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**AN INTERNATIONAL PEER-REVIEWED  
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## Editor's Perspective



Local community public schools are intricate social systems that reflect the complexity of human beings, their cultures, their primary spoken languages as well as the quality of health care, safety, employment and social support within the community. In a recent speech at the Council of

the Great City Schools annual convention in Cleveland, Bill Gates announced that the foundation will shift its focus from teacher evaluation models to supporting local school driven solutions within networks of districts, teachers and schools. Investments will go to the support of promising results from public schools, charter schools serving special need students, and research and development (Education Dive 10-23-2017).

Some of the greatest success that the Bill and Melinda Gates Foundation experienced has been in open source medical research and practical distributions of medicines broadly shared by their foundation. It seems that Bill and Melinda Gates are adopting the more effective approach to improving learning among students that their foundation used to improve health care in Africa. Any departure from the simplistic test and punish or the transfer of local tax money to privateers running for profit and self-enriching charter schools will be a welcome relief to public educators.

Our public schools across the nation are filled with highly creative and dedicated teachers and school leaders doing magnificent work with diverse children. Their schools need to be celebrated, studied and used as laboratories for other school leaders to emulate. If the Bill and Melinda Gates Foundation uses its expertise to connect networks of successful schools and to disseminate effective practices in an open source environment, many more school personnel may discover pathways to successful student learning as long as multiple measurements of learning are valued. Student performance has to be cherished above test scores if students are to enjoy learning. When children create stories, draw, compose songs, investigate how nature

operates, use math to describe and explain events and design their own technological solutions to questions they pose, schools become learning communities and escape the confines of test centers.

In this issue of the Journal for Leadership and Instruction, you will find the initial research of a Pakistani educator, Dr. Khazima Tahir, who sought to understand how professorial views of diversity experiences in the college context might relate to critical thinking skills. Also, research related to the development of moral identity among young people and its implications for schools is presented by Captain Joseph Imbriaco of New York City.

During a time when science, technology, engineering, arts and mathematics instruction are receiving renewed emphasis, Dr. Paula Beck with support from her mentors at Long Island University-Post, New York, explains how works of art can be used to give a voice in schools to students of culturally diverse backgrounds. We include in this issue a book review by Dr. James Brucia that provides an analysis of Lissa Masters' book promoting a program of art instruction to facilitate learning among all students. In a similar vein, researchers from Lynn University in Boca Raton, Florida present their review of mindfulness research and its potential impact on math and science anxiety among students and faculty in schools.

Lastly, in our "From the Field" section, where we present practical applications of research, we offer Professor of Education at Concordia College, New York, Dr. Barry McNamara's guidance to reduce bullying of students with disabilities in schools.

It is the hope of our peer reviewers, our editors and our editorial board that the research we present in the Journal for Leadership and Instruction may help our readers in their efforts to enable more children to learn and to love school.

*Robert J. Manley*

Editor-in-Chief

# Professorial Views of the Use of Diversity Experiences to Develop Students' Critical Thinking Skills in the Pakistani College Context

By Khazima Tahir, Ed. D.

## Abstract

This study explored the interplay of diversity experiences and critical thinking of Pakistani college students and determined how the classroom experience supported and exposed students to diversity and critical thinking. The researcher conducted teachers' interviews to gather data in a college in Pakistan. Teachers were asked to respond to a series of questions about the influence of diversity experiences on student critical thinking, and some potential challenges teachers face in promoting diversity experiences and subsequent critical thinking skills of Pakistani students. Findings of this study indicated that Pakistani professors felt diversity experiences influenced student dispositions to think critically. Also, the teachers indicated potential challenges in promoting diversity experiences such as a lack of structural diversity in the college and non-alignment of prescribed curriculum with diversity experiences. The implications for the use of diversity experiences to promote critical thinking skills of the college students are considered.

## Introduction

There is a plethora of research available on effects of diversity experiences on the range of student educational outcomes such as critical thinking skills, student deep learning, and effective teaching (Chang, 1999; Hurado, 2001; Pascarella & Terenzini, 2005; Gurin, Dey, Hurtado, & Gurin, 2002; Tahir, 2015). Colleges and universities advertise critical thinking as a particularly salient student educational outcome (Loes, et al., 2012). According to Loes (2009), the development of critical thinking is especially important because students in the 21<sup>st</sup> century are expected to change careers numerous times after graduating and they will be required to be problem solvers who are able to quickly adapt to a new situation.

