the model and observer. Earlier in this review, it was pointed out that models showing high levels of competence

are viewed as experts, are often older and control resources valuable to observers and are more likely to have their skills attended to, rehearsed and reproduced even in non reinforced conditions (Bandura, 1969).

Experiments investigating a skilled performance by teacher and peer model, (Landers & Landers, 1973; Lirgg & Feltz, 1991), proffered interesting insights into modeling. The object of these studies was to establish whether the skill level of the model affected the learning of the motor task. Skilled model performances were found to be important in improving skill outcomes. Results from these investigations indicated that children who observed the skilled teacher posted far better performance than those viewing an unskilled teacher or skilled peer. There was a clear difference in performance between groups. This study nearly almost approximates Bandura's predictions that observers will render more attention to older, skilled and higher status models.

Perhaps the most fascinating findings of the Landers & Landers (1973) study that served to underscore the critical role that model characteristics play were the results that indicated that learners observing an unskilled teacher fared worse than those observing an unskilled peer. This was because the unskilled teacher was held to higher standard by the learners/observers but set up a lower standard of performance on the Bachman's ladder task which in this case was easily matched and thus precluded the observers from attempting a higher level of the task. The teacher was expected to post better performance but the poor performance stymied observers attempts.

The next phase in modeling research recognized the psychological effects of modeling. This was characterized by the inclusion in the consideration of observational learning such psychological constructs as self-efficacy, anxiety and fear

(McCullagh & Weiss, 2001). This insightful consideration of modeling views peer models as enhancing self-efficacy and the desire to learn and perform better. In fact these authors note that the key mechanism by which modeling influences psychological responses and motivational behavior is through this characteristic (age similarity) to the model.

Other studies done to test Bandura's predictions include McCullagh's (1987). In this study, observers were presented a high status model and a low status one with the view to testing the hypothesis as to whether the model characteristic of status had an impact on observer performance by influencing attentional phase of modeling. Results showed that those viewing a high status model performed better than that viewing low status model. Respected models commanded more attention and therefore stimulated greater skill acquisition.

Model-observer similarity refers to characteristics common to both the demonstrator and the observer such as age, gender, race or ethnicity and ability level (McCullagh, 1986; McCullagh & Weiss, 2001). This is in line with the social learning theory which also suggested that model similarity elicits increased attention from observers. McCullagh (1986) set out to examine the effect of model similarity/dissimilarity on attention. Results showed that participants performed better after viewing a model that they perceived to be similar to them than from viewing one that they perceived as dissimilar to them. The similarity characteristic manipulated in this study was gender.

Another perspective from which researchers in modeling of motor behavior have found apt to investigate model similarity effects is through considering

self-efficacy in the manipulation. This is based on Bandura's (1977) conceptualization of self-efficacy. Bandura described self-efficacy as the strength of a person's conviction that he or she can successfully execute the behavior required to produce a desired outcome. He predicted that the stronger an individual's self-efficacy, the more likely he or she will exhibit greater effort and task persistence. This is important here because similarity has a direct influence on personal relevance of the modeled performance for the observer resulting from the expectation that self-efficacy will be raised merely by the observer perceiving themselves as possessing capabilities necessary for performing proximate activities. Several characteristics of relevance to model-observer similarity have been considered when designing studies to examine modeling interventions on performance and psychological responses. Findings of modeling research based on Bandura's theories have indicated that various characteristics of the model might serve to heighten an observer's attention and motivation (McCullagh et al., 1989; Meaney, Griffin & Hart, 2005).

Studies done to test these predictions include the investigation that combined model similarity with self-efficacy statements in a study featuring an endurance task (Gould & Weiss, 1981). They hypothesized that those models similar to the observers making positive self-efficacious statements significantly enhanced the performance of the observers as compared to those viewing a dissimilar model. This study concluded that models that were similar to observers exerted a more potent learning impact in modification of performance.

It has also been demonstrated that similar models are more effective than dissimilar models in conveying learned helplessness to observers, (Brown & Inouye,

1978). Similar models significantly caused observers to persist for comparatively shorter periods of time when confronted with failure and adverse consequences. It was noted in this study that similar models were devastatingly more efficient in conveying helplessness than they were conveying a positive attribute. In other words, identification with a model that was similar to the observers had a far more portent impact in imparting helplessness than all the other factors, which clearly underlined the impact of likeness in modeling situations.

Investigations on only female participants to avoid the confounding effect of the model's gender demonstrated that girls observing a female model (similar model) transferred significantly more learning strategies than those observing a model that was male (dissimilar model) even when he was skilled (Meaney, Griffin & Hart, 2005).

Similarity in terms of ethnicity has not been considered in many of these studies despite its obvious influences in the social realm. In other literature related to modeling, ethnic features have been identified as salient features that do in fact have influences on instructional and learning settings, a situation where modeling is not only desirable but often called upon. Schunk (1987) made a strong case yet for the influences of model similarity:

Similarity to models is hypothesized to be an important source of information for gauging behavioral appropriateness and formulating outcome expectations. In general, the more alike observers are to models, the greater is the probability that similar actions by observers are socially appropriate and will produce comparable results. Model attributes often are predictive of the functional value.

The significance of race in the American society is huge, (Ladson-Billings, 1994). She discounted the possibility of a teacher not being able to notice the race or ethnicity of the students owing to the salience of the characteristic of race while arguing against the notion of colorblindness. This contention acknowledged, at least in part, the putative role that race features play in instructional situations. In the same vein, it is logical to argue for the improbability of learners not noticing or not being influenced by the race or ethnicity features of the teacher given the obvious distinction of many racial features. Physical activity teachers, perhaps more than in any teaching roles, play models for learners by way of demonstrating tasks to be learnt.

SIMILARITY EFFECTS IN ROLE-MODELING

What is role modeling?

A role model is an individual who is considered to be an exemplar or the one who is worthy of imitation, (Yancey, 1998). Also, a role model could be defined as an individual who acts as an inspiration to another or a group of others by way of personal contact and relationships (Ingall, 1991).

Role modeling differs from modeling under consideration in this research in the sense that modeling, often involves isolated or specific episodes of behavior. As defined earlier, modeling implies a situation where an observer watches a model perform, a task or part of a task, then after learning through the observation of the model's behavior reproduces the observed behavior or action. And as Schunk (1987) described, a model is the individual whose behaviors, verbalizations and are attended to by an

observer which then serve as cues for subsequent modeling. This contrasts modeling with role-modeling because in the later, a wide range of behaviors or actions is involved. However, the basis for the two is the same.

Research has found role-modeling to have direct effects in behavioral changes. For instance, the relationship between role-model choices and role-model characteristics as well as psychosocial functioning among multi-ethnic adolescents, (Yancey, Siegel & McDaniel, 2002), found out that adolescents were able to identify a specific role model that was related to higher self-esteem, higher performance in school and a stronger ethnic identity. That investigation also demonstrated that adolescents tended to have preference to, and more appreciation for individuals who have overcome similar challenges as themselves. Often these individuals were of their own ethnicity.

In role-modeling research, there has been evidence, often touted as self evident, that a similar model will do a better job at being an exemplar in a multiplicity of requisite behavior as compared to models that are not similar to those individuals that role-modeling is intended to benefit. For instance, the process of using athletes and other professionals to promote change in educational process for youth not doing well in school, (Barnett & Bernard, 1993), is a notable example. The program used professionals from across the disciplines. This was meant to induce behavioral change among the learners by way of observational learning, identity formation and special learning theories. This program implicitly cast ethnic similarity as having a potential to promote behavior change through identity formation. However, it is not clear whether similarity in role-modeling benefits an individual only in the acquisition of the overall intended

behavior as opposed to specific episodes of modeling individual actions like a specific motor task. This notion is critical to consider in the teaching or learning/situations.

The work of Andersen & Cavallaro (2002) examined whether children show a tendency to choose role models who are similar to themselves. The findings were noteworthy, as it was reported that children tend to choose those models that they find relevant and most importantly those that they can compare themselves with. The results of the study were interesting in the sense that white and black children were more likely to choose media heroes of their ethnicity (67% for both). In contrast, Latina and Asian American children tended to choose more white media heroes 56% and 40% respectively. 28% Latino and 35% Asian Americans chose role models of their own ethnicity. The results of this study are particularly instructive for the current investigation as this study seeks to establish whether the assertion that a similar model is more effective in conveying modeling cues for a specific motor task just as it is generally supposed to be effective with the process of role modeling.

When American Indian adolescents were asked who they have learnt most from, (Brown, Gibbons and Smirles, 2007). The number of people that adolescents reported to have learnt most from turned out to be significantly related to tribal identity. Most remarkably, this study highlighted the importance of tribal adults getting active in education and encouragement of tribal youth.

Psychological modeling (McCullagh, & Weiss, 2002; Bandura, 1977; 1986), posits model-observer similarity as the situation where the demonstrator and the observer share a common characteristic which could be age, gender, race or ethnicity or

skill level. Model observer-similarity exerts its influence strongly by virtue of the fact that it affects attention and motivation of the observer. There is also the factor of vicarious experiences (which implies that watching others perform successfully motivates us especially when they are significant others). Ethnic similarity between the model and the observer, which has been mentioned as one of the characteristics that influence modeling, but has least been examined, is the thesis of this study.

The influences of teachers

Teachers assume positions in education where they are considered role-models, or actually models. Researchers have long alluded to the fact that PE and health education teachers convey important messages to the learners they teach vicariously. Teachers convey messages to students either consciously or unconsciously through their actions and appearance, (Glover, 1978).

Theoretical perspectives

In a bid to anchor the process of modeling in terms of a learning theory, researchers have attempted to answer the questions as to why observing a demonstrated motor task or skill benefits its learning by observers. The response to this question may look apparent enough but examining different theories that have risen to explain observational learning, reveals the complexity of the process of modeling. Multiple theoretical views have been advanced to put the modeling process in perspective. It is important to identify these viewpoints to help in understanding the process of modeling.

The predominant theories that have recently been utilized developed as a result of improvement and expansion and improvement of earlier theories.

SYMBOLIC REPRESENTATIONAL THEORY

Symbolic representational theory was promoted by Sheffield (1961) in the nascent era of research in modeling. Starting off as a program seeking understanding of instruction dynamics, specifically programmed instruction, Sheffield investigated the instructional efficacy of filmed demonstration. The chief objective of the US government funded program was to establish the effectiveness of using filmed demonstrations (Sheffield, 1961).

It was from this effort that the first crucial viewpoints of modeling theory developed. Sheffield advanced a symbolic representational theory which posited that when an individual observes a demonstration of a motor skill, he or she generates a cognitive symbolic representation of that skill, which later acts as a blueprint to guide the overt reproduction of the skill. This perceptual blueprint enables the individual to symbolically recall the modeled act and translate this sequence of perceptual and symbolic cognitions into overt performance (Sheffield, 1961; Gould & Roberts, 1982). Gerst, (1971) concurs with the notion of symbolic coding with the assertion that in a demonstration, observers do in fact reorganize stimuli into larger inclusive categories and transform them into symbolic systems. Gerst, (1971) considered modeling to be an information system that lends itself readily to coding mode. This, he argued, makes storage and retrieval of the symbolic information easier.

The highlight of symbolic representation viewpoint was the analysis of modeled acts by breaking them into units whose boundaries were cut along the inherent dimensions of the task. Every movement, be it ambulatory or otherwise, has got a dimension that is unique and inherent to it. In other words, this perspective looked at motor tasks as consisting of segments that are put together when modeling to form the whole task. These units which Sheffield characterized as Demonstration Assimilation Spans (DAS) were theorized to facilitate modeling with the learning of a motor task proceeding from part to all. Demonstration Assimilation Spans (DAS) were defined by Sheffield (1961) as “the natural units or parts of a sequential task that may be subdivided along a natural dimension inherent in the task itself”.

THE VISUAL PERCEPTION PERSPECTIVE

Another theoretical viewpoint that is widely recognized in modeling research is the visual perception theory that was popularized by Scully & Newell (1985) which outlines a comprehensive account of visual processes that form the basis of observational learning. The work (Scully & Newell, 1985), focuses on the perceptual information that is picked up by the observer which is then utilized in future motion production. This viewpoint advocates that the relative motion information perception of motion that observers employ to make movement patterns are associated with specific movement. Relative motion refers to the space and time relationships between a person's body parts. In other words, relative motion is the organization of the performer's movement pattern like ambulation or other movement pattern in relation to the

environment. Movements like gait-walking or running are very distinct and easy to tell apart.

INFORMATION PROCESSING THEORY

Another viewpoint in modeling research that has been used by investigators is the information processing framework which focuses on the recognition and recall of relevant information. This posits three informational functions of processing information as described by several authors (Sheffield, 1961; Scully & Newell, 1985; Landin, 1994; Wrisberg, 1993; Magill, 1993). They argued that what is learned from a demonstration is a sequence of perceptual and symbolic responses:

- a. Decision processing: This posits that highly perceptual processing abilities facilitate early recognition of correct stimuli. While it is given that skilled performers automatically search for the display of information that will guide their response, it is necessary to direct a novice's attention to the relevant task stimuli, Magill, (1993).
- b. Perceptual processing: This basically refers to the ability to select the correct response for a given situation. More skilled performers tend to have a wider repertoire of responses and appear to be ready to select the correct response at the short notice, Wrisberg, (1993).
- c. Effector processing: is one final stage that is connected to decision processing and is concerned with the initiation of movement commands, Wrisberg, (1993).

Another notable point of interest came from (Wrisberg's, 1993) examination of the acquisition of motor skills by skilled performers. His investigations established that among skilled performers, a striking characteristic was their tendency to chunk or cluster together multiple components of movement. The most interesting aspect that information processing analysis explained by this theory is that, contrary to assumption, when the task has a big information load (the number of procedural steps or strategies involved to perform) it is more susceptible to modeling influences as compared to low information load tasks (Scully & Newell, 1985).

SOCIAL LEARNING / SOCIAL COGNITIVE THEORY

This theory posits that social learning occurs as a result of social intercourse which, described broadly, implies that this process generally involves the acquisition of socially expected behavior patterns through social interactions. Bandura (1977) advanced the social learning theory with a view to explaining the phenomena of observational learning or modeling more comprehensively than it was explained by the Sheffield viewpoint. This theory identified cognitive functions as playing a far greater role in the acquisition of human behavior.

According to Bandura (1977), in social learning, people's psychological functioning is explained in terms of a continuous reciprocal interaction of personal and environmental determinants. That behaviors and actions that people are inclined to engage in at any time are those that are occurring in their immediate environment. Bandura noted that it is highly unlikely that we rely entirely on our own actions in learning complicated tasks. Most task learning takes place as a result of observing other

individuals modeling behavior. Learning through modeling therefore implies that majority of behaviors and actions that people engage in are acquired by observing others in the immediate environment.

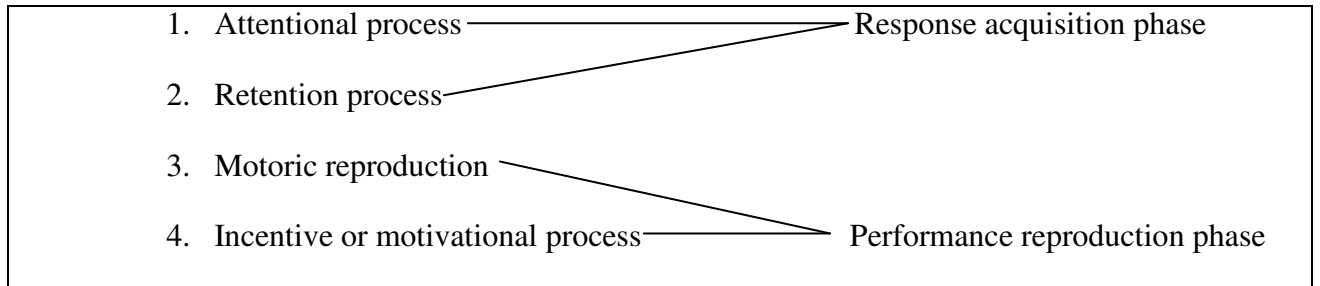
Social learning theory assumes that modeling influences operate principally through their informative function, and that observers acquire mainly symbolic representations of modeled events rather than specific stimulus response associations. Modeling influences learning principally through their informative function. During exposure observers acquire mainly symbolic representations of the modeled activities which serve as guide for appropriate performances.

Bandura's four phase process conceptualization of modeling provided and has continued to provide the most comprehensive and exhaustive framework with which the concept of modeling is explained. This conceptualization of the modeling underlines the complexity of the process of modeling. The numbers of processes, factors that affect each process, as well as the different dynamics that are at play in every instance of observational learning makes this phenomenon such a tantalizing and interesting prospect for researchers to investigate. This explains why the field has generated so much interest and focus among observational learning researchers.

The four phases of the modeling process according to this theory are shown in table 2.1.

Table 2.1

Four sub processes of Bandura's theory



Attentional processes

The first and most remarkable process of information acquisition in modeling is the attention phase. Observers will not be able to learn much from observing if they are not going to pay attention to, and perceive correctly the key elements of the demonstrated action. According to the social learning theory, behavior is learnt through central processing of response information before it is performed. Bandura (1977) vividly elaborated this process:

People cannot learn much by observation unless they attend to and perceive accurately, the significant features of the modeled behavior. Attentional processes determine what is selectively observed in the profusion of modeling to which one is exposed and what is extracted from such exposures. A number of factors, some involving the features of the modeled activities themselves, and still others involving the structural arrangement of human interactions, regulate the amount and types of observational experiences. Among the various attentional determinants,

associational patterns are clearly of major importance. The people, with whom one regularly associates, either through preference or imposition, delimit the types of behavior that will be repeatedly observed and hence learned most thoroughly (p.24).

From this explanation of the notion of attention, it is very apparent that attention is a very crucial part of the modeling process. It is indispensable because the attentional phase it is the foundation to all the subsequent phases. It forms some kind of gating mechanism because it is during this process that the information of the action to be acquired is either selected or disregarded. Different things that may affect attending to a model become very important points of consideration. The crucial role that attention plays (Abernathy, 1993) that it may not be possible to identify a factor more important to learning sports skills than paying attention to the task at hand.

Retention processes

Modeling is not just a temporal reciprocal process. A temporal reciprocal process implies a situation where modeling is said to have occurred as a result of one instance of modeling getting repeated at a later time. In other words, there should always be a lapse of time between the time of observation and when the imitation of the modeled act occurs. The information to be used to repeat the modeled act by the observer will need to be “coded” and “stored” so that it is used at that later time to produce the act. The information to be stored needs to be sequenced in a particular manner, depending on the action that is being modeled, so that it can aptly be used to replicate the observed act.

The sequential ordering and “filing” of this information for future activation when the appropriate conditions and cues are presented is what retention is all about.

Bandura (1971) identified key elements that make this coding process possible. He projected in social learning theory, that the observer’s function is that of an active agent who transform, classify, and organize modeling stimuli into easily remembered schemes rather than as quiescent cameras or tape recorders that simply store isomorphic representations of modeled events. An observer is active in the sense that the process of making the codes is an ongoing and engaging undertaking. Retention of coded information is not considered a literal pick and store mechanism. The information to be coded is prepared for storage through for instance repeating or rehearsing it. It can also be coded by reducing it to verbal cues which make it easy to cue for reproduction of the task. It is suggested that individuals are more likely to code better and recall what they find interesting and what makes sense to them.

A vivid take on the workings of the process of motor skill acquisition via modeling, (Adams, 1990), describes how a blueprint for acquired responses are coded and strengthened with a view to future reproduction, he asserted that response potential for movement is strengthened if the encounter with a movement requirement, either by watching it or performing it is then followed by a period of mental activity called mental practice. Thinking about the movement makes the mental impression or imprint strong. The theory is not well articulated among investigators of mental practice but, like observational learning theory, it is usually assumed that the mental image and verbal coding come together to define a cognitive representational system. One or both of them are manipulated during the mental practice period to strengthen the response.

In coding and strengthening the responses, mental imagery is a critical factor in the learning and retention of images capable of generating acquired responses (Masson, 1990). He also noted that the availability of this representational system is central to the claim that motor skills can be improved even in the absence of actual physical movement. Critical movement can simply be observed or generated by an imagination that leads to the development of image representation resulting in modeling skilled performance. In conceptualization of modeling in Bandura's terms, the action of attending to the model is a very interactive one. Interaction plays a big role in the modeling process. The observer has to relate to the modeled action and the model at some level. Similarity to the model is putatively one level that comes to mind here and more significantly so.

Motor reproduction processes

Motor reproduction process has to do with the actual reenactment of the modeled acts by the observer. The third process in modeling logically follows the first two. After attending to and obtaining relevant information from the modeled action, then coding and storing it with a view to reproducing it at a later time, the next process will be to retrieve the coded message when the appropriate cues to replicate the modeled act are presented. Bandura theorized that reproducing actions is a complex process that involves temporal and spatial organization of the coded information.

In the final phase of the behavioral reenactment, the responses are selected and organized at the cognitive level. The amount of observational learning that will be exhibited behaviorally partly depends on the availability of component skills. The

elements that are necessary for the reproduction process include the observer's physical capability to perform the observed action and the nature of the task. The observer's physical capability to perform the task is a function which will depend on developmental stage of the observer and their physical abilities relevant to the task.

Motivational process

The motivational process in modeling implies the incentives or the motives behind the willingness to reproduce a modeled act. It is probable that an observer may know how to perform a motor skill that they have observed but fail to do so because they have no motivation. Motivation encompasses those conditions which encourages the observer to act on the coded blueprint when the conditions to do so are presented. Extrinsic reinforcement, self-reinforcement, and vicarious reinforcement techniques are cited (Bandura, 1969; Gould and Roberts, 1981) as the inducements that will make it favorable for the modeled motor information to be re enacted.

Similarity between the model and the observer is the ultimate point of motivation, (McCullagh & Weiss, 2003). In fact they argue that there is nothing more motivating as observing a significant other perform, especially successfully at a task. This is because it prompts an observer faced with a challenging task to pose the question to himself or herself, "If the significant other can do, so can I". It is therefore conceivable that since the characteristic of ethnicity is the most salient feature, it becomes the most obvious feature of comparison to consider.

MEDIATION CONTIGUITY THEORY/ COGNITIVE MEDIATION THEORY

This is the theory of modeling that by far has garnered most traction and has become the most popular with researchers in observational learning. It is the basic framework that supports most of the current research in modeling. It is in essence an evolution of Bandura's social learning theory that subdivides the modeling process, according to the social learning theory, into two phases incorporating the four sub-processes of attention, retention, motivation and motor reproduction outlined earlier. The two phases are: Response acquisition phase and performance reproduction phase

Bandura (1974) specified that the mediational response acquisition and is composed of two sub-processes, namely attention and retention. This involves attending closely to the model and perceiving specific cues accurately and then symbolically representing and coding them for the purpose of future reproduction.

The performance reproduction phase is composed of the motor reproduction and motivation sub processes. This organization created a framework that has proved very useful in modeling research with the specification of the factors that influence each phase.

The confluence between the Sheffield and Bandura's viewpoints on modeling is in their agreement that modeling influences operate principally through their informative function. Their theories agree that observers acquire mainly symbolic representation of modeled events, rather than specific stimulus response associations (Bandura, 1974; Gould & Roberts, 1982).

SELF-EFFICACY THEORY

In order for models to be effective in influencing observers to perform modeled tasks, particular behaviors have been found to be highly dependent on characteristics of the model, Bandura, (1997). Self- efficacy theory posits that if a model is of similar age, gender, or ethnicity for instance, rather than dissimilar to observer while demonstrating a highly skilled activity, chances are higher that an observer will be more motivated in the former situation as compared to the later. One review of self-efficacy literature (McCauley & Mihalko, 1998), examined as many as a hundred studies that have employed this conceptual framework.

The key components of the self-efficacy theory include: First, self-efficacy include observers' perception of their own capability to perform a task. The second crucial factor in self-efficacy theory is outcome expectancy which is an observer's sense of likelihood of outcome for a specific behavior. If observers are convinced that a behavior will yield a specific outcome, there is an increased expression of intention and adoption of the behavior. Finally, self-efficacy also has the component of outcome value, which is an increased chance of adoption of behavior or action if the outcome of such a behavior is desirable.

This is one of the theories that have specific relevance to this study. And the reason for this is that a direct comparison will be made between the self-efficacies of individuals observing a model that is ethnically similar to themselves and those observing a dissimilar one.

SOCIAL IDENTITY THEORY

Social identity theory posits that individuals possess membership in multiple social categories that vary in commonality and distinctiveness. It provides the basis of a common in group identity linking individuals with each other. A fundamental assumption of this theory is that individuals' group and personal identities tend to be inversely related, so that when one is salient, another one recedes in importance. In other words, social identity theory attempt to explain inter personal behavior in terms of social group membership.

So, in contrast, when a social identity is salient their decision making will reflect a greater concern with outcomes obtained by the other person with whom they are negotiating. As a result, negotiators for who a shared social identity is salient will prefer relatively more equal outcomes that minimize the difference between their outcomes.

Relationships between people imply obligations and that these obligations are based on communal relationships, the strength of the relationship determines the directness and immediacy of required exchanges, Mills & Clark, (1982). According to Mills & Clark (1982), stronger relationships do not require direct and immediate exchange of rewards as weaker ones.

INFLUENCE OF SIMILARITIES ON LEARNING IN OTHER FIELDS

There is a considerable amount of literature in other fields that have accorded lots of attention to the similarity effects on acquisition of skills and behavior modification through modeling. In most cases the similarity effects are readily

acknowledged but the specific model characteristics considered influential are only alluded to. As it is discussed elsewhere in the literature review, role modeling widely employs models of similar ethnicity to help in behavior modification and acquisition. The importance of this characteristic in modeling has not been expounded well but is tacitly believed to be a key quality in the model.

Influence psychologist, (Cialdini, 1984) argued that the principle of social proof operates very powerfully when individuals are observing the behavior of people just like themselves. Social proof posits that individuals are likely to engage in behavior when there are many people around them doing it already. It is the conduct of such people that gives us the greatest insight into what constitutes correct behavior for ourselves. Therefore, we are more likely than not to follow the lead of a similar individual than a dissimilar one. Similar individuals tend to validate behavior.

Hornstein, Fisch and Holmes (1968) demonstrated the most portent influence of similarity/dissimilarity in real life situation with their study of the effect of similarity on the decisions of New Yorkers. In a study, wallets containing some amount of money and information – name, address of the owner- and a note indicating that the wallet had been found earlier by another person and only got lost before he could hand it over to its rightful owner, were dropped strategically in several places around the city. The finder expressed being glad that he had got the opportunity to be of service in returning the wallet. The chance to render the gesture brought an immense sense of good feeling to the finder according to the note. Effort to make it look like the first finder of the wallet was actually on the way to returning it. The overall object of the experiment was to determine the likelihood of a new finder returning it to the owner.

The letters were varied in the sense that half of them were written in standard English, to imply that that the person who lost it and had written the note was an average American (similar to most of the people that were bound to come across the lost wallet) and the other half were written in broken English, consistent with a recently arrived foreigners (dissimilar to most people in the vicinity of the misplaced wallets). The later treatment of course was meant to depict either similarity or dissimilarity.

The findings were very interesting in the sense that only 33% of the wallets were returned when the person who originally found the wallet was depicted as dissimilar to most people who were likely and who indeed picked up the misplaced wallets. On the other hand, a staggering 70% of the wallets found their way back to the “owner” when they were cast as having been previously found by the a person depicted as being similar to the new finders.

The unmistakable conclusion of course from this study was that people are given to making decisions or engaging in proper behavior for themselves by using the actions of others and more importantly, when the person they are basing these decisions are perceived as being similar to themselves.

Another study that zeroed in on one aspect of similarity and demonstrated its interesting effects was that done by Garner, (1999) quoted in Rhoads & Cialdini (2002). He fashioned an experiment to determine the return rate of surveys. One set of cover letters accompanying the surveys was manipulated by having the name of the requester to sound similar to the survey takers’ name in some way. For instance, Michael Egan became Mike Edgen; Cynthia Johnston received a request to take a survey from Cindy Johansson. The return rate by mail of the surveys after that minor manipulation,

when compared to the requests send earlier without manipulation, was more than double. The researchers were able to observe the same effect in a follow up study. These results goes a long way to show the profound impact that similarity, even in the most subtle form, exerts on decisions that people make every day. Given that names are sometimes distinctly ethnic, this merits a closer consideration.

Another realm that goes along with teaching and instruction and which has drawn considerable interest among researchers of similarity influences is counseling. In this area, the main concern is establishing rapport and achieving effective outcomes. It has also been determined that the influence of similarity impact counseling relationships (Kunce & Anderson, 1970). Counselor-client similarities do influence referrals. Counselors will more likely refer a client to another counselor on the basis of perceived similarity between the available counselor and client. This was consistent with their hypothesis that given a free choice situation counselors would be inclined to make references on the basis of subtle similarity between characteristics in clients.

Bryne, Griffin and Stefaniak (1967) asserted that the behavior of another individual is positively reinforcing to the extent that it is similar to one's own. Earlier Byrne (1961) had found out in a study that homogeneity or similarity of attitudes between a stranger and subjects led the subjects to judge the stranger as more intellectual, more moral, better adjusted and more informed than a stranger with attitude that was heterogeneous or dissimilar to the respondents.

Mandelsohn (1968) demonstrated that client-counselor similarity resulted in long term willingness to engage with a counselor by client whereas when the counselor-client match was dissimilar, the length of engagement was invariably shorter.

This study also concluded there was a greater client commitment to counseling when they closely compared with the counselor on a cognitive-perceptual level. Also, clients turned up for counseling more often than not when that comparison was closer compared to when the two were outright dissimilar. In fact Mandelsohn & Geller (1963) had postulated that therapist-patient similarity or dissimilarity is relevant to the outcome of the therapy.

SELF -EFFICACY, MODEL SIMILARITY AND ACQUISITION OF MOTOR SKILLS

McCullagh & Weiss, (2002) vividly described the influences of model similarity in physical skills acquisition. They pointed out that model observer similarity is where the demonstrator and the observer share salient features. The characteristics that they may have in common in a modeling set up could be gender, race or ethnicity, and the ability level. Model observer similarity works on the reasoning that similarity has significant impact on observer's attention and motivation.

Again, going back to Bandura's theories it is possible to draw a clear link between influences of model features and self-efficacy. Bandura (1977) described self-efficacy as the strength of a person's conviction that he or she can successfully execute a behavior required to produce a certain outcome. He further notes that efficacy is not a global trait but rather a situation specific factor that can influence a person's choice of activities. Also, it influences how much effort is expended in a bid to accomplish a task and how long one will be willing to persist in the face of obstacles. Essentially, the stronger an individuals' perceived self-efficacy, the more likely he or she will exhibit greater effort and task persistence. Like, Bandura, (1986) projected, a model similar in

some respect to the observer will most likely elicit greater attention and therefore be able to readily render the observer to discern more detail and information from the task being demonstrated. So, Bandura's ideas on efficacy not only predict that self-efficacy expectations and influence performance, but also that these expectations are viewed as components that can be readily modified in an individual (Gould & Weiss, 1981).

To add to this, the study conducted by Brown & Inouye (1978) to test the hypothesis that learned helplessness can be induced through modeling, the effect being mediated by perceived similarity in competence. They established that participants who perceived the unsuccessful performers at an anagram task to be of comparable ability, persisted through the task as compared to those perceiving the model as less competent than themselves. In other words the most striking result of the inquiry was that the higher the participants expected self-efficacy, the longer they persisted. Observers readily absorbed feelings helplessness from similar models than did those observing dissimilar models.

Another interesting demonstration of similarity effects in modeling was that performed by Kadzin (1974) who sought through the use covert modeling (using imagined models as opposed to live or filmed models) to established the effect of similar models on imitation behavior. The conclusion was that the greater the perceived similarity between the model and the observer, the greater the imitation. Gould & Weiss (1981) aptly summarized the influence of similarity of model on the observer aptly thus?

All these point out to an affirmation of Bandura's postulations that modeling is enhanced when models share perceived similar characteristics with observers. These more evident especially when specific characteristics that influence

modeling are considered. Findings lend credence to the assertion that aspects of similarity impact skill or behavior acquisition. This is particularly important when we consider Bandura's point that modeling is the primary means of modification of self-efficacy and performance.

Essentially, the individual (observer) persuades herself or himself that if a similar other can do it, so can her or him and that by the same token, modeled failure by those perceived to be similar can have a detrimental effect on observer self efficacy. Simply stated the individual asks herself/himself, "If they cannot do it, how can I?" (McCullagh & Weiss, 2002)

METHODOLOGY

Preliminary Study

Leading up to this dissertation, a pilot study was done that is closely related to the current study. Only difference being that a college population was employed in the earlier study.

The purpose of the investigation was to determine the influence of the ethnic characteristics of the model on the acquisition and retention of novel sport concepts in an observational learning episode. Specifically, the investigation looked at the influence of a model's ethnic features on an observational learning of concepts of a novel activity demonstrated. It was predicted that those observing an ethnically similar model will retain more information from the demonstration than those observing an ethnically dissimilar model.

METHODS

Participants

The sample consisted of consisted of 198 undergraduate students (N=198). The participants were drawn from college classes in Southern USA. They came from different demographic backgrounds. The demographics by race/ethnicity as indicated by the participants were; white (N=69), black (N= 74), Asian (N=11), Latino (N= 41) and 3 identified themselves as other. There were 78 males and 119 females. The participants were randomly assigned to the two experimental conditions. Video clips of the skills involved in cricket used and matched by demonstrated skill. One group (N=92) observed

a video clip featuring black models with a voice over explaining and demonstrating concepts and skills in the game of cricket. Another group (N= 106) observed white models with exactly the same voice over.

Televised models have the same effect as live models on imitative behavior (Bandura & Mischel, 1965; Feltz & Landers, 1976). The skills and concepts explained and demonstrated in the video clips were identical with the same narration/voiceover. The game of cricket was identified as ideal for this investigation as it was purported to be novel which most of the participants were thought to be only vaguely or not familiar with. Because cricket is not one of the mainstream sports in the United States, it was hypothesized that most of the participants will find it a novel sport. The models dealt with concepts in the game of cricket like batting and fielding, playing positions, scoring and basic rules of the game. The models' actions in the clip coincided with the concepts being explained and in some segments; the video was slowed down to emphasize the movements being explained. The racial features of the models were emphasized by stilling sections of the footage and making close up views of the models as that was the key point of this investigation.

PROCEDURE

Groups of participants viewed the video footage and were then supplied with a short multiple choice questionnaire with twenty items that were intended to test the amount of information that they could recall from the video. An additional five open ended items were provided to help obtain qualitative data regarding their interest, confidence in performing skills, ability to teach skills, and the helpfulness of the model.

Participants were given ample time to complete the test. All the responses were then graded to determine the number of items that each respondent could recall from viewing the video.

RESULTS

The responses were scored to determine the percentage score for each participant. The responses were coded according to the model they had observed and frequency distributions calculated. The retention and recall data was analyzed via one way ANOVA. The results of the ANOVA for between subject effects revealed significant main effects for gender $F(1,131), p = .000$, and there was also significant interaction effects of condition by gender $F(1,131) = 8.773, p = .004$ and race by gender $F(3,131) = 2.680, p = .050$. Overall, participants who observed a white model retained and recalled more information than those observing a black model.

Model Similarity: A Qualitative look

In the second part of data collection, respondents were asked to respond to five open ended questions that were intended to elicit information about their understanding of the key concepts of cricket following the demonstration.

These were the questions that were to solicit the responses:

1. What movement/skills interested you most in the video? Why?
2. So you feel confident that you that you can perform these skills as they were explained? Why do you think so?

3. Describe what aspects you can be able to teach about cricket after viewing this demonstration?
4. Overall, what did you like most about the demonstration?
5. What things about this demonstrator do you think helped your understanding of the skills?

They were intended to help gain an insight into how Bandura's four sub processes played into the learning of these concepts especially the attention sub process. This part of the study was meant to boost the validity of the study by juxtaposing results of the mixed methods as Johnson & Onwuegbuzie (2004) contend; the goal of mixed methods research is not to replace either of these approaches but rather to draw from the strengths and minimize the weaknesses of both in single research studies and across studies. They wrote the responses on blank sheets of paper that were later transcribed verbatim into one text.

The system of analysis used in this case was the one advanced by Strauss and Corbin (1998) which employs progressive coding generating distinct categories in the process. All participants responding to the first part responded to the second part as well. Though often information might be unintentionally transmitted during these interactions, they are no less important in developing student's perception of the immediate setting and the school environment (Harrison Jr. et al, 2004).

Data analysis

Results from the analysis revealed several emerging themes. The themes from the respondents were matched to improve validity. Responses were grouped

together in distinct categories based on themes. Co investigators in this study took a look at the assertions made to harmonize the interpretations and help on creating an agreement on the meaning of responses made by the participants.

In this analysis, a participant is identified by an assigned number followed by the condition or the model observed and finally by their race designation. For example R# 14W/B represent respondent number 14, who is black observed a white model, R#19W/W represent respondent 19, observed a white model and whose race is white. R#64B/B is respondent number 64 whose race is black and observed a black model.

Similar model

Analysis of the responses from participants viewing a model that was similar to them generated distinct categories of features that they cited or subtly implied to have helped their understanding and bolstered their confidence to perform given the chance to teach. In the analysis, this seemed to imply implicitly and explicitly a lot more affect warmth and positive view and attention to a model similar to the viewer. The following are the distinct categories that emerged from the analysis:

Ease of task

Respondents viewing a similar model perceived the task that was demonstrated to be easier to perform and were confident that they had grasped the different aspects of the demonstration which they readily admitted as being novel to them. They made categorical statements regarding the perceived ease of the task they learned. Participant R#11W/W cited specifically the action of bowling as something

interested him most in the video. And about his confidence to perform the skills demonstrated, he responded: “Yes, because they seem like easy tasks....”

Another participant R#22W/W while acknowledging that the task was so different than any sport he was familiar with, he still felt that the novel task will be easy to perform. He identified bowling as the most interesting and on his confidence to replicate the demonstration, he was categorical: “... Yes, because they seem like easy tasks...”

In this category, participants seemed to quickly identify with the task citing its simplicity. The model similar to the participants seems to have informed their perceptions of the demonstration as easy.

Perfect demonstration

Participants observing a similar model also perceived the model to have done a perfect job of demonstrating the skill. Albeit making no reference to the model, they vividly described specific aspects of the demonstrations which implied that they viewed the demonstrator not merely as a demonstrator. This is suggested in the terms and phrases used to describe the demonstration. This was interesting because when similar terms were used in describing a model that was different from the observer, they did not recur with as much regularity. This was more prevalent when the demonstration was performed by white model and white participants were observing. Participants described in vivid detail the eloquence, fluency and the meticulous detail given by the demonstrator. They indicated that the model was systematic and methodical in performing the skill and providing the explanation.

R#28W/W for example stated:

... the movement of the bowler interested me the most because he had to put such much effort into throwing the ball. I am not used to seeing that much movement from a position similar to a pitcher of baseball team.

...I thought the demonstration explained the game fully...

.... the demonstrator repeated some of the more complicated facts which helped my understanding more...

This participant obviously thought that the task that was demonstrated was hard to master but after viewing the demonstration, he developed some degree of confidence that it could easily be performed. The participant gave credit to the demonstrator for simplifying a rather complex task.

R#132W/W also thought that the task was very challenging. However, he was quick to admit having gained an understanding of all the difficult aspects as described specifically because of the fluent and articulate demonstration performed which made it easy.

...The ability to hit a bounding ball at top speeds; because I used to play baseball and it seems cricket would be much harder.

....The concepts behind bowling and scoring

.... Learning a new sport

...The basic but articulate explanations he used made understanding the skills the easier

Even those participants who thought that the task was hard [and indeed emphasized the fact that it was] were also readily convinced that the model helped them understand the demonstration and gave them confidence to perform the task. Participant R#119W/W for instance surmised:

.... The bowler, it looked hard to throw the ball that way...

.... It was interesting to see how cricket is played...

.... It was very informative; each aspect was explained step by step...

The response of one participant was more pointed when it came to perceiving the complexity of the task and the fact that the model helped learning.

R#93W/W:

... The skill of bowling the ball to the batter. Though explained, the actual motion look very difficult and hard to control. It doesn't look like a skill that can be learned just by verbal instruction

...The continuous demonstration of certain skills helps the viewer get an idea of how to perform the skill. For example, when the video showed the batter repetitively. I felt I might be able to actually step onto a cricket field and bat the ball.

Despite this participant acknowledging that the task demonstrated was hard and may not be easily mastered, at the end of it he was confident that he may actually be able to perform what was demonstrated. Though this participant mentioned that the repetition may have helped in comprehension, the affect for the similar model and the insinuation that the demo was perfectly executed is unmistakable.

Another participant seems to suggest an emotional link that somehow formed between the participant and the model with regard to perceived positive attributes and smarts of a model similar to the participant. To this observer, the model was simply not just a mere model demonstrating a skill; he was a great facilitator who appealed to his emotional

senses. With that kind emotional appeal, it is easy to understand why this participant exuded confidence to perform the task that is “explosively and precisely” done:

R#131W/W:

..... The bowler is the position that appealed to me most. He must be strong, explosive and very accurate to do his job well.

..... I would feel comfortable talking about the batsman’s skills because I think I understand his responsibilities. I am still not very knowledgeable about other positions.

.... I liked getting the game of cricket explained to me. I previously had no idea how it was played

.... He was clear, concise and made the rules fairly easy to understand

The visual aspects of the model and the demo sequence

Some of the participants explicitly identified and emphasized certain motions and features of the model. They put the features in a sharper focus and with such clarity that it was easy to discern from their descriptions that the model similar to them could have accounted for the manner with which they attended to the model. A similar model seemed to have rendered the participant more attentive and receptive. They were able to pick up subtle qualities of the demo that indicated heightened levels of attention. For instance, participant R#115W/W romanticized the movement as beautiful and aesthetic.

....The bowling was interesting because they had to get a running start in order to throw the ball

... The beauty and the aesthetics of the sport

Another participant noted the subtleties of the perfect execution of the skill. In the view of R#124W/W the analysis of the demo was meticulous.

... The batting; it takes a great deal of speed and hand eye coordination to perform well...

In the eyes of another participant, the motion of the demonstrator was expressed in deeply visual terms that betray then kind of attention that the observer rendered. Participant R#126W/W observed what interested him most

.... Bowling; the fluidity of motion

Evidence of heightened attention

The participants viewing a model that was similar to them tended to indicate implicitly and explicitly in their accounts a heightened degree of attention lent to the model. This is evidenced by the clarity with which they described specific aspects or movement patterns of the model. This was perhaps best captured by the assertion of participant R#91W/W in this response:

... The motion of the bowler was very interesting because this person has to run to throw the ball. It is also very interesting that the ball bounces sometimes after being thrown.

... I liked the part that showed the bowler throw the ball. I found the delivery method very interesting and unusual. The bouncing of the ball is rather unique.

The fact that this participant was able to relate the sequence of the demo and point out specific points of interest showed the level of attention that the participant must have lent

to the model's performance. Not all this attention of course was directed at the model per se. Some of it went to describing the layout of the field and other extraneous aspects of cricket as exemplified by participant R#125W/W who gave an amazingly detailed summary of the demo.

... Pitching; it has more choices (i.e. variety of options) than American baseball.

Ex. Bounce, running, (lead up)

... 6 points: no bounce before line; 4 points: Rollover line, popping crease, running for multiple points, defending, attacking

Albeit this detailed description of the demo dwelt mainly on the things that are not directly linked to the model, it is conceivable that his attention could have been focused more sharply by the presence of a similar model to begin with.