Gurin et al. (2002) highlight that exposure to diversity experiences would develop student complex forms of thought as they encounter new or novel situations that challenge current and comfortable modes of thinking. The researchers point out that these experiences could be given in classroom settings, and can also occur in other contexts when students confront others who are different. These confrontations would challenge students to think or act in new ways. These scholars also suggest that without experiences

with diversity, students run the risk of making commitments to ideas, groups, or careers without exploring options. Thus, diversity experiences help college challenge students to develop a meaningful philosophy of life and shape their identities from an expanded set of choices that encourage them to make more deliberate commitments to their identities in a view of their role in the society (Astin, 1993; Laird, 2005).

Loes (2009) documents that given the effects of significant and persistent racial segregation, the U.S. colleges and universities provide a unique opportunity for students to interact with diverse people and ideas. However, the body of research that focuses on the potential influence of diversity experiences on the development of the capacity to think critically is small (Loes, Pascarella, & Umbach, 2012). In addition, the research conducted on diversity experiences is Eurocentric. There is a lack of serious research on diversity experiences of students to promote critical thinking skills in Pakistan. This current study takes a step in this direction given Hoodbhoy's observation that Pakistan's education system discourages questioning and stresses obedience.

Pakistan's educational system, shaped by deeply conservative social and cultural values, discourages questioning and stresses obedience. Progress demands that ultimately the dead hand of tradition be cast aside... in seeking change of values, it will be important.... Critical thought allows individuals to make a revolutionary difference and to invent the future. Else, they will merely repeat the dysfunction of the past (Hoodbhoy, 2009:592).

Student exposure to diversity experiences develops their critical thinking skills and offers greater significance in the conventional context of Pakistan.

The purpose of this study is to examine the interplay of diversity experiences and critical thinking in Pakistani college students, and how these diversity experiences affect the development of critical thinking in Pakistani college students. Finally, this study will suggest the implications for organizations, and provide recommendations that key stakeholders can use to improve diversity experiences for college students.

## **LITERATURE REVIEW**

### **Thinking**

Critical thinking is comprised of a set of skills that include the ability to identify issues and assumptions, recognize important relationships, make correct inferences, evaluate evidence or authority, and deduce conclusions (Furedy & Furedy, 1985). The development of students' critical thinking has been considered as a major pedagogical goal among college and university faculty (McCrae, 2011). A national survey of employers and policy makers revealed a consensus that the disposition as well as the ability to think critically should be a fundamental outcome of higher education (Jones et al., 1995). Critical thinking focuses on a set of skills and attitudes that enable a listener or reader to apply rational criteria to the reasoning of a speaker and writer. Providing learners with frequent opportunities for the practice of evaluation of skills and the examination of attitudes allows them to experiment with critical thought (Brown & Freeman, 2000). Similarly, acknowledgement and comfort with genuine differences in perspectives are elements of critical thinking (Solvang, 2004).

Students will be more likely to engage in effortful and complex modes of thought when they engage new and novel situations that challenge their current and comfortable mode of thinking. According to Pascarella et al. (2014) this often can happen in classroom settings but can also occur in other contexts when students encounter others who are unfamiliar to them, when these encounters challenge students to think and act in new ways, when people and relationships change and produce unpredictability, and when students encounter others who hold different expectations, viewpoints and experiences than they hold.

### **Diversity**

Diversity refers to dissimilarities in traits, qualities, characteristics, beliefs, values, and mannerisms present in self and others. It is displayed through predetermined factors such as race, ethnicity, gender, age, ability, national origin and sexual orientation. It is also displayed through changeable features such as citizenship, worldviews, language, schooling, religious beliefs, marital, parental, socioeconomic status, and work experiences (Sheets, 2009). Diversity enriches the nation because it provides alternative ways to view the world and solve societal problems (Banks, 2006). Also, diversity enlarges the pool of cultural resources, while at the same time engendering misunderstandings and resentment (Sleeter & Grant, 2009). To effectively work with diversity, differences must be viewed as assets to explore, understand, and incorporate into all aspects of the workplace (Guerra, 2012).

According to Sheets (2009), students should be encouraged to become aware of diversity. They should also examine their prejudices, so that they can

accept differences in themselves and others. Sheets finds that there is the natural connectedness of culture and cognition as factors of diversity in a teaching learning process. Drawing on research that speaks to the social aspects of cognitive development, scholars point out that students will be more likely to engage in effortful and complex modes of thoughts when they encounter new and novel situations that challenge current and comfort modes of thinking (Pascarella & Umbach, 2012).