Dissimilar model

Participants observing the demonstration performed by a model that was not ethnically similar to them had a somewhat different take on the model's demonstration. The way the participant perceived the model that was not similar to them was in stark contrast to the responses offered by those that observed a demonstration by a similar model as documented on the categories that emerged from their responses.

Aspects other than model enhanced understanding / unflattering view of the dissimilar model

A category emerged where participants overtly tended to attribute their understanding of the demonstration on something else other than the models' action. This

group was ready to admit having understood the demonstration and would specifically cite the one thing that helped them to achieve this. Participant R#14W/B and R#17W/B identified the fact that the actions of the demonstrator were put in slow motion and that is what made the demo understandable most and gave them the confidence to believe that they will be able to re enact batting. Other participants cited the text on the screen and the arrows as the greatest helpers. They were very clear about it as their responses indicate. The respondents like R#18W/B thought that:

... The arrows helped out a lot even though I still had difficulty identify some of the players

... The arrows and the text in the video

And participant R#191B/W whose response was;

... I liked the text that appeared on the screen to solidify the ideas

... The narration helped the demonstration

These two examples vividly capture the thinking of respondents in this first category.

This was the most confounding category that emerged. It is apparent from the way the observers described the actions of a dissimilar model - often in unflattering terms - that they would neither lend requisite attention to the model nor take the demonstration seriously.

It ranged from strongly worded assertions like the response from participants R#42B/W who offered that what interested him most was;

... Running from wicket to wicket. Seems silly...

... No, because I have no experience in them

R#19W/L had this to say;

... Bowling action of the ball looks awkward

And participant R#17W/B's comment also fell in that category that used descriptive that just fell short of being disagreeable.

.... I thought batting was different, it is weird

... No, I don't think I could play it

Other responses in this category that were impersonal and unflattering were mildly stated, but nevertheless indicated less than fulsome attention and interest. Participant R#101W/B for instance said:

..... I liked the guy who threw the ball because I thought it looked funny

.... No. Too much info crammed into one segment

And R#168W/B response was curious because of the way the way the observation seemed to evoke a memory of pain

.... The pitcher's technique; it looked painful

.... No, not interested

Other descriptive that emerged from this category included the depiction of the demonstrated skill/motion as scary or unnatural. In all, it is especially significant and striking in this category that after the participants proffered these responses that were clearly less than flattering, nearly almost all of them explicitly stated that the demo did not interest them. It is not farfetched in this case to infer that model dissimilarity influenced this attitude.

Simplicity of the task

In this category, respondents perceived the skill that was demonstrated as easier. Unlike the simplicity and ease with which participants under the condition of similar model perceived the demonstration. The participants stated that the tasks were simplistic in a sense that suggested that in their view, they could master the demonstrated tasks without it having been demonstrated by the model. This makes their responses distinct from those in the former category of ease of task.

Participant R#159B/W **epitomized** this category very well.

... I didn't like any of it

... Yes, because they were easy and I am athletic

... Hitting the ball; protecting the wicket

This participant responded in a way that seemed to suggest that he attributes his perceived understanding of the demonstration to his own athleticism therefore shifting the focus away from the model despite the question posed having specifically asked about the role played by the demo in his understanding of the tasks.

Another R#87B/W responded:

... The way you bowl the ball

... No, it looks like an acquired skill

...How to hit the ball

He clearly saw the skill demonstrated as something that was acquired. In other words, the implicit assertion by the participant was that there was no need for a demo. That he could master the skill without the aid of somebody showing him how to go

about it. In the view of this participant, the role of the dissimilar model was diminished or eliminated altogether.

Skill transfer

A majority of the participants related the novel task with activities they have previously participated in before. They credited their perceived understanding the demonstrated skill to having played a sport before that employ skills similar to the demonstrated skill. They attributed their confidence to teach and understanding to knowledge from baseball, softball and even volleyball. Participant R#176B/W succinctly stated;

... Batting, because it is like baseball

... Yes, because they were clear

... How to bowl and pitch

And another had this to say: R#138W/B

...The scoring

... It is similar to softball

Another response was that of R#142W/B

... The bowlers arm movement when throwing the ball because it is like that of volleyball which I enjoy

It is clear from their responses that participants viewed all their understanding to have come from previous experiences thus no role whatsoever was played by the model in the facilitation of the learning of the demonstrated skill.

Difficulty of task

Complexity and novelty was also identified by respondents. The perception seemed to have diminished the affect and subsequently lowered attention, interest arousal and confidence since the responses with regard to whether they will be able to teach the skill was often in the negative. This is interesting given that in the respondents under the condition similar model actually cite novelty as a point of interest. They identified different things that made it difficult for them to grasp the demo by the dissimilar model and build confidence to be able to perform.

Participant R#63W/B

... I am not familiar with the game at all. You cannot learn how to play a game by listening to a video

... It was short

Yet another participant R#181B/W echoed this thinking

.... Bowling; it looked the hardest to do

... No, I think I would need someone who knows the skills to help me to perform

This category was characterized by responses like this that basically stated that the demo looked difficult and the second part of the response which basically sought to know.

There findings from this preliminary study are interesting and spurred interest in looking at a much younger population to see how a multitude of factors inform perceptions about the suitability of physical activities. The participants used in this preliminary study have had more contact with media and other situations and presumably

their perceptions are already shaped in a specific way with regard to beliefs about suitability of activities. Looking at the middle school population seemed attractive because it is a period when identity formation is most active. This is hypothetically when the perceptions of suitability of activities takes firm root. It is against this background that the current study was mooted. It will be interesting see identify the onset of these perceptions and hopefully gain a insight into this so as to adopt strategies to improve physical activity participation.

Research Design and Methods: Current study

INSTRUMENTS

Cricket Instruction Video

One of the benefits of observing a skilled demonstration by a model is the facilitation of the acquisition of the appropriate movement pattern required for successfully performing the skill. The most convenient way of obtaining and storing consistent skilled demonstrations is through video.

The use of video in modeling research has gained considerable acceptance as compared with live models that were preferred by early researchers investigating observational learning. Researchers have vouched for the use of videotaped footages as effective as live models in modeling motor tasks. These include (Gould & Weiss, 1981; McAuley, 1985). In fact the comprehensive study by Feltz et al, (1979) specifically compared live model and video models to determine the modeling technique that was more effective. Though results showed that there was no difference between the two techniques, videotaped models have obvious advantages.

The appeal of video model is motivated by practical reasons. For instance, videotaped demonstrations have several logistical merits when compared to live models. This include the fact that they afford uniformity, can be used unlimited number of times and afford researchers absolute uniformity with regard to what they intend to be observed and learnt.

The modeling instances in the instruction video were obtained by careful selection of footages from the 2003 World Cup Cricket. Not only did this ensure that

highly skilled demonstration of form were used but also ensured uniformity of the performances. The voiceover on the tape explained concepts in a logical sequence as they were systematically demonstrated by models in the video. The ethnic features of the models in the video footages were highlighted and emphasized by having the models and others in the video depicting the white condition as all white and those in the black condition as all black. For maximum effect, the racial characteristics of the models were magnified by making close up shots, making sections of the footage still and slowing down the action. Also at the start and the end of the footages, still close up pictures of the purported model was left on the screen on obvious display.

Videotaped demonstrations where personal features of the models are manipulated have long been employed in different studies. Melville & Maddalozzo (1988) for instance employed video tape with the characteristics of the models manipulated for effect to investigate a model teachers' appearance of body fatness and the effect it had on his instruction of fitness. In the study identical voiceover was used for both conditions fat and non-fat. The "fat" model teacher had donned a fat suit that padded his built and made him appear obese. Similar content was presented in both conditions.

Novel task

The game of cricket was chosen for this study specifically because of its novelty. This is because its putative suitability stems from the fact that in testing the retention of the various concepts and movement patterns in the game of cricket, there is a higher level of confidence that any resulting skill acquisition and concept learning will

not be attributable to transfer from other sports. The skills employed in cricket tend to be markedly different from those employed in related games.

Cricket is not one of the main stream sports in United States society and most of the participants were projected to be unfamiliar with it and learner's responses amply confirmed this. In other words it fit in description of a novel task. The semblance of skills employed in cricket to skills used in other related sports is minimal. There is negligible amount of transfer from other sports which meets the suggestions of suitable skills that can be employed in investigating skill transfer (Schmidt, Zuckerman, Martin & Wolfe, 1971).

Batting is the cricket task selected for re enactment to determine acquisition from the observation by participants. The reason for suitability of batting is two-fold. First, it fits the description of "skill" by McMorris (2004). He contended that a skill is the consistent production of goal-oriented movements, which are learned and specific to the task. Secondly, some types of motor tasks are retained better than others (Fiscshman, Cristina & Vercrysen, 1982). The tasks in cricket, both batting and bowling fall under what Posner & Fitts (1967) characterized as discrete tasks which are readily retained. These tasks are considered discrete as they have a definite beginning and ending. McMorris (2004) points out that discrete skills concern the performance of one action in isolation from other actions. Discrete tasks tend to have a more verbal component and may be more prone to forgetting (Posner and Fitts, 1967). Therefore, there was a need in this study to have the participants take the recall test and attempt reenactment immediately following the viewing of the video demonstration.

Furthermore, with regard to the skill of batting, albeit transfer from other techniques of batting like those employed in baseball and softball is anticipated, batting in cricket has peculiarities that are not seen in batting in baseball and softball. That includes the sequence in batting in cricket where back lift and the elbow leading out is quite distinct. These peculiarities inherent in the cricket skills will help to sort acquisition while examining performance by observers.

Skilled videotaped models

Just like the concept of modeling itself, the use of skilled models has been documented as being a valuable aspect of teaching and learning and it enjoys a long history. Clark (1957) noted that in Greek and Roman art of literary criticism, with their famed value for aesthetics, insisted on the selection of the best models or exemplars for the younger generation to imitate.

In this study, the demonstrations employed were obtained from section of the 2003 Cricket World Cup Series. This implies that the modeling actions used were highly skilled performances. The choice of the skilled actions for the purposes of the demonstration was motivated by the following key assumptions:

The first assumption is that an observer will attempt to imitate the motor behaviors of models (Martens et al. 1976). It is logical to conclude that imitation of efficient performance strategies by skilled models would benefit learning as a matter of course. Secondly, like Sheffield (1961) argued that observers code information that will facilitate skill reproduction or correct performance. It is therefore assumed that the use of highly skilled models will naturally provide an appropriate perfect template of correct

performance to be coded by the observers for later reproduction. The skilled model would consistently demonstrate better coordinated activity than unskilled model (Lee & White, 1990).

Also supporting the use of skilled models as integral to the process of modeling is Schunk (1987) who argued that observing a competent model perform actions that result in success conveys information to observers about the sequence of actions one should use to succeed.

Retention and recall test

In this study, the performance at recall test portion is regarded as one of the most important component of mastery. Melville & Mandalozzo (1988) used recall to determine the amount of learning that took place following fitness instruction by models. In their study, participants received instructions on fitness from two models. In the first condition, participants observed and took instruction from a model donning padding costume and who was being featured as obese and in another condition; they took instruction from a fit model that was presented as having an ideal body built. The results from the tests showed a variation on the amount of information learnt by observers from the models with the model perceived as obese being able to transmit significantly less information as compared to the fit model. Also in Borgeaud & Abernethy (1987) while investigating the ability to recognize and memorize patterns and structures inherent in the perceptual display arrived at the conclusion that verbal recall was one of the fundamental characteristics of expertise. The task, novel to the participants will ensure that the

questions posed elicit responses based on what they retain after attending to and listening to the demonstration.

Priming race

The salience of race was achieved in the study by having the two conditions with specific priming of the model's ethnicity. For instance, in the black condition, the cast of demonstrators and all the individuals in the video are all black. The same applies to the white condition. In the video demonstrations, the ethnic features of the demonstrators are further emphasized by freezing the footage at specific performances, close up shots and having a large demonstrators picture on the screen prior to and after the footage has been shown.

In the questionnaire, participants were required to complete a section indicating demographic information; gender, grade and ethnic background or identity. The racial background question was used to prime race prior to both responding to recall questions and performing the batting task. The priming tactic was used to prime race prior to an athletic test performance by Steele & Aronson, (1995).

The best illustration of the usefulness of priming was perhaps that defined by Devine, (1989). He argued that mobilizing expectancy is easily achieved by activation of stereotypes which have been found to be non-conscious and automatic. Automatic activation of stereotype is likely to influence behaviors in perceivers that in turn influence how perceivers interact with a member of the stereotyped group. Shih, Pittinsky, & Ambady, (1999) in their stereotype effects experiments aptly employed this technique of activation of ethnicity to determine its influence on performance in a quantitative task.

Similar model/dissimilar model

In this investigation, the model similarity or dissimilarity based on the ethnic features of the participants in relation to the models is being investigated. It projects that a similar model will incite feelings of self-efficacy in participants that looks like the model to the model they observe to a greater extent than in participants that look different from the model. The issues and all the probable points that make closer identity to a similar model on the most salient marker race have been dealt at length in the literature review.

Following the postulations of Bandura's (1977) and self-efficacy theory, this study attempts to test this theory using the models and participants ethnic features as the basis of similarity or dissimilarity. As noted earlier, observing a similar other performing successfully has been established to enhance self-efficacious feeling in performing any number of tasks. This is supported by Kadzin's (1974) argument that of all the variables that increase the self-efficacy value of vicariously derived information in observational learning (which he noted to have had such a big influence in augmenting the power of cognitive modeling) similarity to the model was the one key variable which increased the personal relevance of the modeled performance. The observers readily perceived their own self-efficacy to perform at some task or behavior as more close to that of a similar performer modeling for them. Gould and Weiss (1981) argued that the utility of modeling as a source of efficacy information may be dependent on the type of model observed.

Perhaps the most compelling argument for the potency of the construct of similarity is that made by Schunk (1987):

Similarity to models is hypothesized to be an important source of information for gauging behavioral appropriateness and formulating outcome expectations. In general, the more alike observers are to models, the greater it is the probability that similar actions by observers are socially appropriate and will produce comparable results. Model attributes often are predictive of the functional value of behaviors. Similarity ought to be especially influential in situations where observers have little information about functional value. For example, modeled behaviors on tasks which observers are unfamiliar or those that are not immediately followed by consequences may be highly susceptible to influence by similarity in model attributes.

Literature in persuasion also indicates that individuals tend to be easily persuaded to do something when the person trying to persuade them shares similarity of some sort. Increased attention and positive responses to similar others has appeared in a great range of situations. Cialdini (1984) noted:

If people follow the lead of others to make good choices for themselves, then it stands to reason that most of the time they would want to follow the actions of individuals similar to themselves. We are all more likely to seek out and accept the advice of individuals like ourselves, who are similar in background interests and goals.

This articulation of the influence of similarity in persuasion strikes a chord in educational setting because essentially, education or instruction of skills and concepts be they physical or cognitive, is a persuasion exercise.

Given the social significance that physical activities, as argued by Harrison, Harrison & Moore (2002) carry especially during the process of identity development, it looks plausible that similarity to the model performing some novel task is likely convey to youth on the verge of identity development, feelings of self-efficacy. These authors identified this identity formation to be active during adolescence.

Cricket bats, the action of batting and the scoring instrument

Participants were asked to perform a reenactment of the action of batting as observed in the video. The participants got a few practice trials swinging the bat and then five attempts at reenacting as exactly as possible the action of batting as it was demonstrated in the instruction video. This will make it possible to observe the participant's performance on the batting task and compare it with the models performance following the demonstration (Flanders, 1968). The participant's reenactment of the modeled task will determine acquisition of a new movement after observing the model's actions.

The administrator of the treatment explained the procedure vividly and clearly and asked the participants whether they understood. A count from six through one was made each time a count was made, a participant reenacted the task. A period of recovery was allowed between the counts to make sure that they got back to the ready position so that the grip and stance could be assessed while reviewing the video later. It

was explained that the objective of this portion of the treatment was to perform the action of batting closely as possible in tandem with the performance observed a couple of minutes earlier.

Two video cameras are employed to capture the action throughout this data collection exercise. This was meant to safeguard against malfunction of one of the cameras and also to serve to provide another angle from which to observe the reenactment of the batting task.

Since a large number of participants were assessed doing the reenactment, seven bats meant for junior cricket were supplied. As many as seven participants performed the reenactment at the same time. Participants were adequately spaced out so as to ensure their safety while swinging the bats.

The following are the key points of assessment used to review the performance of the batting task:

1. Stance:
2. Grip
3. The swing: Back lift, bat position and follow through
4. The position of the bat: level

Key for scoring the batting task

1. The grip

- a. Both hands towards the middle of the handle [1]
- b. Face of the bat forward toward target [1]

2. Stance

- a. Feet shoulder width apart [balance][1]
- b. Stand side on [1]
- c. Knees slightly bent [1]
- d. Face direction of target [1]

3. Back lift

- a. Head still [1]
- b. Hands close to the body [1]
- c. Starts low going up back [1]

4. The swing

- a. The elbow leads up and out [1]
- b. Face of the bat faces target [1]

5. Overall form [1]

Key points to observe:

Diagram 3.1



The correct hand position for the basic bat grip

DIAGRAM 3.2

Stance



Correct batting stance

Diagram 3.1



Positioning bat for back lift

Diagram 3.2



In the backlift position, the arms form a number “6”

Diagram 3.3



3. Set and swing + Overall form

Diagram 3.4



Scales

Self-efficacy

The framing of this study is such that the variable of self-confidence or self-efficacy feelings among the participants is under scrutiny. In all the two conditions, that is participants observing a white model and participants observing a black model, their feelings of confidence are compared to their actual scores both on the recall test and on the performance. For instance, how will the self-efficacy of black participants observing a black model compared with their actual score? Stone et al.,(1999), while examining stereotype threats, had established that black individuals performed well on an athletic task when a positive stereotype about black athletes was implied or made salient. This study is framed along the same lines. The flawless performances on the demonstrations framed these demonstrators as proficient and athletic at it. Stone et al, (1999) implied that positive stereotyping actually boosted self-efficacious feelings and performance.

There are a number of factors that were hypothesized to boost self-efficacy feelings (Bandura, 1977; Meichenbaum, 1977). They however underlined model similarity as an integral consideration in self-efficacy adjustments which highlights the personal relevance of the modeled performance for the observer. Observers viewing similar others demonstrate motor skills are bound to reenact with a greater degree of successful compared to when viewing dissimilar others (Gould & Weiss, 1981). The expectations of the viewers of a similar model will be that if a similar other can do it so can they.

They also argued that the result of observing similar other perform successfully motivates the observer to have feelings of being able to perform just as well as the model. Therefore, the efficacious feelings are greatly influenced by observing a similar other in action. Bandura (1977); Meichenbaum, (1977) outlined the possibility of establishing the effects of similarity or dissimilarity of the model on the observer by examining the self-efficacy and by extension performance. They cited modeled behavior as conveying more self-efficacious information. This study is designed to attempt to determine in observers following the watching a demonstration of a novel task by a similar or dissimilar model. Though the performance of the tasks will be required, the measures of confidence will be taken as predictors of behavior.

The study aims to bolster the validity of the findings by ensuring that a rigorously administered performance evaluation is done. This is because it has been established that regardless of the methods, treatments that use actual performances of the tasks have consistently produced results that are superior to those based on symbolic forms of the same approach (Bandura, 1977).

Self-efficacy, Expectancy and Performance

Researchers investigating self-efficacy have determined that self efficacy is as a quality that is mandatory for success in sport. That in order to perform well in sporting tasks, athletes or individual engaging in an activity must be imbued with self-confidence. Weinberg, et al., (1981) noted that the most indispensable factor that is crucial in the achievement of maximum athletic performance is an individual's level of self-efficacy or self confidence. Also, (Feltz & Brown, 1984; Harter, 1978)

demonstrated in a competence motivation project that children who perceived that they are highly competent at a skill will persisted longer, and maintain interest in mastering the skill. On the other hand, children that perceive themselves as having little competence will not maintain persistence and interest. In a study to determine whether confidence was more influential than competence, (Griffin, Keogh & Maybee, 1984) determined that perceived level of confidence generally resulted in personal feelings of competency. Also related to this was the observation that high school athletes who scored higher on a task-goal orientation reported themselves as high ability and exerted greater effort than those scoring lower in task-goal orientation (Williams & Gill, 1995).

It has however been argued that self efficacy or self confidence to perform at an activity is sports specific. An accomplished soccer player will have absolute confidence stepping on the soccer pitch and completely at a loss on the gridiron. That also the soccer player will be very much at home curling free kicks to the target in a seemingly impossible way whereas missing the mark more often than not during a soccer game. Many authors contend that self confidence tend to be situation specific or even skill specific.

However, perceived self-efficacy has also been determined to facilitate behavior outcomes provided that the necessary conditions are facilitated. For instance, perceived self efficacy is thought to determine behavioral outcomes when sufficient incentives and skills are present (McAuley & Gill, 1983). Their task-specific measures of self-efficacy were very effective when gymnast's own predictions of how they would

perform proved to be very accurate in variables for predicting actual gymnastic performance.

This study goes further and seeks to compare the levels of competence feelings under the different models conditions or treatments as well as the performances to determine whether similar model condition results in more feelings of confidence in comparison to the dissimilar condition. Gayton & Nickless (1987) determined that marathoners' predictions of their performance in an upcoming race were closely accurate.

Expectancy

In the realm of sports, people of different ethnicities are framed as being proficient in certain sport (Harrison, 1999). The beliefs about the suitability of activities are pervasive. For instance, it is believed that individuals from certain ethnicities for example African Americans are as deemed athletic. The fact that American media is awash with high achieving African American athletes in widely publicized sports like basketball and football makes this a classic epitome promoting self-fulfilling prophecies. The notion that a false but widely-believed prediction could become true simply because enough people believed in it is neither new nor original, Wineburg (1987). It is plausible that individuals who have been primed constantly as belonging to a group that is perceived as proficient in athletics for instance will expect to succeed in performing something demonstrated by a member of the group. When this is considered in light of the findings of Weinberg, Gould & Jackson (1979) that when athletes expect to perform well and are confident to that effect, they more likely to experience enhanced performance compared to when they had little expectation.

In the contemporary American society, there is a wide expectation that a black boy will naturally turn out athletic. Teacher coach, parental and societal expectations are widely known to have an impact on individual in school performance. This investigation sets out to test this expectation on the part of the youngster. When coupled with the fact that behavior or actions are mainly conditioned by the society, this becomes interesting to research problem to probe. The appropriateness of any given action or behavior is validated if a significant other is doing it well (Cangemi & Khan, 2001).

Investigations on expectancy beliefs have been widely probed by Eccles & Wigfield, (1995; 1997) especially with regard to gender differences in students. They have done a lot of work which demonstrate that expectancy beliefs in classrooms consistently indicate that boys hold higher beliefs of competence as compared to girls when it comes to stereotypic domains like sports.

Variables and measures

The participants responded to the questionnaire that asked them to indicate their beliefs about their own abilities, expectation to succeed and task values in performing a cricket task. The items in scale employed were developed by Eccles et al. (1983) and used by Eccles et al. (1993) and Xiang et al. (2003).

Self ability beliefs:

Participants rated their projected ability to perform batting in cricket. They used a five-point Likert style scale for the purpose. The items asked the participants to rate their abilities in batting a cricket ball, “How good at batting are you?” (1 very bad – 5 very good), “Compared to other students, how good at batting are you?” (1 – Very

bad – 5 very good), “Compared to other physical activities, how good at batting are you?” (1 very bad – 5 very good), “How good at batting have you been before?” (1- very bad – 5 very good).

Expectation of success

The participants were asked four questions that assessed their expectation to succeed following the same format as in the self ability beliefs part. They responded to these questions: “How good would you be at learning something new in batting this time?” (1 very bad- 5 very good), “How well will you do in batting this time?” (1 Not well at all – 5 very well), “Compared to other students, how well do you expect to be in batting this time?” (1 one of the worst – 5 one of the best) and “How well do you think you will be in batting next time you try?”

Importance /value

Two items in this domain sought the importance or attainment value that participants attached to the skill observed. The first item asked: “For me, being good at batting is? (1 Not very important - 5 not very important). The second one asked; “Compared to other physical activities, how important is to you to be good at batting task like this?” (1 Not very important – 5 very important).

Interest

In this domain, one item asked about the interest or intrinsic value of the task. “In general, I find being good at batting?” (1 way too boring – 5 way too fun). Another item asked: “How much do you like batting?” (1 I don’t like it at all – 5 I like it very much).

Usefulness

The final question was that of utility value of the batting task. “In general, how useful is what you learn in batting?” (1 not useful at all – 5 Very much useful).

The second part of the study involved watching a short video footage featuring either a black model or a white model.

Participants

Age of the children:

Children in the middle school age have the requisite abilities to try different skills including the skills like those employed in cricket. The level of maturity is a crucial factor for success in modeling because of the obvious fact that a learner will not be able to model a task that is beyond his or her physical abilities. There is also an important consideration in using this age. This age group is in the onset of adolescence and Harrison, Harrison and Moore (2002) report, ones identity becomes crucial in adolescence. It is a time when one fervently seeks an identity and one manifestation of this is in choices they make that affirm their group affiliation. They noted that there is strong link between racial identity and athletic identity which is of interest in this study. It is plausible to conceive that mere presentation of similar individual performing a task, even one that is novel, will convey appropriateness of that task. Brown, Gibbons and Smirles (2007) employed adolescent Indian children in their identity study which demonstrated that tribal adults, who look like the children, were very instrumental in proffering education and encouragement to the youth.

The participants for this study were 155 middle school children enrolled in a suburban school, summer tennis camps and from a summer boys and girls club all in Southern United States. The sample consisted of 88 females and 68 males with an age range of 10-14 years. Many ethnicities are reflected in the sample. They included 20 Asian Americans, 51 Hispanics, 30 Caucasians, 39 African Americans and 11 who identified themselves as other. 56 participants were 6th graders, 68 were 7th graders and 32 were 8th graders. Of the 32, 6 reported that they were going to be 9th graders in the following school year. Most of the participants were volunteers who completed the study in the context of the PE classes. Others were attendees at a tennis summer camp and some were enrolled in boys and girls club activities. The necessary Institutional Review Board approval was obtained and participant's parental consent was also obtained prior to the commencement of the investigation. For participants attending the summer camp, parental consent was sought at the time of registration.

Data collection procedures

Participants completed the questionnaires individually, watched the video footage and completed the recall portion of the investigation. The completion of the questionnaire and the recall exercise were completed individually. This was intended to guard against the possibility of participants giving socially desirable responses. They then attempted to reenact the demonstrators' motions. This was achieved in groups of between 3 - 7 participants at a time for the purpose of convenience. 85 observed a white model whereas the rest 71 observed a black model.

The groups of participants obtained were mainly convenience samples. So it was not possible to attain randomization. Participants observed one of the models explaining the different concepts and skills in cricket. In each instance of data collection, the video footages were projected on the wall using a projector or in a TV monitor. All the participants got a chance to observe the same quality and size of the footage. The audio too was of such quality that all participants heard the narration clearly. Sections of the footages had still pictures, slow motion and close up images of the demonstrators to emphasize the ethnicity of the model. The still, and close up pictures also were deliberately prominently displayed on the screen prior to starting the footage and after. This was meant to prime the observers further with the ethnic features of the model.

After watching the footage which lasted approximately seven-minute, the participants took a recall portion of the test that had 20 items. This part basically consisted of items testing the retention of concepts and rules of cricket as they were explained by the models. At the end of recall test items, participants were also asked to simply make a list of the things that they thought to have in common with the demonstrators. Each participant will only have viewed one model.

Finally, after completing the recall test, participants were asked to re-enact the action of batting as it was demonstrated in the video. They took turns lining up to bat so that they could be captured in video. Before trying to reenact batting, each participant took three practice trials. They were lined up in a line in groups of four, five up to seven at a time, depending on the size of the group available during a particular data collection session. This was intended to save time. After the practices, they were all given 6 chances to demonstrate the skill of batting in cricket. The purpose of the video recording of the

participant's reenactment was to enable the investigators to later rate the reenactment and assign a grade to determine performance on the task.

The participants were asked to approximate as closely as possible the action of batting which they observed in the demonstration. Standard cricket bats were provided for the purpose. The participants did not bat an actual cricket ball. They just reenacted the action of batting by shadowing without a ball being bowled to them so that only their batting form would be observed and assessed.

Each data collection episode lasted approximately 25-30 minutes. Participants were monitored as closely as possible to ensure that they did not give cooperative responses in both the questionnaire and the recall questions. Participants were not told of the purpose or significance of the study but were debriefed after they had completed the exercise. Approximately ten percent of the participants were later interviewed to obtain qualitative insight into the phenomena under investigation.

Written responses and interviews

In the first phase of the data collection process, where all the participants were asked to list all the things that they thought to have in common with the model they had just observed, space was provided for them to write their responses. The 10% participants in the second phase of the data collection process were interviewed at length. The data collected from the interviews was meant to add insight to the responses given by each participant. Each interview was conducted soon after the participant had completed the first part of the study to ensure that the information observed was still fresh on their minds. All the participants were interviewed immediately following the first part.

Each participant interview lasted from 15 to 20 minutes with most lasting approximately 15 minutes. After a few interviews and preliminary data analysis, questions became more focused and the interviews inevitably became shorter. A structured interview guide was employed made up of five main questions to be probed:

1. What movements / motions or skills interested you most in the video demonstration? Why?
2. Do you feel confident that you can perform these skills as they were done by the demonstrators? Why do you think so?
3. What motions/skills/ movements can you be able to recall and teach your friends later?
4. Over all, what did you like most about this demonstration?
5. What things about this demonstrator do you think helped your understanding of the skills?

The interviews were conducted in a quiet area away from the bustle of the rest of participants. This was meant to ensure that the interviewees were at ease when responding to questions posed. All the interviews were captured in audio tape. Later, the interviews were transcribed verbatim and analyzed. Extensive member checks were conducted after the transcriptions were complete. Most of the participants were given a copy of the interview responses they supplied for review and verification. The primary goal was to ensure accuracy of information and achieve maximum meaning preservation. In each case, participants read a section of the transcription that carried their interview text and indicated that it was the correct representation of their responses. This is in line

with the technique of traditional member checking that was made popular by (Lincoln & Guba, 1985). However, it was difficult to track down all the interviewees more than once owing to the fact that they were scattered in different sites and erratic schedules of camps and boys and girls clubs.

Mixed method

This study employs partially mixed method where both qualitative and quantitative studies are fused. This method is often employed to complement and expand the scope of the study. The qualitative study is meant to capture nuances that the quantitative data would not quantify. Blending research methods helps to boost the validity of the study as the strengths and weaknesses complement each other (Johnson & Christensen, 2004). They contend that qualitative data helps to enrich research information and give in-depth insights about phenomena whereas quantitative data help in hypothesis testing and generalizations. Quantitative data was obtained by administration of recall test, measures and scales that yield into quantifiable variables for analysis. Written information and interviews formed the main source of qualitative information for this study.

Methods of data analysis

Quantitative data

Data analysis was done on the two data sets: qualitative and quantitative. Statistics packages for social sciences (SPSS) software were used to analyze quantitative data. Variables were entered into the software and output obtained and examined to compare scores of individuals of different demographics under the different conditions.

In the qualitative analysis, themes were teased from participant's responses to the open ended interview questions and the written responses they supplied.

Before the analysis of data was performed, data cleaning was done to address cases with missing data and purge outliers. Missing data were purged from the data set and there were no multivariate outliers. As a result of the purge of the missing data, 144 cases remained eligible to be included in the analysis.

The independent variables of gender (male, female), ethnicity (non-white, white), and condition (black model, white model) were scrutinized in this study. The dependent variables were recall, performance, expectancy, and self-efficacy. Hypothesis for the research was stated in the null form. An alpha level of $\alpha = 0.05$ was set.

Qualitative data

Data was reduced and organized with a view to coming up with meaningful categories. Constant cross-comparison technique (Strauss & Corbin, 1967) was employed to sort and organize data from similar and dissimilar conditions. Throughout the process of data analysis, different coding techniques were employed.

Open coding

In performing open coding, data was broken down, compared for similarity and differences, and then re-assembled in respective categories. As an example data was compared for similarities and differences to develop groups of concepts. For example all the responses from participants in response to an interview question were put together categories and subcategories inductively generated from the data. These were then

assigned a label, essence or phrase (Maykut & Morehouse, 1994) that described its essential characteristics.

Axial coding

After breaking down data, meaningful and related groups were created by re assembling the data broken down during open coding. The interactions between categories were further explicated through development of relational statements between categories with the properties and dimensions of the concepts (Holt & Dunn, 2004). If it did not fit into existing concepts, new ones were created and if there were new concepts that were related, they were fused to create one more rich and detailed theme.

Achieving Rigor

In addition to employing both qualitative and quantitative research to carry out this investigation, other strategies are employed to ensure the rigor in the study. To begin with data was organized to create a narrative of what was meant by respondents. Notes and descriptions of categories made after coding the data were reviewed to allow meanings to emerge. Though the emerging themes were later linked to literature, literature review was delayed until after categories had emerged (Strauss & Corbin, 1998). Another strategy employed to build rigor was constantly discussing the emerging themes with another researcher. In data collection, member checks were attained by having the participants read through the transcripts of the responses they had supplied to ascertain their veracity.

In rating the performance on the batting by the participants, three raters practiced rating the task following the same scale and obtained an inter rater reliability of .80 which was deemed substantial (Landis & Koch, 1977).

Researcher positionality

Though I am not American, that is to say that I was neither born nor raised up in the American society (as most of the research participants did), it is only in this sense that I am different from the participants especially the African American participants. I possess characteristics that are similar to these participants. Consequently, I have to acknowledge that in discussing the results, I will have this consideration in mind and the fact that the way I look at things may be informed in some way by my membership in one of the categories in the study. Harvey (1996) noted that in doing research, it is important that researchers are considerate of differences or similarities between themselves and research participants.

DATA ANALYSIS

The purpose of this study was to establish the influences of model similarity on the learning of a novel task by participants. The results of the study too could yield other variables and their influences on learning in physical education and sports. This chapter outlines the results of qualitative and quantitative aspects of this study.

The chapter also presents descriptive statistics of the dependent and independent variables as well as the results obtained from the Multivariate Analysis of Variance (MANOVA: Two way factorial analyses). There is also the presentation of the post hoc comparison of means between selected independent variables that had main effects with regard to similarity or dissimilarity influences.

PARTICIPANTS

The participants for this study were 155 middle school children enrolled in a suburban school, summer tennis camps and from a summer boys and girls club all in Southern United states. The sample consisted of 88 females and 68 males with an age range of 10-14 years.

Demographic information

They included 20 Asian Americans, 51 Hispanics, 30 Caucasians, 39 African Americans and 11 who identified themselves as other. 56 participants were 6th graders, 68 were 7th graders and 32 were 8th graders. Of the 32, 6 reported that they were

going to be 9th graders in the following year. However, in this analysis, the categories were collapsed into two: non-white and white.

Data was subjected to preliminary analysis to test assumptions of normality. The assumptions of normality were met. Both Kolmogorov-Smirnov and Shapiro-Wilks were not significant at .01. The values of $>.01$ indicating that the assumption of normality was met.

The tests of equality of covariance revealed a Box's $M = 39.350$, $p < .206$ which indicated that the dependent variables covariance matrices were equal across the levels of independent variables. This cleared the way for the use Wilk's Lambda to assess multivariate effects. Bartlett's test of sphericity was statistically significant (approximate Chi Square = 259, $p < .000$) indicating sufficient correlation between the dependent variables to proceed with the analysis.

Data analysis involved Hotelling's T or two groups' between-subjects multivariate analysis of variance (MANOVA) on the four dependent variables performed on the dependent variables of efficacy, expectancy recall and performance. The independent variables were condition or treatment, ethnicity and gender.

Table 4.1 shows the frequencies of the participants as well as the condition and their demographics.

Table 4.1

Participant		Frequency	Percentage
Gender	Male	60	41.67
	Female	84	58.33
	Missing	0	0
Ethnicity	Non-White	112	77.78
	White	32	22.23
	Missing	0	0
Condition	White model	81	56.25
	Black model	63	44.75

Table 4.2 shows the descriptive means for recall for all the participants. Tables 4.3, shows the means for performance, table 4.4 shows the means for self-efficacy and table 4.5 shows means for expectancy. All these are the means that showed a significant main effect.

The standard deviation ranging from .53 – 4.71 showed a varied dispersion of the scores of participants in the various measures.

4.2 Descriptive statistics: Recall

Ethnicity	Gender	Condition	MEAN	SD	N
Non-white	Male	White model	10.09	3.54	35
		Black model	9.44	3.25	9
		Total	9.95	3.46	44
	Female	White model	8.94	3.02	32
		Black model	7.86	2.34	36
		Total	8.37	2.72	68
	Total	White model	9.54	3.33	67
		Black model	8.18	2.59	45
		Total	8.99	3.11	112
White	Male	White model	8.67	2.58	6
		Black model	13.70	2.02	10
		Total	11.81	3.75	16
	Female	White model	10.38	3.82	8
		Black model	10.50	3.02	8
		Total	10.44	3.33	16
	Total	White model	9.64	3.34	14
		Black model	12.28	3.36	18
		Total	11.12	3.55	mm
Total	Male	White model	9.88	3.43	41
		Black model	11.68	3.74	19
		Total	10.45	3.60	60
	Female	White model	9.23	3.20	40
		Black model	8.34	2.65	44
		Total	8.76	2.94	84
	Total	White model	9.56	3.31	81
		Black model	9.35	3.37	163
		Total	9.47	3.32	144

4. 3 Descriptive statistics: Performance

Ethnicity	Gender	Condition	MEAN	SD	N	
Non-white	Male	White model	8.46	1.05	35	
		Black model	7.92	1.95	9	
		Total	8.36	1.28	44	
	Female	White model	7.88	1.42	32	
		Black model	7.57	1.15	36	
		Total	7.72	1.28	68	
	Total	White model	8.19	1.27	67	
		Black model	7.65	1.32	45	
		Total	7.97	1.31	112	
	White	Male	White model	9.04	1.28	6
			Black model	9.35	.88	10
			Total	9.23	1.02	16
Female		White model	8.03	.85	8	
		Black model	8.13	.53	8	
		Total	8.08	.69	16	
Total		White model	8.46	1.13	14	
		Black model	8.81	.96	18	
		Total	8.66	1.04	32	
Total	Male	White model	8.55	1.10	41	
		Black model	8.70	1.60	19	
		Total	8.60	1.27	60	
	Female	White model	7.91	1.32	40	
		Black model	7.67	1.08	44	
		Total	7.79	1.20	84	
	Total	White model	8.24	1.24	81	
		Black model	7.98	1.33	63	
		Total	8.12	1.29	144	

4. 4 Descriptive statistics: Efficacy

Ethnicity	Gender	Condition	MEAN	SD	N
Non-white	Male	White model	11.43	4.11	35
		Black model	10.56	3.78	9
		Total	11.25	4.02	44
	Female	White model	10.28	3.91	32
		Black model	8.78	3.82	36
		Total	9.49	3.91	68
	Total	White model	10.88	4.03	67
		Black model	9.13	3.84	45
		Total	10.18	4.03	112
White	Male	White model	10.33	2.34	6
		Black model	10.70	3.68	10
		Total	10.56	3.16	16
	Female	White model	7.50	3.02	8
		Black model	9.63	3.02	8
		Total	8.56	3.12	16
	Total	White model	8.71	3.02	14
		Black model	10.22	3.35	18
		Total	9.56	3.25	32
Total	Male	White model	11.27	3.90	41
		Black model	10.63	3.62	19
		Total	11.07	3.80	60
	Female	White model	9.73	3.88	40
		Black model	8.93	3.67	44
		Total	9.31	3.77	84
	Total	White model	10.51	3.94	81
		Black model	9.44	3.71	63
		Total	10.04	3.87	144

4.5 Descriptive statistics: Expectancy

Ethnicity	Gender	Condition	MEAN	SD	N
Non-white	Male	White model	13.06	4.71	35
		Black model	12.22	4.30	9
		Total	12.89	4.60	44
	Female	White model	11.97	4.01	32
		Black model	11.22	4.10	36
		Total	11.57	4.05	68
	Total	White model	12.54	4.40	67
		Black model	11.42	4.11	45
		Total	12.09	4.30	112
White	Male	White model	12.67	2.42	6
		Black model	12.60	2.41	10
		Total	12.63	2.33	16
	Female	White model	10.63	2.83	8
		Black model	13.00	1.70	8
		Total	11.81	2.56	16
	Total	White model	11.50	2.77	14
		Black model	12.78	2.07	18
		Total	12.22	2.45	32
Total	Male	White model	13.00	4.43	41
		Black model	12.42	3.34	19
		Total	12.82	4.10	60
	Female	White model	11.70	3.81	40
		Black model	11.55	3.82	44
		Total	11.62	3.80	84
	Total	White model	12.36	4.16	81
		Black model	11.81	3.68	63
		Total	12.12	3.95	144

RESULTS

Quantitative results

RESULTS OF THE MANOVA ANALYSES

Data analysis involved Hotelling's T or two groups' between-subjects multivariate analysis of variance (MANOVA) on the four dependent variables. Dependent variables were self-efficacy, expectancy recall and performance. The independent variables were condition or treatment, ethnicity and gender.

Table 4.6

Wilk's Lambda values

Effect	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Ethnicity	.904	3.515	4.000	133.000	.009	.096
Gender	.899	3.733	4.000	133.000	.007	.101
Ethnicity*Condition	.931	2.474	4.000	133.00	.047	.069

Results indicated multivariate significant main effects for participant's ethnicity and gender. Using Wilks's criterion, the composite dependent variate was significantly affected by participant's ethnicity and gender. The Wilk's Lambda value for ethnicity of .904, $F(4, 133) = 3.515$, $p = <.009$ and the value for gender of .899 translating into $F(4, 133) = 3.733$, $p = <.007$ indicating that there are differences between the two ethnic groupings (White and Non-white) and gender respectively on the

dependent variate. Both the main effects account for almost 10% of the total variances, Table 4.6.

Three dependent measures, recall, self-efficacy and expectancy were not statistically significant ($p=.05$) showing homogeneity or equality of error variances among the groups on each dependent measure thus allowing for univariate ANOVAs for both main and interaction effects to be conducted, Table 4.

Table 4.7

Levene's Test of Equality of Error Variances				
	F	df1	df 2	Sig.
Recall	1.145	7	136	.339
Performance	3.106	7	136	.005
Efficacy	.233	7	136	.976
Expectancy	1.578	7	136	.147

* $p < .05$

ANOVAs were conducted separately on each measure to determine the location of statistically significant multivariate effects. Recall and performance showed a significant univariate effects on ethnicity. For participant's ethnicity main effect, recall and performance were both statistically significant $F(1, 136) = 7.174, p < .008$ Partial Eta .050, and $F(1, 136) = 6.741, p < .010$ Partial Eta .047 respectively. The differences between the two ethnic groupings produced the statistically significant multivariate main effects for participant ethnicity.

Performance and efficacy showed significant univariate effect on gender.

For participant's gender main effect, performance and efficacy were both statistically significant $F(1, 136) = 9.883, p < .002$ Partial Eta .068, and $F(1, 136) = 4.551, p < .035$ Partial .032 respectively.

The following mean differences produced the statistically significant multivariate main effect for participant ethnicity, (Table 4.8).