Research documents that diversity experiences are associated with gains in critical thinking (e.g., Chang, 1999; Hurtado, 2001). Hurtado (2001) gathered data from over 4,200 students in 309 four-year institutions. Students who studied with someone from a different racial/ethnic background, enrolled in an ethnic studies course, or enrolled in a women's studies course all exhibited gains in critical thinking. According to Chang, cultural diversity is inevitable in the US educational systems. It will be far more enlightening if the policy agenda that is spreading internationally accommodates diversity in educational values and practices (Chang, 1999). Because invisible aspects of culture are often misunderstood and can result in deficit thinking, it is critical to highlight and understand their influence for inequitable practices, policies, and procedures to be revealed, addressed and transformed (Guerra, 2012).

### **Diversity Experiences**

The notion of diversity experiences can be interpreted in many ways. The main focus of this research paper is on the diversity experiences for college students. Pascarella (2006) argued that researchers need to investigate the increasing diversity of the American higher education population by exploring interaction effects of diversity experiences and critical thinking. Pascarella stated that recent demographic changes in student populations may not have the same impact for all students.

Gurin (1999) provided a useful framework for understanding concepts related to diversity experiences. She described diversity experiences as a manifestation of structural, classroom, and informal interactional diversity. Structural diversity is essentially the composition of racial/ethnic minorities on campus and does not consider interactions among groups; rather, it simply reflects the numbers of racial and ethnic minorities. Classroom diversity is an incorporation of information about diverse groups into the curriculum and reflects the extent to which students reported that they had been exposed to diversity issues in their classes. Informal interactional diversity refers to opportunities for students with diverse backgrounds to interact with one another in a variety of settings on campus. Using Cooperative Institutional Research Program data, he found that diversity experiences have positive effects on self-reported increases in knowledge and skill. On the other hand, Hurtado et al. (1998) argued that structural diversity is the most important of the three dimensions of diversity experiences.

## **METHODOLOGY**

This study explored the use of diversity experiences to promote critical thinking skills of the college students and uncovered the potential challenges in promoting diversity experiences in Pakistani college classrooms. The researcher selected a college which has been operating since 1952 in the Pakistan public sector. Five professors were interviewed. Permission was requested from each professor to participate in the research process and anonymity was guaranteed. Each interview lasted approximately forty-five minutes and was audio recorded and later transcribed verbatim. Subjects were also guaranteed confidentiality regarding the tape recording of their comments during the interview.

The internal validity of a qualitative study is the extent to which the design and data gathered allow the researcher to draw conclusions about relationships within the data (Leedy & Ormrod, 2010). Interview questions in this study were designed to obtain rich, thick, and descriptive qualitative data regarding the research topic so that clear connections between the questions and responses could be drawn. A trained qualitative researcher reviewed the research notes and affirmed the patterns and discrepancies within the commentary that had been identified. Data analysis was conducted by coding using categories based on the research questions as the guiding framework to identify patterns, and by the clustering of codes to discover emerging themes.

### **Research Question**

The study was guided by the following research question:

*How do college teachers describe the influence of diversity experiences on the development of critical thinking skills of students, and what are the potential challenges in promoting diversity experiences in Pakistani college classrooms?*

## **FINDINGS**

### **Diversity Experiences and Critical Thinking**

Overall, professors reported students' exposure to diversity experiences in the classroom directly affect their critical thinking skills, ability to learn, and their overall academic performance. There was a pattern in their responses when the teachers elaborated that these diversity experiences contributed to their student self-growth and helped them make informed choices in their future.

According to a teacher:

college year is a suitable time to develop students' thinking skills. When young people enter college, they have a unique life opportunity to explore diverse ideas, world views, and different persons. (Interview transcript, T1)

Teachers responded that through engagement with diversity students learn about perspectives, experiences, and ways of living differently than their own and those they have previously encountered. They pointed out that this engagement makes them more knowledgeable. The students learn how to show commitment, develop a mature attitude, and become socially responsible. A teacher elaborated:

I think by involving them in diverse experiences, we, as teachers, enable our students to concentrate and push themselves further when there are people of other backgrounds and how to work with them. This promotes creativity, as well as better education, as those with differing viewpoints can collaborate to create solutions (Interview transcript, T3).