Table 4.8

Multivariate tests: Ethnicity gender and Ethnicity by gender

Effect	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Ethnicity	.904	3.515	4.000	133.000	.009	.096
Gender	.899	3.733	4.000	133.000	.007	.096
Ethnicity*Condition	.931	2.474	4.000	133.00	.047	.069

Table 4.9

Tests of between subjects effects

Source	Variable	df	MS	F	Sig.	Partial Eta
Ethnicity	Recall	1	66.801	7.174	.008	.050
	Performance	1	9.884	6.741	.010	.047
Gender	Performance	1	14.491	9.883	.002	.068
	Efficacy	1	65.274	4.551	.035	.032
Ethnicity*Condition	Recall	1	66.090	7.097	.009	.050
Gender*Condition	Recall	1	39.912	4.286	.040	.031

Table 4.10

Multivariate and Univariate Analysis of Variance for recall, performance, efficacy and expectancy

Multivariate Source	F^a	Recall	Univariate Performance	Efficacy	Expectancy
Ethnicity	3.515*	7.714*	6.741	.811	.016
Gender	3.733*	2.677	9.883*	4.551*	1.232
Condition	.539	1.777	.155	.001	0.47
Ethnicity*Gender	.549	.231	1.492	.094	.018
Ethnicity*Condition	2.474*	7.097*	1.390	2.310	1.340
Gender*Condition	.896	4.286*	.001	.124	.725
Ethnicity*Gender*Condition	.974	3.004	.147	.556	.491
MSE		9.312	1.466	14.344	15.781

*p < .01

Table 4.11

Mean Scores and Standard deviations for measures of Recall, Performance, Efficacy and Expectancy as a function of participant ethnicity.

Group	Recall		Performance		Efficacy		Expectancy	
	M	SE	M	SE	M	SE	M	SE
Non White	9.082	.340	7.972	.264	10.261	.422	12.118	.443
White	10.810	.548	8.637	.218	9.540	.681	12.223	.714

Table 4.12

Mean Scores and Standard deviations for measures of Recall, Performance, Efficacy and Expectancy as a function of participant gender.

Group	Recall		Performance		Efficacy		Expectancy	
	M	SE	M	SE	M	SE	M	SE
Male	10.474	.486	8.707	.193	10.754	.604	12.637	.633
Female	9.418	.424	7.902	.168	9.046	.526	11.704	.552

As noted, ethnicity and gender produced multivariate main effects. Separate assessments of each dependent variable are explored with post hoc comparisons. For the main effect of ethnicity, whereas recall and performance on the reenactment task were statistically significant, efficacy and expectancy were not. The differences between the ethnic groupings on recall and performance produced a statistically significant multivariate main effect.

For the participants' gender, only recall dependent measure was statistically significant indicating that males differed significantly from females on this measure. A closer look at the Tukey HSD post hoc tests revealed that white participants scored significantly higher than non-whites on the measure of recall. They tended to recall more information (M= 10.810, SE = .548) presented by the model as compared to non white participants (M = 9.082, SE = .340), Table 4.11.

Also, on the measure of performance, white participants scored significantly higher (M=8.637, SE.218) as compared to non-whites (M=7.972, SE.135). And for the main effect of gender, males scored significantly higher on the measure of

performance on the batting task. ($M=8.707$, $SE = .193$). When compared to females ($M = 7.902$, $SE=.135$), Table 4.12.

Graphs showing the main effects and interactions

Figure 5. 1 Main effect for recall

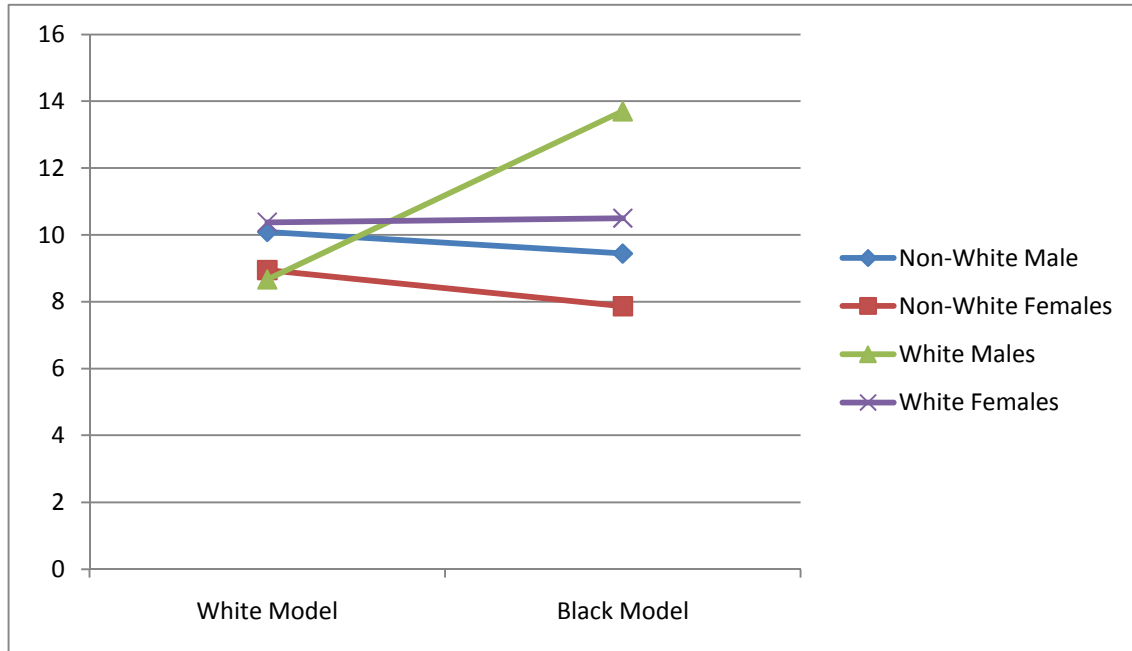


Figure 5.2 Overall recall main effects

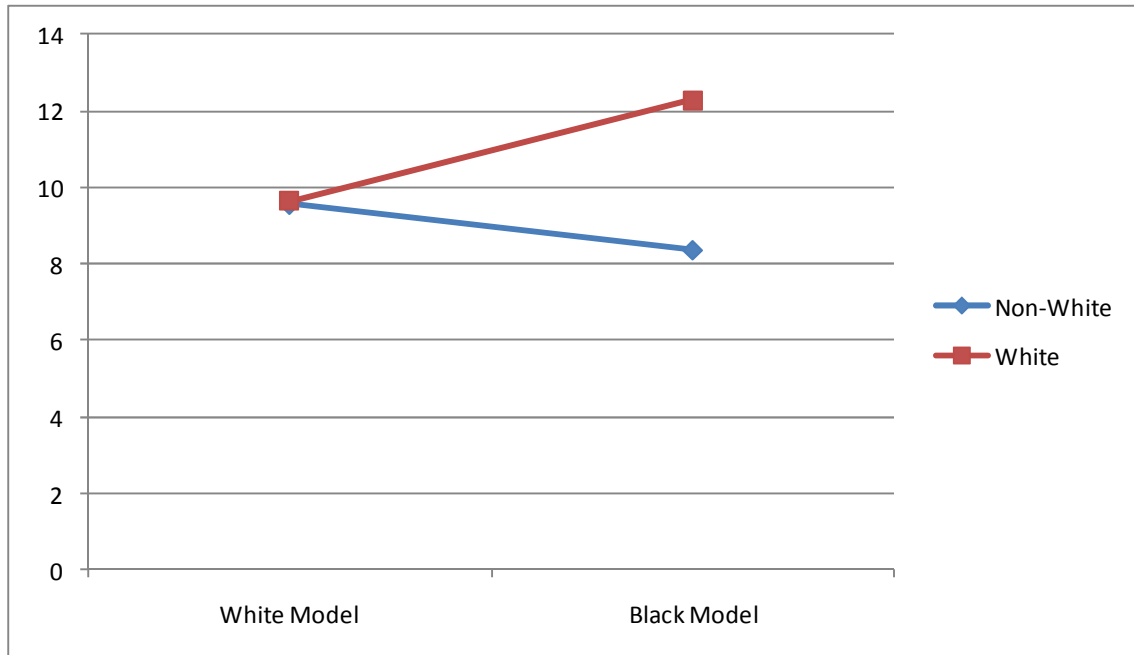


Figure 5.3 Main effects for performance

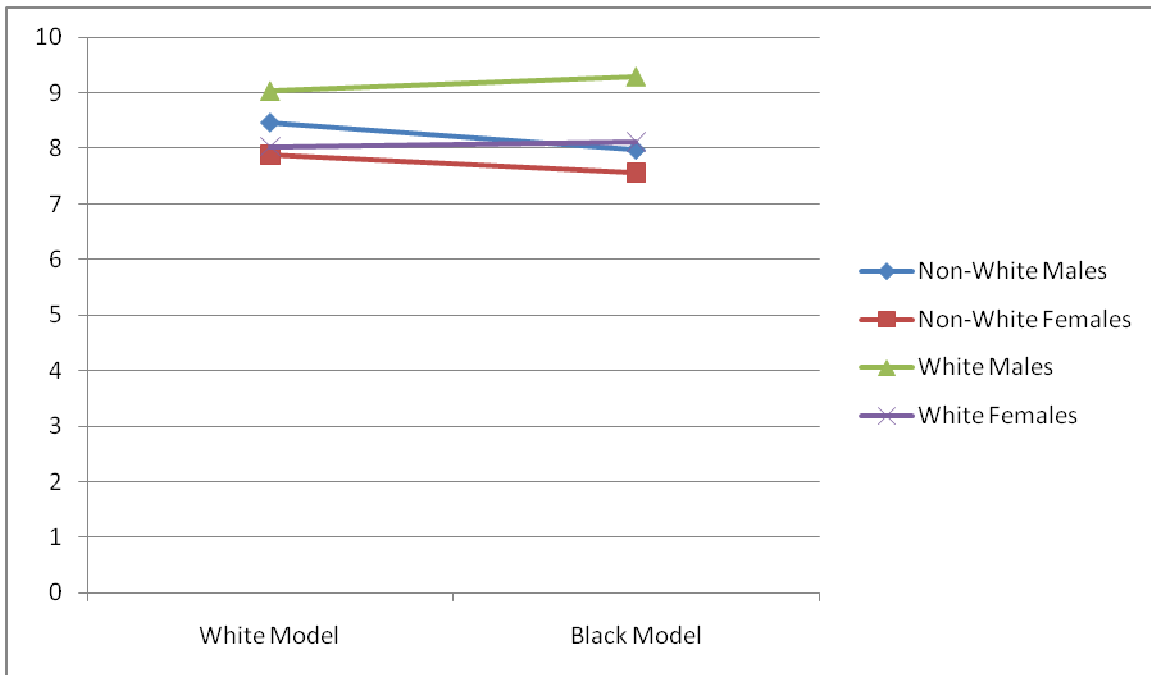


Figure 5.4 Main effects for performance overall

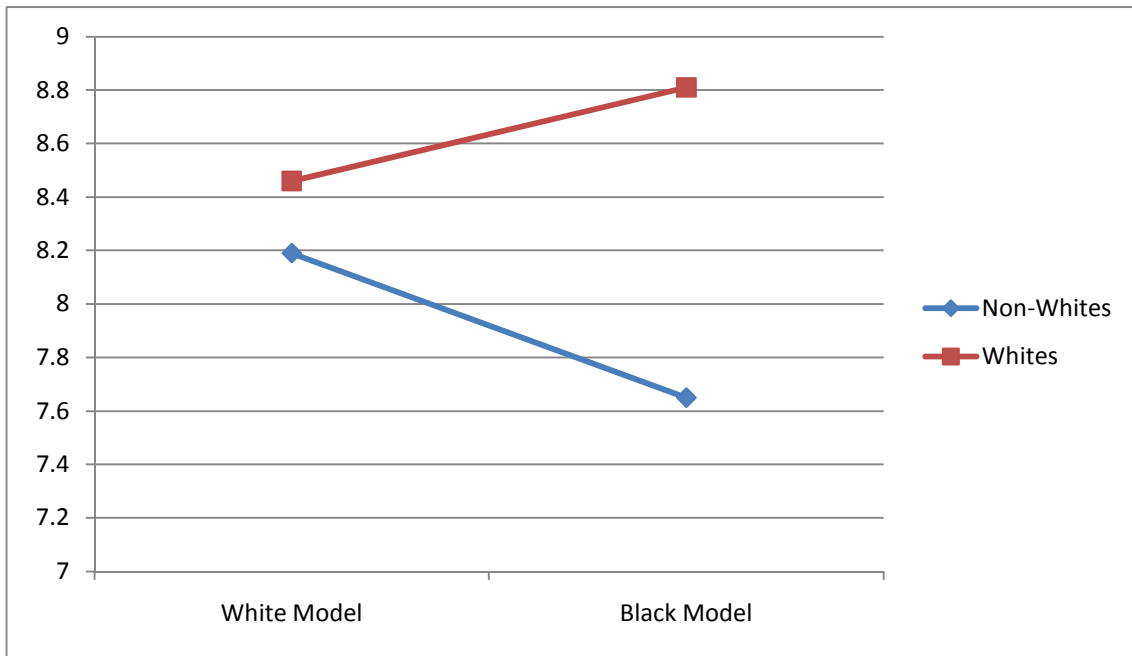


Figure 5.5 Main effects for efficacy

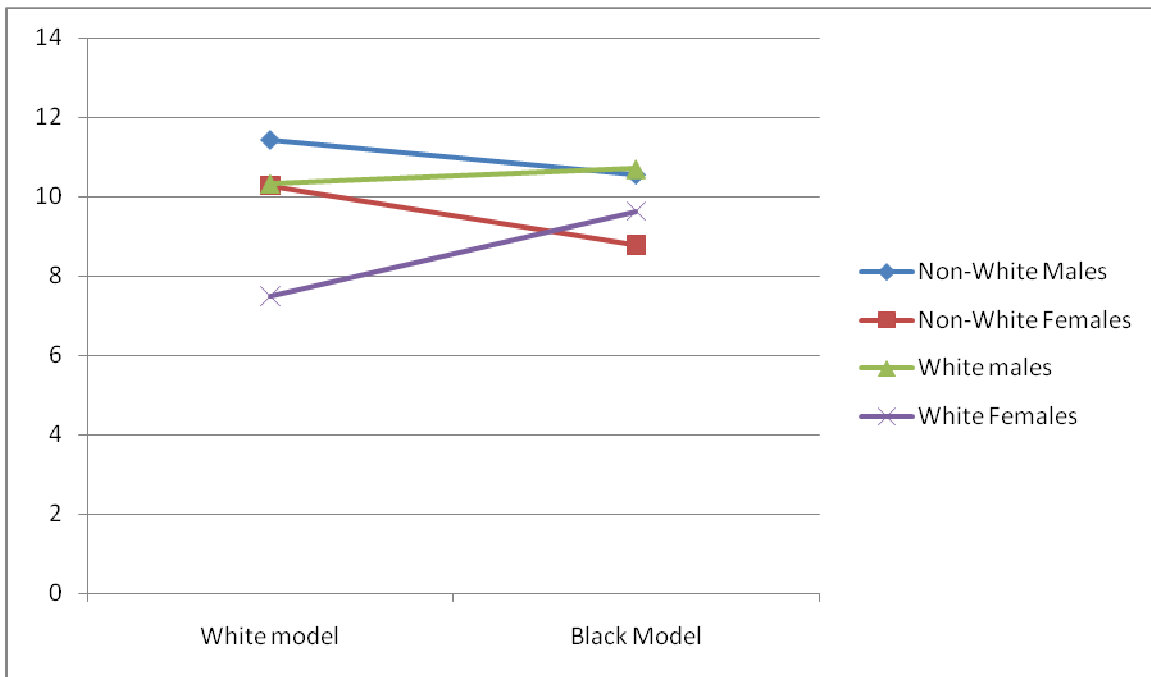


Figure 5.6 Overall main effects for self-efficacy

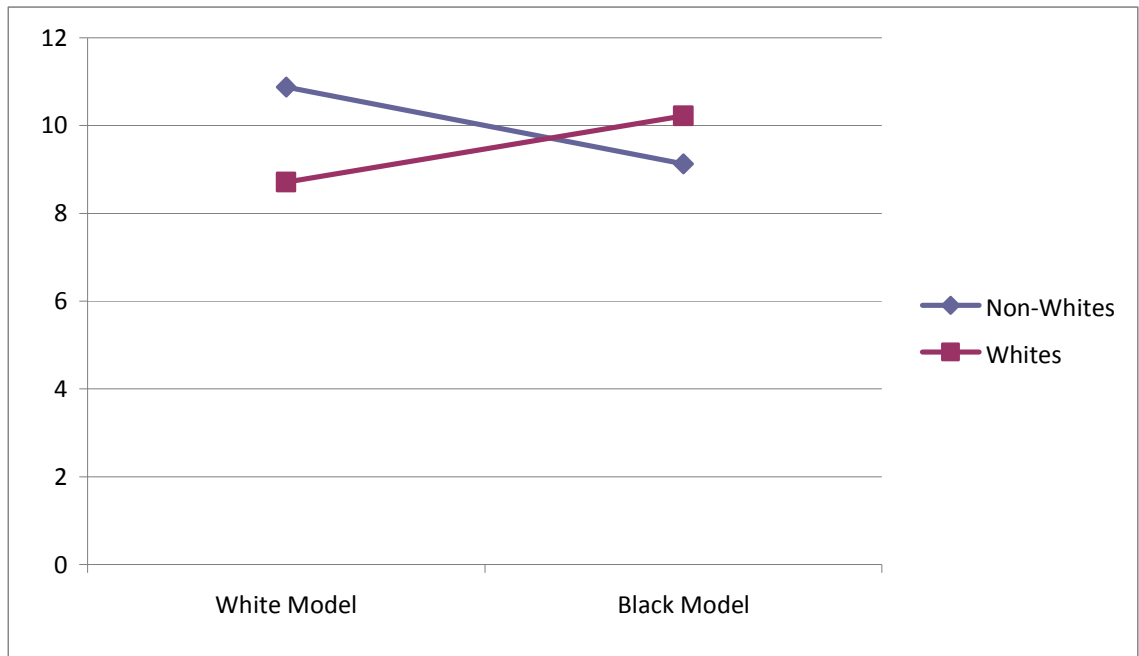


Figure 5.7 Main effects for expectancy

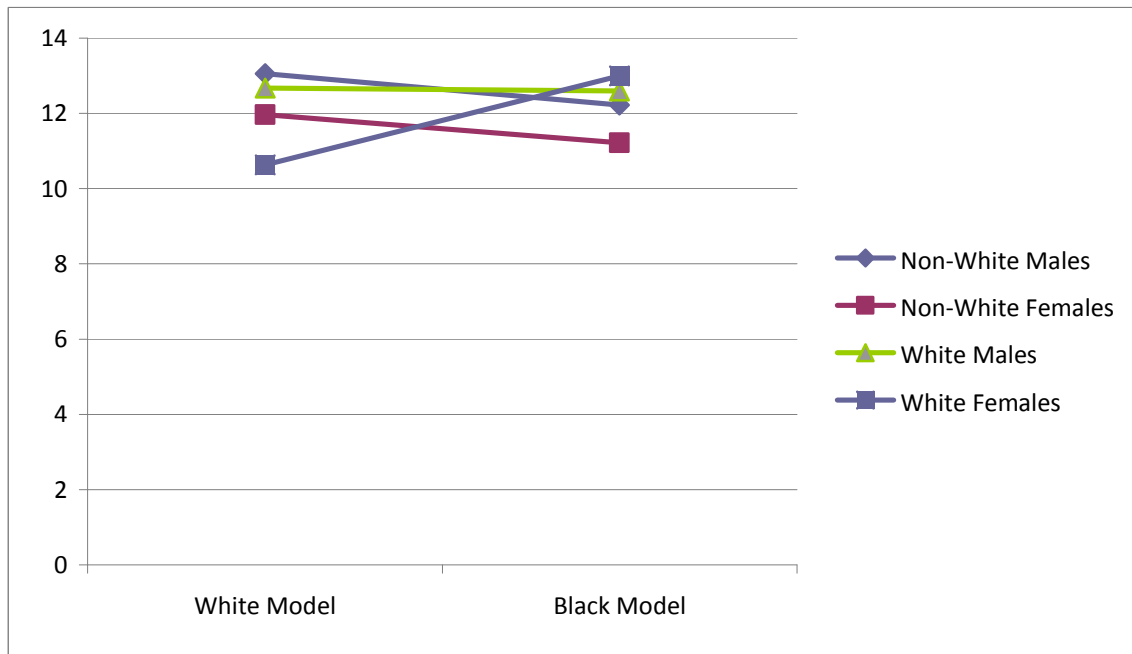
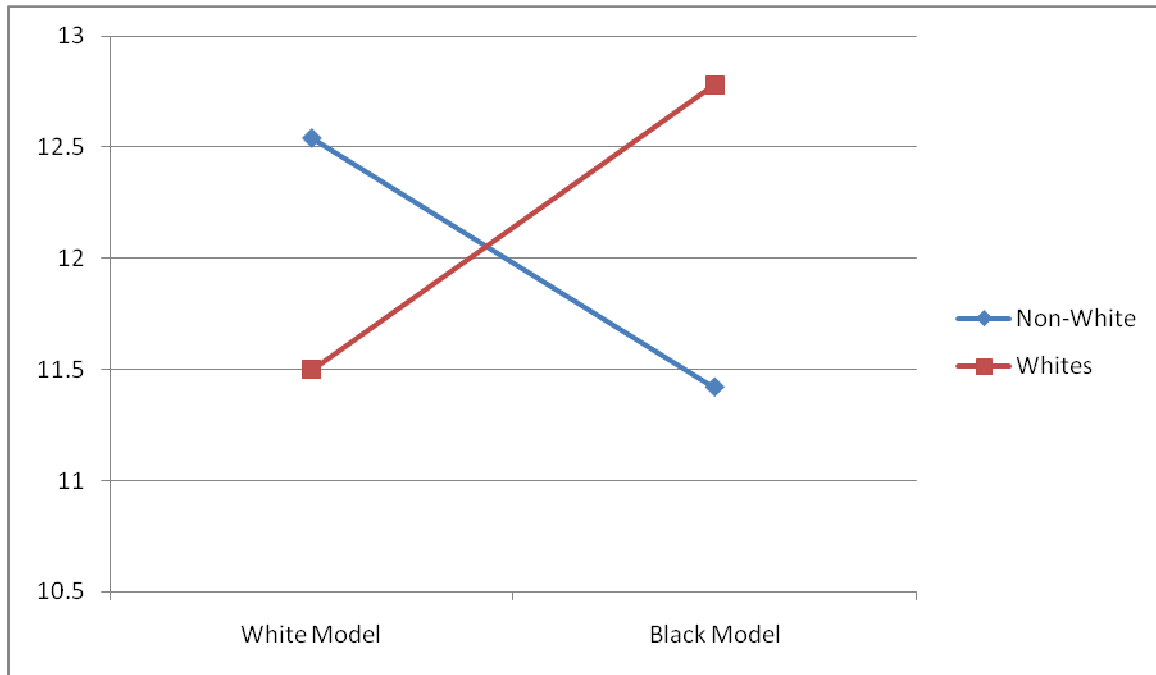


Figure 5.8 Overall expectancy effects



The means obtained from descriptive statistics of each independent variable being examined were obtained from tables 4.2, 4.3, 4.4, and 4.5. This was done in order to examine the main effects and the interaction effects among the various independent variables and their levels. Interactions are recognized by plotting the means in graphs for each independent variable and comparing their slopes. When the lines are graphed and they are not parallel, that is as good as saying that there are different relationships observed for different levels of on each independent variable (Meyer, Gamst & Guarino, 2006). The lines need not intersect to infer relationships of the interactions.