The teachers pointed out that without diversity experiences, students run the risk of growing a fixed mindset. They concluded that without diversity experience, students would never do out of box thinking.

Overall, it was evident that these professors believed in the importance of diversity experiences in developing thinking skills among the college students in Pakistan.

### **Range/Exposure of Diversity Experiences to Pakistani College Students**

Teachers were asked to comment on strategies they utilized for promoting diversity in the classroom. There was a pattern in teacher responses when they discussed that the traditional assessment system left little room for student involvement in diversity experiences. All of them indicated that education in Pakistan mostly encouraged cramming without comprehension, and discouraged constructive critical inquiry and productive reasoning. They further commented that students would be exposed to critical thinking if the current academic context provided them a range of diversity experiences. These professors stated that they attempted to expose their students to diversity experiences to some extent. For instance, most of the teachers responded that they encouraged their students to share different views and perspectives on a topic.

A teacher stated:

When I involve students in a discussion that challenges their previous assumption, they listen to my argument and seek clarification. They argue for their point of view in the class. I let them defend their thoughts with logic and reason. For instance, their intense feelings of hatred for a neighboring country were hard for me to resist. However, I used stories about the Holocaust and the wars in countries to illustrate the senselessness of hatred and intolerance. (Interview transcript, T5)

A teacher pointed out that he manipulated the curriculum topics to give students a diverse exposure. "I ask students to make an expanded set of choices and

encourage them to make more deliberate commitments to their identities in a view of their role in society." When probed how did this impact critical thinking skills? Three teachers responded that they could engage students in meaningful interactions while in college. Teachers reported improvement in active thinking, self-confidence, and academic skills of students. Secondly, they indicated that their institute had a coeducation structure where the presence of male and female students from different backgrounds created a culture of competence, creativity, and compassion and better prepared students to take on real-life challenges. Thirdly, their institute involved students in diversity courses such as "women harassment at workplace."

They believed these experiences helped students develop their critical thinking skills by expanding their worldviews through analytical and problem-solving skills. The teachers explained that the student exposure to diversity experiences increased their awareness of social issues and concern for improving society. All the teachers agreed that by engaging students in diversity workshops they could reduce student gender bias, stereotyping, prejudice, and discrimination.

A teacher reported:

I think these diversity experiences not only develop student critical thinking skills but also improve classroom environments. Students feel that differences and diversity are to be considered for mutual respect and understanding. (Interview transcript, T4)

### Challenges in Promoting Diversity Experiences

All the teachers reported several challenges to promote diversity experiences to develop critical thinking skills of college students in Pakistan. Teachers explained how it was difficult for them to provide a unique opportunity for students to interact with diverse people and ideas. A teacher pointed out that one challenge to promote diversity experience and critical thinking occurred due to the prevalent culture.

Because of the cultural stereotypes, students don't find it comfortable to argue with their teachers in the classroom. The traditional interpretation of teacher-student relation, suggests that teacher is a spiritual father. Parents categorically dictate to their children that a teacher is like their spiritual father, therefore, they are morally obliged to submit their will before teachers, and refrain from any such act which socially amounts to impertinence...As a teacher I try to shake off their belief system but at times it becomes very tough (Interview transcript, T4).

The second factor was a lack of structural diversity in Pakistani educational institutions. A teacher commented:

I think that diversity is promoted when students are placed in a multicultural environment....When there

are racial/ethnic minorities on campus... When there are students from different countries. In the case of Pakistan, there is the homogeneous community. (Interview transcript, T3)

There was a pattern in teachers' responses when they described that the country's apparent religious homogeneity led policy makers to design curricula that gave little room for the growth of diversity and thinking skills among college students.

designing a curriculum that does not promote diversity experiences....and guided by the belief that such design would lead to a national unity. In this context, the role of the teacher becomes very important. He must expose the students to themes of respect and restraint, religious equality and interfaith or inter-sectarian harmony. (Interview transcript, T2).

When asked how did teachers deal with a lack of structural diversity in Pakistani educational institutions, a teacher responded:

The narration of the golden epoch of Islamic history is my favorite one in the classroom. The students love to listen to stories of the Ottoman Empire. This was a time of much balancing of difference, learning from the exchange, an acknowledgment of the good things that can be born of encountering something other than exact copies of ourselves. (Interview transcript, T1).

The teachers explained that they worked to improve the classroom atmosphere and to celebrate and acknowledge all students. They stated that they arranged activities that encouraged students to communicate and collaborate. Overall teachers commented that the bureaucratic hurdles and stresses to complete a prescribed course outline in a given time frame were significant hurdles in promoting diversity experiences that develop critical thinking skills among the students.

### DISCUSSION AND IMPLICATIONS

This study explored how Pakistani professors viewed and approached the interplay between diversity experiences and the development of critical thinking in college students and investigated how the class room experience supported and exposed students to diversity and critical thinking. Teachers were asked to respond to a series of questions about the influence of diversity experiences on student critical thinking skills, the types of diversity experiences and some potential challenges in promoting diversity experiences and critical thinking skills of Pakistani students. Given the evidence from higher education in the US research on critical thinking and diversity (Gurin et al., 2002; Laird, 2005; Pascarella, et al., 2014), diversity experiences seem to influence student dispositions to think critically and this study confirms how diversity experiences in Pakistani college enhances critical thinking skills in this context as well.



Professors' commentary provides solid pieces of evidence for the benefit of diversity experiences. According to Gurin et al. (2002) diversity enables students to perceive differences both within groups and between groups and is the primary reason why significant numbers of students of various groups are needed in the classroom. This study also supports the notion that the attitude and disposition that students bring to diversity experiences may function as a catalyst or barrier to continued development both affective and cognitive (Laird, 2005).

Gurin et al. point out that a diverse student body is clearly a resource and a necessary condition for engagement with diverse peers that permit higher education to achieve its goals. Therefore, higher education practitioners and administrators should endeavor to make diversity a key focus of the curriculum as this emphasis will likely lead to the development of critical thinking in college students well after college graduation.

During the interviews with Pakistani college teachers, the major finding was teachers' frustration with the existing curriculum. According to them the curriculum gives little room for the growth of diversity experience and critical thinking skills of the college students. This finding is aligned with research findings of Pascarella et al. (2012) who indicated the need to work on curriculum for promoting diversity and critical thinking in the classroom.

For instance, Solvang (2004) noted that curriculum that promotes diverse experiences requires both critical thinking skills and the engagement with diversity. He asserted that most first year college students had not yet developed these skills. Solvang explored ways of teaching and applying critical thinking within the context of an introductory religion course. He found that first year college students could learn the content of a discipline and function in a pluralistic world if the curriculum offered them the opportunity to develop critical thinking skills within multiple perspectives.

According to Astin (1993), curricular diversity experiences bring opportunities to confront racial and multicultural issues with widespread benefits to student cognitive and affective development. Astin pointed out issues of race, culture, and ethnicity represent promising curricular subject matter for confronting some of the dilemmas that many contemporary students seem to be avoiding. In Pakistan, curriculum developers should incorporate diverse topics in the syllabi for college students so that curriculum promotes student diversity experiences.

In this study, professors' responses indicate a lack of structural diversity in Pakistani educational institutions. Gurin (1999) provided a useful framework for understanding the interrelationship between diversity experiences and critical thinking and pointed out the significance of structural diversity. In this context, it is also important to note that diversity experiences do not take place in isolation on college campuses and the role that campus racial/ethnic climates play in influencing individual diversity experiences.

Hurtado et al. (1998) concluded that the most important dimension of diversity experiences is structural diversity. They pointed out that an appropriate racial climate and increasing structural diversity on college campuses is the first requirement to enhance the educational value of diversity experiences. This finding is aligned with Gurin et al. (2002) as these scholars also suggest that college and universities should provide a supportive environment in which disequilibrium and experimentation can occur by increasing interaction among diverse peers and help faculty and students manage conflict when individuals share different points of view. The presence of racially diverse peers is also a necessary condition for realizing an educational benefit of college diversity (Bowman, 2010). In this context, policy makers and administrators in Pakistan should consider structural diversity as necessary criterion for improving the campus climate for diversity as a dearth of structural diversity may preclude meaningful diversity experiences on campus.

Colleges and universities should conduct staff development programs so that everybody on campus becomes familiar with research on good practices for building a diverse climate on college campuses. Hurtado et al. (1998) suggested that flexibility in admission practices and financial aid policies can contribute to cultivate such an environment in the US context.