Figure 5.1 shows the effects of recall, white males posted higher scores under the black model condition than in the white model condition on recall. Non-white males and females fared better under the white model condition.

Figure 5.2 overall interactions for recall indicate white participants fared better under a black model condition as compared to non-whites who did better collectively under the white condition as compared to under the black model condition.

Fig 5.3 indicated that white females marginally fared better under white condition on the variable of performance, with non-white males and females faring better in the white model condition.

Figure 5.4 shows overall interaction for performance where again non whites fared better under white model condition while the white participants did much better in the black model condition.

Fig 5.5 shows interaction for the variable of efficacy. Non-white males and females again fared better under model condition as compared to black model condition. On the other hand white males and females fared better in the black model condition. This was also reflected in the composite means for both males and females for the non-white and white participants respectively as depicted in figure 5.6.

Figure 5.7 shows the interactions for expectancy. Here, white males displayed almost even performance when their means in the black model and white model condition are compared. White males again scored higher under the white model condition on expectancy.

Figure 5.8 shows the plot of the composites for both gender interactions for the variable of expectancy, non – whites scored higher in white model condition and

lower in the black model condition whereas white participants generally fared better under the white model condition.

Qualitative results

The interviewees

Before the analysis of qualitative data, pseudonyms were generated to keep the identity of the participants anonymous. The designation of their ethnicity is indicated in brackets based on self-report by the participants. The following are the representative profiles of some of the participants interviewed. Some of the data also came from the analysis of written statements given by participants following doing the recall part of the study.

Mark (W) – white boy who observed a white model

Dante (B) – black boy who observed a white model

Kavita (B) - black girl who observed a white model

Carlos (H) – Hispanic boy who observed a white model

Juan (H) - Hispanic boy who observed a white model

Tom (W) - white boy who observed a black model

Perez (H) - Hispanic boy who observed a black model

Alisha (B) - black girl observed a black model

Cindy (W) - white girl observed a white model

Ryan (W) – white boy who observed a white model

Rob (W) – White boy, observed black model

Matt (W) - White boy, observed white model

Data analysis revealed a number of emerging themes.

Similar model condition

Pronounced affect

Participants in the similar model condition showed more identification with the model at a personal level. They tended to link their observations with their own experiences even when they reported having not been exposed to cricket before. Modeling by a similar other seemed to overtly raise their self-efficacy beliefs in congruence with contention of McCullagh & Weiss (2002) that observational learning and self-efficacy are constructs that go hand in hand. These authors identified model similarity in observational learning as a fundamental source of self-efficacy beliefs that as a result influence thoughts, emotions and inevitably behavior. This observation is also consistent with the conclusions of Yancey et al. (2002) who reported that adolescents appreciated a chance to listen to individuals they perceive to have come from similar circumstances or background.

Participants cited examples and gave statements that were revealing especially when the nature of attention they rendered to the model that was similar to them is considered. It almost seemed like they developed some degree of intimate familiarity or relatedness with the model that was similar to them. This observation is in alignment with the contention that retention is improved by transforming the new into the familiar, which already exists in the long-term memory that has been abstracted by observers who often have common features from otherwise varied modeled acts (Bandura, Jeffery & Bachicha, 1974).

An example that sums up the collection of responses under this category was that of Ryan (W). In response to the request to list all the things they have in common with the demonstrator, he wrote:

Nothing really besides the fact that we are both human....

The response of Cindy (W), a diminutive sixth grader, to the same question of commonalities with the model was even more descriptive:

“My mom played it when she lived in England...”

Albeit she skirted the questions of what she thought she had in common with the model altogether, she could readily draw at least some other vague relatedness from her personal relationships. Having indicated that she has not seen cricket played before, it is interesting that she could find some kind of commonality, even under a realm that she was not asked to draw commonality from. This tended to be in alignment with Bandura’s (1986) predictions that the greater the perceived similarity between the individual and the model, the greater the influence the model exerts on the individual. This individual is likely to be interested in observing and learning concepts in cricket; somehow, feelings of familiarity seem to have been activated in her and her interest accentuated.

Given the fact that a person’s physical appearance along with his sexual identity are the personal characteristics that are accessible to others in a social interaction (Dion, Berscheid & Walter, 1972) it is reasonable to draw the conclusion that similarity played a big role in these participants’ attempt to identify with an obviously new concept owing to the fact that a similar other was involved in it. As Ruble, Grosovsky, Frey & Cohen, (1992) contended, one significant source of information for an individual about

his or her competence is social comparison. This contention from social comparison theory holds that when an individual's unambiguous criteria for ability and performance are not available; people take to other individuals for subjective standards. People tend to project themselves as being able to do something as those who are similar to them.

Also under the similar condition, participants were apt to make expressions that were constantly reflected in the analysis as being expressive of liking the demonstrator's actions. There seemed to exist a profound sense of affect with the model. Rosenthal and Zimmerman (1978) aptly summed up this phenomenon in their argument that "data that are personally meaningful are easily apprehended" (p 46).

Model facilitated easy learning and exhibited smart moves

Participants under similar condition and to some extent Hispanic participants observing a white model expressed the view that the similar model made learning of the skill easier. There was ample consistent evidence indicating a similar model left the participants in this condition with elevated feelings of self-efficacy with regard to either performing or teaching the skill to others. Juan (W) reported for instance that:

...since they do it really good, I think I will learn fast how they do it. And they kind of like do the things I do....

The most interesting response though is that from the category represented by Tom's (W) response. The self-assessment by the category represented by this observer despite being of the view that they could be good performers in this task, just like the model similar to them, did not imply that them should be considered athletic.

As discussed in the review, stereotypical perceptions clearly dichotomize intelligence and athleticism as mutually exclusive constructs.

These participants' thinking is very interesting in the sense that they clearly delineated the aspects of their performance. Tom for instance, characterized his performance as smart or intelligent even though they were made in the athletic context. He was sure to highlight the stereotype that smartness and athleticism are exclusive constructs. And since he claims membership in a group that is stereotyped as smart, he seems to go to a great length to confirm this since the setting is contrasting with this stereotypical premise.

The observation by this participant that he possesses knowledge about sports that some people may not be privy to is even more telling. The apt exemplification of this view is perhaps best captured in his response to the question of commonalities he has with the model:

...I have a very good throwing arm and I have speed to run. I used to play softball which in some ways is similar. I am very intellectually inclined and I may "catch on fast". I believe I am good at anything that I practice. Like the men in the video I possess knowledge about sports that some people may not have.

This response raised the specter of intelligence and athleticism which was totally unexpected. Clearly, in this response, comparison, albeit subtly made, between athleticism and smartness is alluded to. This is interesting because as discussed in stereotype literature, Whites are considered smart whereas African Americans are framed as natural athletes. The obvious implication of this of course is the deductive nature in

which these participants derived their conclusions about their ability to perform the task demonstrated by a similar model. They identified with what was being done because someone like them was doing it, and then it must be the smart thing to do. It is athletic alright but there has got to be something smarter about it. However, despite noting that what is demonstrated is easy enough because of their perceived athleticism, they have to make it clear that they are athletic but smart above all.

This could be understood in light of the findings of a study by Johnson, Hallinan & Westerfield (1999) that found subjects more inclined to believe the success for black pictured individuals cast as athletes to be result of innate athletic abilities. And for pictured white models, success was viewed as resulting from hard work and leadership ability (this indicated this participant who was white viewing a white model, was able to relate to a white model. He seems to have bought into the “smart group” stereotype; he is even making sure that a clear distinction is drawn between his athleticism, which he perceives to possess, and his smartness.

This summation is a classic example in the category where the obvious similarity was deduced from the ethnicity of the model and stereotype. The model in this condition clearly had the edge in rendering more information to this participant. What a model like him is doing albeit athletic must also be the smart thing to do and he should heed!

Vividness and clarity in recall

Majority of participants under similar condition were more detailed and colorful in describing the actions of the model. They gave a more vivid account of actions when compared with the responses from the dissimilar group.

The statement that is typical in the category is best represented by the response of Mark (W)

...I remember that you have to get a head start to bowling and then you ran then have to do the whole arm motion.

...I can do batting, definitely.

And another response that will suffice here is that of Alisha (B).

You are supposed to have a good grip, keep your arm straight out and throw it. And you have to keep that position so that you can get a good follow through.

Vividness of descriptions was identified by comparing responses by participants and the fact that it was a totally new concept to them as they indicated in their self-report about their previous experiences with cricket.

Elevated self-efficacy and confidence in own ability

Another theme that emerged consistently in most responses in the similar model condition was that of heightened sense of self-efficacy. Participants viewing a similar model made overt self-efficacy statements about their ability to perform what was demonstrated. They aptly identified the actions of the model and were definitive in their confidence to either perform or teach peers what they had observed. They expressed certainty in their ability to perform with unmistakable sense heightened self-efficacy. The most interesting thing with the participants typified in this category is the fact that even after making statements regarding the novelty of the concepts and skills they observed, they were very categorical in their affirmation that they can perform and teach others what they observed. For example, participant Tom (W), on why the demonstrations were interesting responded:

Tom: Because they are athletic and I like challenging things, I like to learn new things.

Interviewer: Do you feel confident that you can perform the skills as they were done by the demonstrators?

Tom: Yes.

Interviewer: What other things can you remember from the video demo?

Tom: The throwing, the batting, I mean everything...

The responses that fell under this category are consistent with the arguments and findings of Gould and Weiss (1981). They argued that persons who view similar others perform successfully (as compared to dissimilar others) are expected to raise their own self-efficacy expectations because they will perceive themselves as possessing similar capabilities that are necessary to successfully perform comparable activities. They contended that self-efficacy appraisals could be greatly influenced by perceived similarities between the observers and the model.

Even for some of the participants who could not readily recall all the information about a particular question or a sequence that they had observed, they expressed a greater sense of confidence in performing or teaching the tasks. They projected a feeling of having appropriated the concepts without conscious engagement on their part.

This concurs with Rosenthal and Zimmerman's characterization of target modeling in the following way:

In most social exchanges, meanings are conveyed by cues deriving from multiple sources. Vicarious learning requires neither a human model, nor the exemplification of the entire sequential episodes. People learn from charts, diagrams, and other target replicas. Observers are guided by more than the activities they watch or which are described to them. Inferential processes allow learner to extrapolate from the environmental consequences which are left as clues by completed deeds. Reasoning can also proceed in reverse, moving backward from the final stages of perceived events whose origins were not observed.

Dissimilar model condition

Skill transfer

A considerable number of participants under dissimilar model condition attributed their learning and confidence to have learnt concepts and skills from the model and later be able teach them to transfer from another activity or sport that they were familiar with. Of all the participants that viewed a model that was dissimilar, 34 implied some sort of transfer from another activity. The implied transfer seemed to be an unconscious rejection that the model played a role in their perceived learning of the task.

Albeit motions in cricket do not compare precisely with those in the sports that were widely cited by participants, the very reason which made it suitable for this study as a novel task. Majority of the participants indicated their ability to do these things citing similarity to diverse activities like baseball (26), softball (4), volleyball (1) golf, (1)

and tennis (1) as being comparable in some respect to cricket. Some of the sports cited are not even remotely related to the actions in cricket and bear no semblance whatsoever.

A foreign novelty

Participants also offered terms in their responses in describing the actions and motion in cricket. It emerged in this category that the framing of the skills and movement in cricket by participants in the dissimilar model condition tended to implicate the perceived alien nature of cricket as a source of their disinterest.

An apt example that typifies this category is found in the response of Ashton (W):

... It was foreign in nature, is based off a sport cricket and was centered around the play of a single game.

This sport is a bore

The next theme to emerge from the data was the perception among participants under the dissimilar condition of the actions of the demonstrators as boring. This recurred with a constant regularity that starkly contrasted with the responses provided by participants under the similar condition. The participants in this situation characterized cricket as dull and unexciting, something which could be attributed to absence of anything linking them to the sport.

For example Kavita (B) summed up this contention very well. In reference to what was interesting about the demonstration, she responded:

“...I think this game is boring. It is so boring that it makes baseball look like fun.

That is how boring it is.”

The significance of the collection of responses falling under this category could best be seen in the light of self-efficacy. Weinberg, Gould & Jackson, (1979), established that there is a clear cut difference in performance between low and high self-efficacy individuals. Individuals that made positive statements about their abilities to perform a leg extension task performed very well in sharp contrast with individuals who made negative statements about their self abilities.

The impact of self-efficacy in physical activity is also underlined in the findings of Rudolph and McAuley (1996) that established that pre performance self-efficacy was directly related to performance and post performance self-efficacy. They concluded that:

From a social-psychological perspective, these findings are important because perceptions of exercise capabilities appear to play big a role in perceptions of effort during exercise, regardless of actual exercise ability.

The specter of raw athleticism

Another distinct category emerging under this condition was the characterization of the demonstrated actions and skills as raw athleticism. Participants made the descriptions of the motion as raw power. This was more evident especially among white participants observing a black model. An apt example that captures this category was that of Bill (W). In reference to movements that were likeable to him he said, “I honestly thought that batting was cool. Bowling too, because it was frantic and all over the place”

There is some sense of admiration for the “cool” that is held by this participant. “Cool” is something which has been described as being the embodiment of black athleticism.

However, there is also the overt depiction of black model as being in possession of raw athletic power and the implicit allusion to the crude, untamed and wild black athleticism.

The way of doing things with the body influences others perception of their (own) putative ability to reenact the modeled acts. And this is often manifested in fundamental ways. Rhoden (2006) best illustrates the impact of this phenomenon in describing how Willie Mays influenced him. That demonstrations influence individuals motions in more fundamental ways than we can ever imagine.

From then on, I watched Willie Mays whenever I could: watched the way he ran, they way he hit. I went outside and tried the basket catch. I tossed the ball up or had someone hit it to me. The ball landed on my head, hit my chest fell on my right or left. Catching a fly ball was hard enough. Making it look easy was impossible. I never learnt to make a basket catch, but I was determined that whatever I did – mow the lawn; rake the leaves; play a sport- I would do it with the grateful ease and cool of Willie Mays. There was something magnetic about Mays, not just the basket catch or the speed, but the familiar nuances I recognized in his body language.

The response of Bill (W) shows a kind of ambivalent assessment of the situation. There is cool portion of it that he admires albeit he is also conscious of the raw nature of athleticism. These “cool” and the “frantic and all over the place” assessments seem to be informed by his observation of the black model. Whether he will be inclined

to model the skills demonstrated is another matter but this is the basis with which he will assess suitability of the novel game for him.

Ease of performance and natural athleticism

This category was also interesting in the sense that though it is comparable to the same theme that emerged under similar model condition, participants under dissimilar condition also cited the ease of doing the motions demonstrated, though there was a glaring distinction. Under similar condition, they viewed the actions as being easy to master even after indicating that the skill was unfamiliar, new and strange. In the dissimilar condition, there was latent allusion that the ease of the actions was such that there was no need for a demonstrator showing it.

An example that is vivid enough to capture this category was that of Rob (W):

...I think probably the only thing I can teach is probably the batting because it looked like it was pretty easy. And it was kind of hard to understand what the guy was saying, what he was saying and batting just following the guy's motions that is how I figured out...

They helped me to understand a little better just like actually watching somebody just plays...

Sagging feelings of self-efficacy

Also, in stark contrast to participants under similar condition, participants in the dissimilar condition showed palpable hesitance in expressing confidence to reenact or teach the actions of the demonstrators. A regular pattern emerged where participants began by expressing self-efficacious feelings about their ability to perform at the batting task or teach it to others then following it up with a negation of the feeling of confidence.

This was perhaps the most interesting because it did not appear in the similar model condition.

An example that sums up this category was provided by Kavita (B). On the question of her confidence to reenact batting and her perceived ability to teach others, she responded:

...Somewhat. I will probably say I might be good at it but not too good...

The other things, the running out there, do you now that, I think I will do well, but not too well. I think I will be able to get it into their minds but not very good...

Participants in this category displayed curious ambivalent pattern by casting doubt on their assessed abilities to reenact what was demonstrated.

DISCUSSION, CONCLUSIONS AND IMPLICATIONS

Quantitative

The present analysis of quantitative data provides information on a number of issues raised in this study. To begin with, non white participants fared better on all measures under the white model condition in stark contrast with the white participants who consistently fared better under the black model condition. This is to say that non-white participants consistently indicated a trend suggesting that a white model imparted more information, demonstrated better task relevant cues for performing of the novel skill and therefore raised their expectations of doing well at the task.

In a way suggestive of the perceptions of “white is better” and an uncanny semblance to Clarks’ (1955) doll experiments in the physical activity arena, the non-white participants consistently posted a significantly higher score on all the measures when observing a white model when compared to when observing a black model. The demographics in this group included Latinos, African Americans and Asian American. However Latino participants formed a large bulk of the non-white participants group followed by Asian Americans and blacks respectively. In interpreting the results from this ethnicity grouping, this should be put into consideration.

There are a number of speculative reasons as to why non-white participants posted these results. It was argued for instance by Andersen & Cavallaro (2002), that African American and white children are more likely to have role models of their own ethnicity and that Asian American and Latino children tended to choose white

role models and heroes than from other categories including their own role models. They contend that this could be explained as a byproduct of assimilation. That Asian American and Latino children may have internalized a message that they should not look up to fellow Asian American or Latino role models.

The contention by Gibson & Cordova (1999) that boys tend to imitate and model after those who are deemed to possess power in one form or the other seem to apply in this context, albeit subtly. Individuals or groups who are perceived as being high in social power are often more likely to be emulated as they are also more likely to be portrayed in positions of power. This may explain why individuals from the non-white participant's ethnic grouping consistently scored higher under the white model condition.

Though this went counter to the predictions, with the exception of the variable of expectancy (where white participants significantly expected to perform better at the novel task after observing a white model). The fact that both male and female white participants significantly scored better on three measures after observing a black model was interesting because this seemed to point at the participants' perceptions about black athletic superiority that, a view which is widely held in the American society. This supports the arguments that the notion of black athletic superiority is pervasive permeates all facets of American society (Wiggins, 1989).

This seems to suggest that even as early as at these participants' age, younger white participants have already bought into and internalized the notion of "white men can't jump". Though white male participants still expected to perform well after observing a white model, they indicated more feelings of self-efficacy, performed better at the batting task and recalled more information from a black model. This is consistent

with the findings of Azzarito & Harrison (2008) who demonstrated that high school boys complied with the notion of black individuals in sport settings as endowed with natural physical superiority.

However, the disparity between the assessments displayed by white boys as compared to white girls on the measures was interesting. White female participants significantly fared better on the measures of self-efficacy and expectancy under the black model as compared to the boys. This means that the black model imparted feelings of self-efficacy and expectancy to do better among the girls than it did among the boys of this demographic.

It is probable that the score of white boys on these measures as compared to that of the girls was stymied by stereotype threat. Albeit they scored higher under the black model condition, they did not rate as high as the girls did and there was a distinct disparity. A comparison of the girls' and the boys' scores on these measures may suggest the working of the stereotype threat because race was made salient. Boys may have underrated assessment of their ability to execute the demonstrated task because sports and athletics present one of the few domains in which whites are stereotyped negatively and suffer psychologically as a result (Stone, et. al., 1999).

The fact that white males expected to perform better under white model condition is interesting because, though they could identify with a similar model and had expectations of faring better, the force of the perceptions of athletic superiority of the black model seem to have sabotaged this expectation which resulted in making them fare no better in the other measures. The evident disparity of scores on the measures between two genders of the same demography may be attributed to the general imbalanced profile

of male and female sports. In American society, perceptions of athleticism are likely more pronounced among males than females. This is due to the fact males dominate high profile competitive sports that portray African Americans as having an edge over Anglo Americans, thus the disparities in the stereotype threat effect.

The results therefore suggest a general trend among the white participants to consider a black model in athletic contexts as an authority in matters to do with physical performance. Since the footages of the video were obtained from sections of the Cricket World Cup tournament, situations that portray athletes performing at their very best, this may have had an effect of portraying the image of black “super athlete”, something which the media constantly depicts and reinforces.