If critical thinking as educational objective is desired (Brown & Freeman, 2000), college administrators and faculty should be more serious and purposeful in building the structure for engagement in diversity experiences. This current study in Pakistan indicates that diversity experiences have important implications for the development of critical thinking in college students. Thus, an institutional policy based on programmatic efforts to weave exposure to diverse individuals, ideas, and perspectives into students' lives may serve to enhance the intellectual mission of a college (Pascarella et al., 2012). Administrators and educators should arrange curricula and structural activities so that college students can experience diversity. They can start by pointing out the importance of student heterogeneity in terms of color, race, gender, ethnicity, and sexual orientation. Similarly, interactional activities such as workshops, seminars, interaction of students of different races can offer students diversity experiences and promote their critical thinking skills.

This study of the Pakistani context revealed that professors' responses indicated that they attempted to provide diversity experiences in the classroom. However, students need more classroom diversity experiences. According to researchers (Astin, 1993; Gurin et al., 2002; Laird, 2005); classroom diversity is an important indicator of development of student critical thinking. Laird (2005) suggested that diversity courses and positive interaction with diverse peers can be a mechanism to develop critical thinking among college students. Also, in many college campuses there is a marked growth in thinking skills of students through exposure to interactional diversity rather than to diversity topics covered in classrooms (Pascarella et al., 2012).



These findings hint at the scale of classroom diversity that should not be too superficial to capture genuine classroom exposure to diversity experiences.

Gurin et al. (2002) suggested that helping faculty develop a pedagogy that makes the most of the diverse perspectives and student backgrounds in their classrooms can foster active thinking, intellectual engagement, and democratic participation. Therefore, it is suggested that Pakistani colleges and many other national colleges should provide a continued development and offering of curricular opportunities for students and teachers to engage in multiple aspects of diversity. The classroom teachers should provide such opportunities to students from different racial and ethnic backgrounds to interact respectfully and productively.

Findings of this research study in the Pakistani context reinforce the argument that engagement in diversity experiences may have important implications for the development of the critical thinking skills of college students. Thus, an institutional policy that encourages student exposure to diverse individuals, ideas, and perspectives may produce better citizens for society. One limitation of this study is that the results obtained may not be generalizable to every classroom. Future research should examine the interplay of diversity experience and critical thinking in a quantitative investigation.

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# ***A Review of Research Supporting the Development of Moral Identity in Youth***

By Joseph J. Imbriaco

## **Introduction**

How can we inspire our youth to consistently do what is right? Lectures and readings on ethics could help, but are unlikely to spur intrinsic motivation. A more comprehensive option is to aid in the development of a character-based moral identity which will stay with them as they grow. The development of a moral identity is desirable because it can create an intrinsic desire to do what is right and to act in accordance with a moral self-image. The studies examined in this paper demonstrate that the process of developing a moral identity can be enhanced through the guidance of ethical role models and participation in ethical activities and organizations.

## **Purpose and Research Questions**

Our social identity is a key aspect of how we see ourselves and others, and it develops over the course of our lives. Young adulthood, or adolescence, is one of the most important points in one's life, as changes in social identity and perspective are most likely to occur as one is just reaching adulthood (Onat Kocabiyik & Kulaksizoglu, 2014, p. 854). This study will examine how one's moral identity can become prominent in decision-making through a literature review utilizing the following research questions:

*RQ 1: "How do adolescents develop moral identity?"*

*RQ 2: "How do role models contribute to the development of a strong moral identity and an intrinsic desire to do the right thing?"*

These questions are examined from the social constructivist viewpoint, which provides a fundamental theory of the development of social identity. The analysis incorporates identity theory, social learning theory, self-perception theory, and the just community approach to character development.

## **The Role of Identity**

Social constructivists emphasize the role of identity in shaping human interests and actions. Alexander Wendt (1992) explained the fundamental concept of social constructivist theory that every person has many identities of varying strength. Each individual identity is a social defi-

nition based upon theories of relation of that individual to others in society (Wendt, 1992). Peter Katzenstein (1996) explained that each collective identity contains values as well as collective expectations for group behavior known as norms. The norms and values which constitute an identity impact behavior by providing internal context for one to choose actions and decide how to interact with others.

## **Defining Moral Identity**

Augusto Blasi (2005) proposed willpower, integrity, and moral desire as the three essential virtues of moral identity. Shao, Aquino, & Freeman (2008) stated a desire for self-consistency was the key link between moral identity and moral action (pp. 515:516). Karl Aquino and Americus Reed proposed a simpler definition of moral identity as "social responsiveness to the needs of others" (2002, p. 1433).

Moral identity can be viewed from two major theoretical perspectives: social cognitive and character-based. The social cognitive perspective asserts that individuals balance multiple identities within a "working self-concept" and that social cues can activate different images of a self-concept (Shao, Aquino, & Freeman, 2008, p. 518). The character perspective proposes an "intransient moral self" which is central to one's self-concept (Shao, Aquino, & Freeman, 2008). This intransient moral self is a powerful force which drives one to act in accordance with a self-image. This stable, character-based self-concept is moral identity.

Shao, Aquino, & Freeman (2008) explained that for some individuals moral identity is their primary self-definition and that for them this commitment is not dependent on situational or social cues. For these individuals, doing the right thing is essential to maintaining their moral image of the self. Such individuals identify themselves in other ways too. For them, acting ethically is more important than their sense of belonging to any other form of identity. For those whose moral identity is not as strong, the competition from other forms of identity causes the individual to be more susceptible to change behavior based upon social cues and influences that include peer pressure. Shao, Aquino, & Freeman (2008) also found that the pressure exerted by moral role models can help to guide such individuals to strengthen their moral identity and to develop an intransient moral self.

## Research Question 1: Development of Moral Identity

*RQ 1: "How do adolescents develop moral identity?"*

Many factors influence the development of adolescent identity. In their study on the moral identities of adolescents, Oya Onat Kocabiyik & Adnan Kolaksizoglu (2014) utilized interpretative phenomenological pattern and grounded theory surveys with maximum variation and purposive sampling to continually gather data until concepts appeared consistently enough to make findings. With students between the ages of 20 and 25, they found that family, friends, other individuals, society, locality, culture, belief, university, social environment, and law all had an impact upon changes which occurred in adolescents' senses of personality, self, and responsibilities (Onat Kocabiyik & Kolaksizoglu, 2014).

Among these, Onat Kocabiyik & Kolaksizoglu found that role modeling was prominent in the development of adolescent identities (2014, p. 856). The effect of role models on moral identity also warrants special attention because it is the method in which a single person can make the greatest impact.

The importance of ethical role models appears significant and is documented through recent research. Albert Bandura, who pioneered social learning theory, found that role models facilitate the acquisition of moral or other types of behavior, and Michael Brown and Linda Trevino tested his theory by studying the impact of ethical role models on perceptions of ethical leadership (2012, pp. 587-588). Brown and Trevino's study uncovered a link between those who had ethical role models and those who exemplified ethical behaviors as leaders. They studied ethical leadership through interviews with over 217 supervisors and 659 direct reports at a major company, and discovered that supervisors who had ethical role models themselves achieved higher subordinate perceptions of ethical leadership (2012, p. 587).

They also found that ethical leadership was correlated for younger leaders with childhood role models and for older leaders with career role models (Brown & Trevino, 2012, p. 587). This study indicates that the presence of moral role models is important in developing a young adult's moral identity, which should then be refined through new relationships throughout one's career.

In addition to learning from role models, individuals develop their identity through their own actions. Ruodan Shao, Karl Aquino, and Dan Freeman explained the tenets of self-perception theory that people make inferences about their identity from their own actions and behaviors (2008, p. 525). Studies have demonstrated that participation in moral activities and organizations as well as dedication to moral causes foster the development of moral identity (Shao, Aquino, & Freeman, 2008, p. 525). Thus, moral behavior builds moral thought and identity, resulting in an effect whereby patterns of thought and subsequent behaviors

established in adolescence reinforce themselves in a way that either builds or erodes one's moral identity.

Shao, Aquino, and Freeman suggested that sustained moral commitments make a great impact upon youth character development, but they also point to a scarcity of research into comprehensive programs which focus on such moral commitments (2008, p. 527). More research would be helpful in demonstrating direct cause and effect of programs that focus on moral identity and character development.

## Research Question 2: How Moral Identity Works

*RQ 2: "How do role models contribute to the development of a strong moral identity and an intrinsic desire to do the right thing?"*

How, then, does moral identity create an intrinsic desire to do the right thing? Jan Stets and Michael Carter (2011) explained that this answer can be found through an understanding of identity theory. Identity theory states that an individual acts based upon one's "identity meanings" that regulate one's behavior so that the meanings of one's actions are consistent with these norms and values (Stets & Carter, 2011, p. 192).