Another thing that may have led to these results is that white boys may be under a more conscious influence, from parental teachers and coaches to steer away from developing lofty athletic aspirations (Harrison Jr., 2004). This may be truer to boys compared to girls again because the media profile of women sports is lower in comparison to male sports.

Qualitative

The results of this study, albeit far from conclusive, present adequate grounds to argue that a similar model would exert comparatively more influence in conveying more relevant information on suitability, and therefore, learning of motor skills through observational learning. As Lockwood & Kunda (2002) report, children tend to choose models whom they find relevant and whom they can compare to themselves. Ryska (2002) also argued that in participating in physical and sporting

activities, children derive a sense of personal competence as a result of learning to assess various sources of self-referent information within the sport or physical activity setting. Andersen, (2002) too, posited that children may identify the models they wish to emulate based on possession of certain skills or attributes.

A plethora of factors that seems to inform participants of the suitability of tasks or skills based on observing either similar or a dissimilar model, a fact that was echoed in the survey done by Harrison Jr. (1999). The survey revealed that participants had very distinct preconceptions with regard to what they perceived to be appropriate physical and sports activities for different ethnicities. This research reported a direct influence on the interest, willingness to attempt, or perform at tasks and skills perceived as suitable for an individual's ethnic group.

Characteristics of individuals performing in certain settings, especially African American, assume a particularly magnified significance. Perceptions of suitability most likely influence an individual's inclination and preference to perform or do a task or skill based on who was seen performing it. As was noted in the survey:

College students at the inception of their adult lives will likely be influenced by their attitudes and beliefs about sports and physical activities they perceive to be appropriate for their ethnic, gender or social group. Most importantly, these perceptions ultimately affect the participants' willingness to participate, their persistence and motivation for continued participation in particular activities.

It is precisely on the basis of perceptions of ethnic suitability of physical activities that the hypotheses for this research were formulated. Evidence suggests that perceptions of suitability of activities, which in this case is framed on ethnic similarity to model, most likely fuel feelings of self-efficacy and heightened expectancy and by extension affect attention, retention, effort and performance.

Another thing that informed the formulation of hypothesis for the research is the contention that impressions of individuals are formed on the basis of characteristics that the perceiver deems important. In the estimation of Friedman, Carlsmith & Sears (1974), at times, the perception of other person is influenced as much by what the rater or observer is like as much as by what the person being observed and rated is like.

In this part of the inquiry, participants' responses indicated a definitive reflection of effect of perceptions and indication that the resultant feelings of self-efficacy and expectancy (or lack of it) that the perceptions likely elicited. Participants who expressed a negative feeling about a task they saw performed are unlikely to be enthusiastic in trying it out.

When this is coupled with stereotype and stereotype threats, it sets stage for interesting investigation like the present study. Stone et al. (1999) underscored the huge albeit subtle impact that stereotype threat exerts in sports and physical activity situations. Stone et al, (1999) notes:

It appears from the data that any situational cue that makes ethnicity salient prior to performance in a stereotype-relevancy domain and specifically makes and the specter of intelligence salient- has the potential to adversely affect performance by participants in that domain.

Inferentially, observation of a black model may have dimmed the interest of the other participants in the group who were not of a similar ethnicity owing to stereotype threat. Participants may have concluded that the novel task is just another “black” or “white” sport because their first exposure to it was by either a highly skilled black or white performer. It may have led them to conclude that the sport was one of those labeled “white” or “black” because of observing an exemplary performance by an individual belonging to the ethnicities depending on which model they watched.

As a consequence, such participants faced with confirming a negative stereotype resorted to rationalizing their perceived inability to perform the task according to Stone et al (1999). It has already been noted elsewhere in the literature review that the media plays a huge role in perpetuating ideas about suitability of activities. Racial stereotypes about the natural black athletic prowess are legend, courtesy of the media. The notion of black athletic superiority has been reported to be perverse not only in the American society but also in other societies like England Carrington, & McDonald, 2001; Hayes & Sugden (1999).

It is interesting to note from the participants responses how a multiplicity of these factors seem to play a role in their overall view to their expressions of liking or not liking an aspect of a skill demonstration and subsequently how this impacts self-efficacy and as a matter of course, performance.

There is evidence in responses like those supplied by Tom (W) on why he found the demonstrated task enthralling and worth attention. Evidence that perceptions espoused by participants like him, are derived from the contemporary beliefs about sports ability and stereotypes are prevalent.

When Tom (W) notes:

...I have a very good throwing arm and I have speed to run. I used to play softball which in some ways is similar. I am very intellectually inclined and I may “catch on fast”.

Tom who is a white participant and was observing a white model is showing remarkable ambivalence about his perceived skill capabilities. The model and he are athletic in spite of their (given) intellectual attributes.

Tom (W), by invoking the propensity for hard work and smartness to counter his acknowledged physical self-efficacy in performing a motor task demonstrated, seems to derive its logic from yet another widely racialized myth of athleticism. His reasoning clearly seems to be informed by the racialized beliefs about sporting ability espoused in Herrnstein & Murray (1996) who posited in the Bell Curve that blacks exhibits intellectual inferiority compared to whites. This respondent curiously goes to great lengths to extricate himself from being placed on the wrong end of the bell curve by pointing out his other attributes despite his acknowledged perceived athleticism.

Worth noting is the age at which myths of suitability of activities, athletic and intellectual abilities and the athleticism-intelligence dichotomy seem to have completely permeated and shaped perceptions of young middle school learners. Azzarito & Harrison (2008) identified sports media discourse as the main sources (of) and institutionalization agents that churn out meanings of sports and physical activity performance on the basis of gender and especially ethnicity.

Participants in this study also tended to concur with the estimations of Giardina (2005) that proliferation of media images has resulted in the creation of explicit and implicit link between ethnicity and sporting and activity performances, specific sport

representation, sport media as popular sporting artifacts, operating pedagogically in the cultural landscaping of national identity and schooling of the minds of the young and adults alike.

Azzarito & Harrison (2008) made the strongest argument on how the pervasive discourse of racialized sport perpetuated by the media and permeating every milieu of the society directly impact pedagogical practices in physical activity and sport. Another interesting phenomenon is the clash of perceptions playing out with regard to the suitability of activities, observing and learning new skills, evident in responses like that supplied by Bill (W). Albeit he recognizes and acknowledges (unconsciously of course) that “batting was cool”, a putative allusion to black athleticism, he subscribes to another frame of reference that is diametrically opposed to the “cool” frame. A closer examination of his thinking reveals two opposite dimensions of what is worth emulating or modeling. This comes strongly to the fore when he invokes raw athleticism (a less than flattering black trait) by saying that “bowling was frantic and all over the place”

The observation made by Bill (W), for instance, who was observing a black model, the sources of his perceptions about the particular model that he observed can be linked to contemporary discourse which Wiggins (1989) noted that athletic superiority of African Americans was putatively attributed to their alleged emotional disposition for brief, terrific effort that sprinting and jumping physical tasks require.

Though outright statements of disinterest in an activity performed by a dissimilar other formed a smaller category overall, responses indicated not only subscription to suitability of physical activity beliefs but also gave a pointer to diverse sources of perceptions about suitability of physical and sporting activities. There is also

evidence here that young individuals come to physical activity settings with clear-cut perceptions about suitability of activities sourced from elsewhere. These are either confirmed or disconfirmed by situational cues. Presentation of skills by similar or dissimilar model to a debatable extent either stymies or promotes interest or disinterest which in turn influences acquisition and performance.

Alisha's (B) response that the game is boring; that it will make baseball look like fun is an example that points to an indication that perception will work to diminish attention. It is less likely from the outset that this participant will render as much attention to the informational cues on the task being demonstrated by a dissimilar model she observed. It is also unlikely that she will express self-efficacy feelings about its performance nor show expectancy to become proficient in it, something which self-efficacy theory shows to be necessary for successful motor skills performance.

In light of self-efficacy theory and its basis entirely rooted in self-reference about ability, known to have an impact on attention, effort, persistence and by extension, performance. It is safe to speculate that the dissimilarity to the model affects physical and skill acquisition and performance in line with the postulations of Weinberg, Gould & Jackson (1979) who established that negative self-reference with regard to physical activity skills capability sounds a death knell to efficacy, effort persistence and performance.

Therefore, consistent with self-efficacy and expectancy theories postulated by Bandura (1977) on model similarity effects, the responses in this study generally indicated that a similar model tends to promote or elicits distinct self-efficacious feelings

and expectancy and elevates feelings of competence whereas dissimilar models, at least in some instances, tend to negate this.

Conversely speaking, the similar model group indicated heightened level of identification with the model. Finding something that they perceived as common when it was actually not comparable showed this. Cindy's (W) casting of cricket as something she will readily try since her mother was familiar with it is a good example.

Yancy, Siegel & McDaniel (2002) examined the role of model characteristics on behaviors of adolescents. They found out that more than half of participants could identify specific models directly related to higher esteem, higher performance and stronger ethnic identity.

There has never been doubt about the positive modeling effects of PE teachers in the PE classrooms. As a matter of fact, Glover (1978) expounded that PE and health educators convey important messages to the students consciously and unconsciously by their actions and appearance. This was magnified by the investigations of Melville & Maddalozzo (1988) who demonstrated that an obese teacher conveyed less information about fitness compared to a non obese teacher. A plethora of media forms bombard children on a daily basis with a multitude of cultural messages. Which ones do the children heed?

The other area where interesting findings were noted in qualitative responses was responses supplied by participants that were similar to neither model. Mirroring Andersen & Cavallaro (2002) who reported findings from a survey that African Americans and white children were more likely to find models or heroes of the

same ethnicity, participants in this study that were neither white nor black, like the models tended to render a marked affect for white model as compared to the black model.

According to Andersen & Cavallaro (2002), Asian and Latino children chose more white media heroes than other categories. This, they suggested that perhaps Asian and Latino children have internalized the messages that they should not look up to fellow Asian or Latino models or may be a by-product of assimilation.

This study is beset by a number of limitations. To begin with, owing to the use of convenience samples, there was no randomization. There are a number of concerns with regard to data analysis where gender consideration of the models was not taken into account. Given these limitations, pedagogical implications of this research must be viewed cautiously.

In light of these results especially the qualitative results, it will provide an opportunity for teachers and physical activity practitioners to ponder learner's choices, tendencies and preferences for various activities. An insight into what drives learner's preferences will especially in modeling situations be invaluable in the sense that teachers and professionals employing modeling will help them in developing strategies for motivating learners better.

In this era of technology proliferation when teaching and instruction has been enhanced unlike other time by use of technological learning resources that include video, the suggestions of this research will inform not only the devising of these teaching resources but also the choices that are made when acquiring these resources for use in instruction.

Individuals intending to use video for instruction will be better informed to choose the materials for their classes. The consideration that they should have in mind is that of the ethnic makeup of the learners with whom they intend to use the resources.

Another area that is likely to be well informed by what these findings seem to suggest is teacher recruitment and preparation. This will underline the need to emphasize the recruitment of teachers especially minority teachers whose presence in the teaching of physical education, positions that call for the extensive use of modeling strategies for instruction, is starkly deficient. If learners in physical activity settings tend to model those individuals that are similar to themselves, it will clearly be more beneficial to have more individuals of similar ethnicity taking teaching and physical education.

This conversation will also be crucial in recognizing that myth making about the suitability of activities begins at a very early age and need to consciously disprove it. Teachers will do better promoting a wide range of activities, especially stereotyped activities, as ethnically neutral to ensure that learners will always have a wide repertoire of activities to choose from in order to stay physically active for a lifetime. The limiting perception that some activities are suitable only for some ethnicities reduces opportunities to participate in activity even in the ones that may be readily available and convenient.

Future research should look to compare one or two demographics to minimize the chances of confounding variables. For instance in this study male models were employed and participants were of mixed gender. More work needs to focus on this age group as these results seem to indicate that perceptions of suitability of activities

take root at a much younger age. Studies looking at or comparing two demographics at a time seem to be ideal for addressing the questions asked in this study. Factors that influence boys perceptions about activities and sport tend to differ. Profiles for male and female sports are varied to begin with. A younger population than this one will also need to be employed in the study albeit the benefit of ability to reenact tasks will be lost. This is because the results of this study may indicate that the parental influences and even stereotype threats are already actively influenced perceptions of suitability of activities. Perhaps a younger populace than this will demonstrate the influences of similarity better in the quantitative design as well.

Appendix (Appendices)

Appendix A:

Letter of approval from district



1401 West Pecan
Pflugerville, Texas 78660
Fax Number: (512) 594-0051
0000

Department of Curriculum and Instruction

Phone: (512) 594-

Keith McBurnett
Hickok
Chief Academic Officer

Kathy Guerra
Accountability Director

February 9, 2009

Dear Mr. Rotich,

We would like to thank you for your interest in conducting your research project in collaboration with the Pflugerville Independent School District (PISD). Educational research is a critical component for on-going improvement in the Texas Public School System. We are extremely pleased and honored whenever PISD is considered as a potential research site.

Our PISD Administrative Procedure (I-AA) outlines the process and requirements for approving or rejecting research proposals. The Department of Curriculum and Instruction is charged with the responsibility of the first screening. Upon review by our department, we involve other departments to participate in the process. **We are pleased to inform you that your research proposal has been approved by the Department of Curriculum and Instruction pending one change.** In order to conduct your research, you must provide all equipment needed if the school does not have the equipment. Schools will not be required to purchase items to participate in the project.

Approval allows you to contact specific campuses and obtain principal approval. **The campus principal has the right to approve or disapprove your request.** If you would like more information, please contact at 512-594-0153.

Thank you,

Kathy Guerra Hickok
Accountability Director

Appendix B:

Principals Approval:

Dr. Harrison,

I did receive information from the district that Willy Rotich's research proposal was approved. Attached is the letter.

The PE Department at DMS would be honored to take part in this research project.

Please let me know what the next step is as I like to keep my teachers completely informed.

Thanks.

Diana Sustaita
Dessau Middle School Principal
594-2600
diana.sustaita@pflugervilleisd.net

Dr. Harrison,

First of all, Mayah is doing fine in class. We are doing our best to keep them all active given our limited options during bad weather. We are starting to work in the weight room a bit - just some light weight stuff.

It is fine with us for you to do your research in our classes. As soon as you have approval from the district office, I would just need to run it by my principal also. Keep me posted.

Thanks.

Eleanor Bilotta
Girl's Athletic Coordinator
Physical Education Coordinator
Dessau Middle School
(512)594-2652

>>> <lharrison@mail.utexas.edu> 1/15/2009 2:15 PM >>>

Hello Coach Bilotta

My name is Louis and I am the father of one of your students, Mayah Harrison. I am on the faculty in the department of Curriculum and Instruction at UT. I write to inquire about the possibility of conducting some research in your classes. I know I have to go through

the PISD central office, but I am inquiring as to whether you would be willing to allow myself and my graduate student into your classes if the necessary approval is acquired.

I will be happy to provide further details and answer any questions you might have. Please give me a call at 512-670-3712 (home) or 512-419-8272 (cellphone) whenever it is convenient, or give me a time and a phone number and I will be happy to call you.

Thanks for considering this request and I will eagerly await your response.

PS: I hope Mayah is not causing any problems for you. If so, please let me know.

Thanks for keeping her physically active.

Louis Harrison Jr.
Associate Professor
Department of Curriculum & Instruction
The University of Texas at Austin
Phone 512-232-4785
Email lharrison@mail.utexas.edu

Appendix C

Recall Questions

Cricket Recall Questions

Name: Grade:

Gender:..... Race/Ethnicity:

a. Demographic Information

1. Gender

[a.] Male [b.] Female

2. Your grade

[A] 5 [b] 6 [c] 7 [d] 8

3. Ethnic background/ Racial background

[a] Asian/Asian American

[b] Hispanic/ Latino

[c] White/ Caucasian

[d] Black/African American

[e] Other _____

4. What is your experience with Cricket?

[a] I have never heard of the game of cricket before

[b] I have seen it played on television but never played myself

[c] I have played cricket with friends

[d] I have seen my friends playing but never played it myself

Cricket

6. The game of cricket is played by two teams. Each team has ____ players.

[a] 6 [b] 9 [c] 11 [d] 13 [e] 13

7. Cricket is played on a (n) _____ field.
[a] Oval **[b]** Rectangular **[c]** Square **[d]** Triangular **[e]** Hexagonal
8. The wickets on a cricket field are _____ yards apart.
[a] 10 **[b]** 15 **[c]** 18 **[d]** 20 **[e]** 22
9. When bowling, the ball must be delivered with a _____
[a] Underhand motion **[b]** Sidearm motion **[c]** Stiff over arm motion **[d]** Cross body motion
10. The wicket keeper stands _____ the wicket.
[a] In front **[b]** behind **[c]** To the left of **[d]** to the right of **[e]** on top of
11. Which one of the following is **NOT** the objective of the fielder?
[a] Knock the bail off the wicket **[b]** Prevent ball from going out **[c]** Catch the ball before it lands **[d]** Defend the wicket
12. A run is scored every time the batsman and his partner run between the wickets before a fielder can?
[a] Catch the ball **[b]** Knock the bail off the wicket with the ball **[c]** Run to the opposite wicket **[d]** Throw to the ball to the batsman
13. The striker is the batsman who is _____
[a] At the wicket nearest the bowler **[b]** who knocks off the bail with the ball **[c]** The next person to go out the field **[d]** Scores the most runs
14. Runs are scored by crossing the opposite _____ before the ball is returned and the bail is knocked off the wicket.
[a] Wicket **[b]** Boundary line **[c]** Fielder **[d]** popping crease
15. _____ runs are scored by hitting the ball so that it **rolls** out of bounds. **[a]** 6
[b] 5 **[c]** 4 **[d]** 3 **[e]** 2
16. _____ runs are scored by hitting the ball so that it **flies** out of bounds without touching the ground.
[a] 6 **[b]** 5 **[c]** 4 **[d]** 3 **[e]** 1
17. The batsman's job according to the video you just observed is to?
[a] Hit the ball **[b]** Protect the wicket **[c]** Score runs **[d]** all of the above
18. When bowling, the ball should be gripped with?
[a] All fingers **[b]** The first finger and thumb **[c]** The first, second finger and the thumb **[d]** The second finger, third finger and the thumb **[e]** The knuckles

19. If the wicket keeper with the ball knocks the bail off the wicket when the batsman is outside the popping crease, the batter will be _____

[a] Out [b] Score a run [c] Be allowed to continue to the opposite wicket [d] Become a fielder

20. If the ball is hit and it is caught by a fielder before hitting the ground, the batsman will _____

[a] Be out [b] Score a run [c] be allowed to continue to the opposite wicket [d] become a fielder

21. Which of these statements is **NOT** true about batting?

[a] You can bat the ball and score even without having to run
[b] **You** can bat the ball and not run if it did not go far enough
[c] One batsman can run and the other remains in his popping crease
[d] A bats man can hit the ball even if it didn't bounce

22. A batsman who is getting ready to hit the ball employs a motion called _____

[a] Batting [b] Back lift [c] Lead up [d] Bowling

23. For a batsman who is looking into the field of play while preparing to bat, which one of the following are the things he can do?

[a] Attack [b] Defend the wicket [c] Hit the ball into the field and run if it is safe to do so [d] Hit the ball over the boundary and score runs [e] All of the above

24. A wicket keeper is a member of the _____

[a] Fielding team [b] Both teams [c] Batting team [d] None of the teams

25. Which one of the following is **NOT** true about the action of bowling?

[a] In the final stride, the shoulder opposite the delivery arm does not lead towards the wicket
[b] The delivery arm and the foot on the delivery arm side are brought forward together to release the ball
[c] The wrist is loosened to release the ball
[d] A lead up run is made to gain power and speed
[e] All of the above

List all the different characteristics that you have in common with the model you observed.

Interview Questions:

In order to assess what participants are attending to when they observe the modeling video, this questions will be posed to select participants:

1. What did you notice about the demonstrator's posture?
2. What did you notice about the demonstrator's throw?
3. What interested you most about his performance that you will use?
4. What else was interesting to you from observing the demonstrator?
5. Did the demonstrator help your own throw?

Very bad					Very Good
[1]	[2]	[3]	[4]	[5]	

2. How well will you do in batting this time?

Not at all well					Very
well					

[1]	[2]	[3]	[4]
[5]			

3. Compared to other students, how well do you expect to be in batting this time?

One of the worst					One of
the best					

[1]	[2]	[3]	[4]
[5]			

4. How well do you think you will be in batting next time you try?

Not at all well					Very
Well					

[1]	[2]	[3]	[4]
[5]			

c. Importance/ Value

1. For me, being good at batting is:

Not very important					Very
Important					

References

- Abernethy, B. (1993) Attention. In Singer R, N., Murphey, M. & Tennant, L. K. (Eds.), *Handbook of Research on Sport Psychology*, (p. 127-170) New York: Macmillan.
- Adams, J. A. (1990). The changing face of motor learning. *Human Movement Science* 9, 209-220.
- Ambady, N., Shih, M., Kim, A., & Pittinsky, T. L. (2001). Stereotype susceptibility children: Effects of identity activation on quantitative performance. *Psychological Science*, 12 (5)383 – 390.
- Andersen, K. J., & Cavallaro, D. (2002). Parents or pop culture? Children's heroes and role models. *Childhood Education*, 78 (3), 161-168.
- Apple, M. W. (1999). The absent presence of race in educational reform. *Race, Ethnicity and Education*, 2, 9-16.
- Australian Cricket Board. (2000). *Coaching youth cricket*. Champaign, IL: Human Kinetics.
- Azzarito, L., & Harrison, L, Jr. (2008). "White men can't jump": Race, gender and natural athleticism. *International Review for Sociology of Sport*, 43 (4), 347-364.
- Bandura, A. (1969). *Principles of behavioral modification*. New York. Holt, Reinhart & Winson.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 2, 191-215.
- Bandura, A. (1986). *Social foundations of thought and action: a social cognitive theory*. New Jersey: Prentice-Hall.
- Bandura, A. (1997). *Self-efficacy: the exercise of control*. New York: W. H. Freeman.
- Bandura, A., Jeffery, R., & Bachicha, D. L. (1974). Analysis of memory codes and cumulative rehearsal in observational learning, *Journal of Research in Personality*, 7, 295-305.
- Bandura, A., & Mischel, W. (1965). Modification of self-imposed delay of reward through exposure to live and symbolic models, *Journal of Personality and Social Psychology*, 2, 698-705.

- Bandura, A., & Walters, R. H. (1963). *Social learning and personality development*. New York: Holt, Rinert & Winston.
- Baer, D. M., Peterson, R. F., & Sherman, J. A.(1971).The development of imitation reinforcing behavioral similarity to a model. In Bandura, A. (ed.), *Psychological modeling: Conflicting theories (89-111)* Broadway, NY.:Lieber-Arhernton.
- Bargh, J. A., Chen, M., & Burrows, L. (1996). Automaticity of social behavior: Direc effects of trait construct and stereotype activation on action. *Journal of Personality and Social Psychology*, 71(2) 230-244.
- Barnett, D., & Bernard, M. (1993). Role models: an athlete's perspective. In W.D. Kirk & S. V. Kirk (Eds.), *Student Athletes: shattering the myths and sharing realities* (pp. 35-41). Alexandria, VA: American Counseling Association.
- Biernat, M., Vescio, T. K., & Green, M. L. (1996). Selective self-stereotyping. *Journal of Personality and Social Psychology*, 71, 1194 – 1209.
- Borgeaud, P., & Abernethy, B. (1987). Skilled perception in volleyball defense. *Journal of Sports Psychology*, 9, 400-406.
- Brown, C. M., Gibbons, J. L., & Smirles, K. E. (2007). Tribal teachers are important to American Indian adolescents' tribal identity. *American Indian Culture and Research Journal* 31(2) 103-111.
- Brown Jr. I, & Inouye, D. K (1978) Learned helplessness through modeling: The role of perceived similarity in competence. *Journal of Personality and Social Psychology*, 36 (8), 900-908.
- Byrne, D., Griffitt & Stefaniak, D.(1967). Attraction and similarity of personality characteristic. *Journal of Personality Psychology*, 5 (1) 83
- Carrington, B., & McDonald, I. (2001). *Race, sport and British society*. London: Routledge.
- Cialdini, R.(1984) *Influence: the new psychology of modern persuasion*. New York, NY: Quill.
- Clark, D. L. (1957). *Rhetoric in Greco-Roman education*. New York, NY: Columbia University Press.
- Clark, K. (1955). *Prejudice and your child*. New Hampshire, NH: University Press of New England.

- Clark, M. S., & Mills, J.(1993). The difference between communal and exchange relationships: What it is and what is not. *Personality and Social Psychology Bulletin*, 19, 684-691.
- De Maeght, S. & Prinz, W. (2004). Action induction through observation. *Psychological Research* 68, 97-114.
- DeMarrais, K. B. (2004). Qualitative interview studies: learning through experience. In K. B. DeMarrais & S. D. Lapan (eds.), *Foundations for research: methods of inquiry in education and Social sciences* (51-68) [electronic resource]. Mahwah, N. J.: Lawrence Erlbaum Associates.
- Devine, P. G. (1989). Stereotypes and prejudice: their automatic and controlled components. *Journal of Personality and Social Psychology*, 56,(1), 5 -18.
- Dion, K., Bersheid, E., & Walster, E. (1972). What is beautiful is good. *Journal of Personality and Social Psychology*, 24(3), 285-290.
- Duda, J. L., & Allison, M, T. (1990). Cross cultural analysis in exercise and sports psychology: a void in the field. *Journal of Sport & Exercise Psychology*, 12, 114-131.
- Eccles, J. S., Adler, T. F., Futterman, R., Goff, S. B., Kaczala, C. M., Meece, J., & Midgley, C.(1983). Expectancies, values and academic behaviors. In J.T, Spence (Ed.). *Achievement and achievement motives* (pp75-146). San Francisco: W. H. Freeman.
- Eccles, J. S., Wigfield, A., Harold, R. D., & Blumenfeld, P. C.(1993). Age and gender differences in children's self-and task perceptions during elementary school. *Child Development*, 64, 830-847.
- Eccles, J. S., Wigfield, A. (1995). In the mind of the actor: the structure of adolescents' achievement task values and expectancy-related beliefs. *Personality and Social Psychology Bulletin*, 21, 215-225.
- Feltz, D. L. (1982). The effects of age and number of demonstrations on modeling of form and performance. *Research Quarterly for Exercise and Sport*, 53,(4), 291-296.
- Feltz, D. L., & Brown, W. E. (1984). Perceived competence in soccer skills among young soccer players. *Journal of Sports Psychology*, 6, 385 -394.

- Feltz, D. L., Landers, D. M., & Raeder, U. (1979). Enhancing self-efficacy in high- avoidance motor tasks: A comparison of modeling techniques. *Journal of Sport Psychology, 1*, 112-122.
- Flanders, J. P. (1968). A review of the research on imitative behavior. *Psychological Bulletin, 69*, 316-337.
- Fischman, G. M., Christina, R. W., & Vercruyssen. M. J. (1982). Retention and transfer of motor skills: a review for the practitioner. *Quest, 33* (2), 181-194.
- Fitts, P. M., & Posner, M. I. (1967). *Learning and skilled performance in human performance*. Belmont, CA: Brock-Cole.
- Friendman, J., Carlsmith, J. M., & Sears, D. O. (1974). *Social Psychology*. New Jersey: Prentice-Hall Inc.
- Futrell, M., Gomez, J. & Bedden, D. (2003). Teaching the children of a new America: The challenge of diversity. *Phi Delta Kappan, 84*, 381-385.
- Gayton, W. F. & Nickless, C. J. (1987). An investigation of the validity of the trait and state sport-confidence inventories in predicting marathon performance. *Perceptual and Motor Skills, 65*, 481-482.
- Gerst, M. D.(1971). Symbolic coding processes in observational learning. In Bandura, A. (ed.), *Psychological modeling: Conflicting theories (89-111)* New York: Lieber-Arhernton.
- Griffin, N.S., Keogh, J. F., & Maybee, R. (1984). Performer perceptions of movement confidence. *Journal of Sport Psychology, 6*, 395-407.
- Giardina, M.D. (2005). *Sporting pedagogies: performing culture and identity in the global arena*. New York, NY: Peter Lang.
- Gibson, D. E., & Cordova, D.I. (1999). Women's and men's role models: the importance of exemplars. In Murrell, A. J., Crosby, F. J. & Ely, R. J. (Eds.), *Mentoring dilemmas: Developmental relationships within multicultural organization* (pp. 121-141). Mahwah, NJ: Lawrence Erlbaum Associates.
- Glover, E. D. (1978). Modeling- a powerful change agent. *Journal of School*

Health, 48, 175- 176.

Gould, R. D., & Roberts, C. G. (1981). Modeling and motor skill acquisition. *Quest*, 33 (2), 214-230.

Gould, D., & Weiss, M. (1981). The effects of model similarity and model talk on self efficacy and muscular endurance. *Journal of Sports Psychology*, 17-29.

Greeson, L.E. (1986). Modeling and mental imagery use by multiply handicapped and learning disabled preschool children. *Psychology in the Schools*, 23, 82- 87.

Hamilton, D. L., & Trolier, T. K. (1986). Stereotypes and stereotyping: an overview of cognitive approach. In J. F. Davidio & S. Gaertner (Eds.), *Prejudice, discrimination and racism* (pp. 127 -163). New York: Academic Press.

Harrison, L. Jr. (2001). Understanding the influence of stereotypes: implications for the African American in sport and physical activity. *Quest*, 53, 97- 114.

Harrison, L. Jr. (1999). Racial attitudes in sport: A survey of race-sport competence beliefs. *Shades of Diversity: Issues and Strategies*, A Monograph Series, 2. American Alliance for Health Physical Education, Recreation and Dance.

Harrison, L. Jr., Azzarito, L., & Burden, J. Jr. (2004). Perceptions of athletic superiority: A view from the other side. *Race, Ethnicity, & Education*, 7, 149-166.

Harrison, L., Harrison, K. & Moore, L.(2002). African American racial identity and sport. *Sport, Education and Society*, 7 (2), 121-133.

Harrison, L. Jr., Lee, A. & Belcher, D. (1999). Race and gender differences in sport participation as a function of self-schema. *Journal of Sport and Social Issues*, 23, 287-307.

Harter, S. (1978). Effectance motivation reconsidered: toward a developmental model. *Human Development*, 21, 34 -64.

Harvey, D. (1996). *Justice, nature and the geography of difference*. Oxford: Blackwell.

- Hayes, S., & Sugden, J. (1999). Winning through “naturally” still? An analysis of the perceptions held by physical education teachers towards the performance of black pupils in school sport and in the classroom. *Race, Ethnicity & Education, 2* (1) 93-107.
- Hernstein, R. J., & Murray, C. (1994). *The bell curve: intelligence and class structure in American life*. New York, NY: The free press.
- Holt, N. L., & Dunn, J. G. H. (2004). Toward a grounded theory of psychosocial competencies and environmental conditions associated with soccer success. *Journal of Applied Sport Psychology, 16*, 199- 219.
- Hornstein, H. A., Fisch, E., & Holmes, M. (1968). Influence of a model’s feeling about his behavior and his relevance as a comparison other on observers helping behavior. *Journal of Personality and Social Psychology, 10*, 222-226.
- Huang, C. (2000). The effects of cooperative learning and model demonstration strategies on motor skill performance during video instruction. *Proc. National Science Council. ROC(C), 10* (2), 255- 268.
- Huberman, A. M., & Miles, M. B. (1983). Drawing valid meaning from qualitative data: Some techniques of data reduction and display. *Quality and Quantity, 17*(17), 281-339.
- International Cricket Council. (Producer). (2003). The official ICC cricket World Cup South Africa 2003 Review [DVD] Britain: FreemantleMedia.
- Ingall, C.K. (1997). *Metaphors, maps and mirrors: moral education in middle schools*. Greenwich: C.T Ablex Publishing Corporation.
- Jackson, J. (1989). Race, ethnicity, and psychological theory and research. *Journal Gerontology: Psychological Sciences, 44* (1), 1-2.
- Johnson, B., & Christensen, L. (2004). *Educational research: quantitative qualitative, and mixed approaches (2nd edition)*. Boston, MA: Pearson Education Inc.
- Johnson, L. D., Hallinan, J.C., & Westerfield, C. R. (1999). Picturing success: photographs and stereotyping in men’s collegiate basketball. *Journal of Sport Behavior, 22*(1), 45-54.
- Johnson, R. B., & Onwuegbuzie, A. J. (2004) Mixed methods research: a research

paradigm whose time has come. *Educational Researcher*, 33 (7), 14-26.

- Kadzin, A. E. (1974). Covert modeling, model similarity, and reduction of avoidance behavior. *Behavior Therapy*, 5, 325 – 340.
- Khan, K. H. & Cangemi, J. P. (2001). Social learning theory: the role of imitation and modeling in learning socially desirable behavior. *Education*, 100 (1), 41-46.
- Kunce, J. & Anderson, W. (1970). Client-counselor similarity and referral bias. *Journal of Counseling Psychology*, 17 (2), 102-106.
- Ladson-Billings, G. (1994). *The dream keepers*. San Francisco, CA: Jossey-Bass.
- Landers, D. M. (1975). Observational learning of a motor skill: temporal spacing of demonstrations and audience presence. *Journal of Motor Behavior*, 7 (4), 281- 287.
- Landers, D. M. & Landers, D. M. (1973). Teacher versus peer models: effects of model's presence and performance level on motor behavior. *Journal of Motor Behavior*, 5, 129-139.
- Landin, D. (1994). The role of verbal cues in skill learning. *Quest*, 46, 299 -313.
- Landis, J. R. & Koch, G. G. (1977). The measurement of observer agreement for categorical data. *Biometrics*, 33, 159 - 174.
- Lapchik, R. E., & Mathews, K. J. (2009). *Racial and gender report card*. Orlando, FL, University of Central Florida Institute for Ethics and Diversity in Sport.
- Lee, T. D., & White, M. A. (1990). Influence of an unskilled model's practice schedule on observational motor learning. *Human Movement Science*, 9, 349 – 367.
- Lincoln, Y.S., & Guba, E. G. (1985). *Naturalistic inquiry*. Newbury Park, CA: Sage.
- Lirgg, C. D., & Feltz, D, L. (1991). Teacher versus peer model revisited: effects on motor performance and self efficacy. *Research Quarterly for Exercise and Sport*, 62(2) 217-224.
- Lockwood, P., Jordan, C., & Kunda, Z. (2002). Motivation by positive or negative role models: regulatory focus determines who will best inspire.

- Journal of Personality and Social Psychology*, 83, 854-864.
- Magill, R. A. (2004). *Motor learning and control: concepts and applications* (7th ed.). Dubuque, IA: Brown.
- Magill, R. A. (1993). Modeling and verbal feedback influences on skill learning. *International Journal of Sport Psychology*, 24, 358-369.
- Mandelsohn, G. A. & Geller, M. H. (1963). Effects of counselor-similarity on outcome of counseling. *Journal of Counseling Psychology*, 10,(1), 71-77.
- Mandelsohn, G. A. (1968). Effects of client personality and client counselor similarity on duration of counseling: a replication and extension. *Journal of Counseling Psychology*, 13 (2), 228-234.
- Martens, R., Burwitz, L., & Zuckerman, J. (1976). Modeling effects on motor performance. *Research Quarterly*, 47, 277-291.
- Masson, M.E.J. (1990). Cognitive theories of skill acquisition. *Human movement science*, 9, 221-239.7
- Maykut, P., & Morehouse, R. (1994). *Beginning qualitative research: a philosophical guide*. Lewes, UK: Falmer.
- McAuley, E. (1985). Modeling and self-efficacy: a test of Bandura's model. *Journal of Sports Psychology*, 7, 283-295.
- McCauley, E., & Gill, D. (1983). Reliability and validity of physical self-efficacy scale in a competitive sport setting. *Journal of Sport Psychology*, 5, 410-418.
- McCauley, E., & Mihalko, S. L. (1998). Measuring exercise-related self-efficacy. In J. L. Duda (Ed.), *Advances in sport and exercise psychology measurement*. Morgantown: WV Fitness Information Technology.
- McCullagh, P. (1987). Model similarity on motor performance. *Journal of Sports Psychology*, 9 (4) 261-274.
- McCullagh, P. (1986). Model status as a determinant of observational learning and performance. *Journal of Sport Psychology*, 8, 319-331.
- McCullagh, P. (1987). Model similarity effects on motor performance. *Journal of Sports Psychology*, 9, 249-260.

- McCullagh, P., Weiss, M., & Ross, D. (1989) Modeling considerations in motor skill acquisition and performance: An integrated approach. *Exercise and Sport Science Reviews*, 17, 475-511.
- McCullagh, P. & Weiss, M.R. (2002). Observational learning: the forgotten psychological method in sport psychology. In J. L. Van Raalte & B.W. Brewer (Eds.), *Exploring sport and exercise psychology* (p. 131-149). Washington, D. C.:American Psychological Association.
- McMorris, T. (2004). *Acquisition and performance of sports skills*. London, UK: John Wiley & Sons, Ltd.
- Meaney, K. S., Griffin, K. L., & Hart, M, A. (2005). The effect of model similarity on girls' motor performance. *Journal of Teaching in Physical Education*. 24, 165-178.
- Meichenbaum, D. (1977). *Cognitive behavior modification*. New York: Plenum.
- Melville, D. S., & Mandallazo, J.G. F. (1988). The effects of a physical appearance of body fatness on communicating exercise concepts to high school students. *Journal of Teaching Physical Education*, 7, 343-352.
- Meyer, L. S., Gamst, G., & Guarino, A.J. (2006). *Applied multivariate research: design and interpretation*. California: Sage.
- Myers, D. G. (1993). *Social psychology*. New York, NY: McGraw-Hill.
- National Center for Education Statistics. (2006). *Characteristics of schools, districts, teachers, principals, and school libraries in the United States, 2003-04*. NCES 2006-313 revised, Washington, DC: U.S. Government Printing Office.
- Oakes, P. J., Haslam, S. A., & Turner, J. C. (1994). *Stereotyping and social reality*. Cambridge, MA: Blackwell.
- Possell, L. E., Kehle, T.J., Mcloughlin, C.S., & Bray, M.A. (1990). Self-modeling as an intervention to reduce disruptive classroom behavior. *Cognitive and Behavioral Practice*, 6, 99-105.
- Rhoads, K. V. L., Cialdini, R. B.(2002). The business of influence: Principles that lead to success in commercial settings. In J. P. Dillard & M. Pfau, (Eds.), *The persuasion handbook: Developments in theory and practice* (pp. 513-542). Thousand Oaks, CA: Sage Publications.
- Rhoden, W. C. (2006). *Forty Million dollar slaves: the rise, fall and redemption*

of the black athlete. New York: Three Rivers Press.

- Ruble, D. N., Grovosky, E. H., Frey, K. S., & Cohen, R. (1992). Developmental changes in competence in competence assessment. In Boggiano, A. K. & Pittman, T. S. (eds.). *Achievement and motivation, a social-developmental perspective*, (138-164), Cambridge University Press.
- Rudolph, D. L. & McAuley, E. (1996). Self-efficacy and perception of effort: a reciprocal relationship. *Journal of Sport and Exercise Psychology*, 18, 216-223.
- Rosenthal, T. L., & Zimmerman, B. J. (1978). *Social learning and cognition*. New York: Academic Press.
- Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcements. *Psychological Monographs*, 80, (Whole No. 609).
- Ryska, T. A. (2002). The effect of athletic identity and motivation goals on global competence perceptions of student-athletes. *Child Study Journal*, 32 (2), 109 -129.
- Schmidt, R. A., Zuckerman, J., Martin, H.A., & Wolfe, K. F. (1971). A novel discrete gross motor learning task: Modifications of the Bachman ladder. *Research Quarterly*, 42, 78-82.
- Schunk, D. H. (1987). Peer models and children's behavioral change. *Review of Educational Research*, 57 (2) 149-179.
- Scraba, P.J. (1989) Self-modeling for teaching swimming to persons with physical disabilities (Doctoral Dissertation, University of Connecticut, 1989). *Dissertation Abstracts International*, 50, 2830.
- Scully, D. M., & Newell, K. M. (1985). Observational learning and the acquisition of motor skills: towards a visual perception perspective. *Journal of Human Movement*, 11, 169-186.
- Sheffield, F. D. (1961). Theoretical considerations in the learning of a complex sequential tasks from a demonstration and practice. In A.A. Lumsdaine, (Ed.), *Student Response in Programmed Instruction* (pp. 13-32). Washington D. C: National Academy of Sciences- National Research Council.
- Shih, M., Pittinsky, T. L., & Nalini, A. (1999). Stereotype susceptibility: Identity salience and shifts in qualitative performance. *Psychological Science*, 10 (1) 80- 83.

- Sizemore, R. W. (1981). Do black and white students look for the same characteristics in teachers? *Journal of Negro Education*, 30 (1), 48-53.
- Spencer, A. (1998). Physical educator: role model or roll the ball out? *Journal of Physical Education, Recreation and Dance*, 69 (6), 58-63.
- Steele, C. M., & Aronson, J. (1995). Stereotype threat and the intellectual test performance of African-Americans. *Journal of Personality and Social Psychology*, 69, 797-811.
- Stone, J., Sjomeling, M., Lynch, I. C., & Darley, M. J. (1999). Stereotype threat effects on white and athletic performance. *Journal of Personality and Social Psychology*, 7 (6) 1213-1227.
- Strauss, A., & Corbin, J. (1998). *Basics of qualitative research: techniques and procedures for developing grounded theory* (2nd ed.). California: Sage.
- Weinberg, R., Gould, D., & Jackson, A. (1979). Expectations and performance: an empirical test of Bandura's self efficacy theory. *Journal of Sport Psychology*, 1, 320-331.
- Weiner, B. (1974). (Ed.). *Achievement motivation and attribution theory*. New Jersey: General Learning Press.
- Weiss, M. R., & Klint, K. A. (1987). "Show and tell" in the gymnasium: an investigation of developmental differences in modeling and verbal rehearsal of motor skills. *Research Quarterly for Exercise and Sport*, 58, (2), 234-241.
- Weiss, M. R., Ebbeck, V. & Rose, D. J. (1992). "Show and Tell" in the gymnasium revisited: Developmental differences in modeling and verbal rehearsal effects on motor skill learning and performance. *Research Quarterly for Exercise and Sport*, 63(3), 292-301.
- Wiggins, D. K. (1989). "Great speed but little stamina:" the historical debate over athletic superiority, *Journal of Sport History*, 16(2) 158 – 190.
- William, L., & Gill, D. L. (1995). The role of perceived competence in the motivation of physical activity, *Journal of Exercise and Sports Psychology*, 17, 363-378.
- Wineburg, S. (1987). The self- fulfillment of the self-fulfilling prophesy. *Educational Researcher*, 16 (9), 28-36.

- Wrisberg, C. A. (1993). Levels of performance. In R. N. Singer, M. Murphey, & L.K. Tennant (Eds.). *Handbook of research on sports psychology* (pp. 61-72). New York: Macmillan.
- Xiang, P., McBride, R., Guan, J., & Solmon, M. (2003). Children's motivation in elementary physical education: An expectancy-value model of achievement choice. *Research Quarterly for Exercise and Sport*, 74, 25-35.
- Yancey, A. K. (1998). Building positive self image in adolescence in foster care: the use of role models in an interactive group approach. *Adolescence*, 33(130), 253-26.
- Yancey, A. K., Siegel, J. M., & McDaniel, K. L. (2002). Role models, ethnic identity, and health-risk behaviors in urban adolescents. *Archives of Pediatric Adolescent Medicine*, 156, 55-61.