When one acts contrary to one's identity meanings, negative emotions are triggered which spur the individual to behave in a way which better matches the norms and values, or underlying meanings of one's identity (Stets & Carter, 2011, p. 192). Stets and Carter conducted a survey and laboratory study which validated the thesis of identity theory. Their subjects consistently experienced negative emotions when an "identity discrepancy" existed (2011). The identities, moral or immoral, which are developed in youth produce emotions which encourage individuals to act in accordance with the way that they have learned to see themselves, which are influenced by those whom they have sought to emulate.

The benefits of moral and character-based identity to society are significant. Aquino and Reed tested participant voluntary donations in order to assess the effects of moral values, finding that for every unit increase in internalization of moral values participants contributed an average of 80% more donations (2002, p. 1436). In a study by Thomas Aquino et al, participants with lower moral identity were found to lie more during business negotiations (Shao, Freeman, & Aquino, 2008, p. 531).

Onat Kocabiyik and Kolaksizoglu found that adolescents' "sense of self" was the determining factor in their decision of whether or not to tell the truth (2014, p. 855). In a study conducted by Daniel Skarlicki, Danielle van Jaarsveld, and David Walker on call center employees, those with high internalization of moral values were markedly less likely to retaliate against customers in response to rude behavior (in Shao, Freeman, & Aquino, 2008, pp. 531:532). These studies have found that moral identity internally motivates individuals to act based upon principle and to do what they know is right.

In addition to acting ethically themselves, those with high moral and character-based identity are more likely to create an ethical organization environment when holding leadership positions. A 2008 study by David Mayer, Karl Aquino, Rebecca Greenbaum, and Maribeth Kuenzi found that a group leader's score on the internalization and symbolization dimensions of moral identity related strongly and positively to ethical leadership actions reported by followers and negatively related to "unit level" unethical behavior and "relational conflict" (Shao, Freeman, & Aquino, 2008, p. 532). This finding was replicated in two separate findings with different samples, and presented a strong example of how the moral identity of leaders creates norms which lead to a more ethical social environment (Shao, Freeman, & Aquino, 2008, p. 532).

Furthermore, three recent studies have found that individuals witnessing "exemplary moral conduct" can experience a "state of elevation" which results in increased moral behavior on their part (Shao, Freeman, & Aquino, 2008, p. 533). This underscores the power of moral exemplars or those who engage in exemplary moral actions to promote those values in others. Persons who serve as role models who exhibit ethical behaviors and a high sense of moral identity influence others to practice those attitudes and behaviors.

## Implications

Organizations that wish to develop moral identity in adolescents should make use of the findings of the just society perspective to embed moral values into the actions and thought patterns of our youth. Where a formal organization or activity cannot be created, mentors or role models can be offered. Anyone who has an admirable quality can be a role model for another person, and we ought to view ourselves this way.

Informal mentorship, which can be described as mentorship in which adults step outside of normal social roles to take a special interest in the lives and development of our youth, is a field that has seen comparatively little research (Erickson, McDonald, & Elder, 2009, pp. 344:347). Veronica Friht and Laura Wray-Lake found that organizations which encourage mentorship by teachers and other adults have fostered greater educational achievement in their students, and that teacher, community, and kin mentors all play a role in enhancing academic and overall success of students (2013, pp. 1469:1470).

Lance Erickson, Steve McDonald, and Glen Elder found a strong positive and "statistically significant" correlation between having an informal mentor and attaining higher grades (2009, pp. 344:356). Erickson, McDonald, and Elder (2009) also found that students with fewer socioeconomic or personal resources were less likely to have but more likely to benefit from informal mentors. The role of coaches, club advisors, or members of the work force including military or police personnel as moral role models warrants further study.

## Conclusion and Recommendations

How should schools promote forms of moral and character-based identity? A comprehensive, organizational level focus on character and ethics is most effective, and everyone can make a difference. Schools can use formal or informal mentors and focus on the way that everyone is an exemplar to others. School leaders should think outside established norms to select people with moral and character-based attributes as role models. Young adults who have had strong role models are more likely to become ethical leaders for the next generation. A well planned school wide character education focus can produce lasting improvements in student behavior and moral attitudes.

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# Using Works of Art to Give a Voice to Culturally Diverse Students: Q-Methodology Study

By Paula D. Beck, Ed.D.

## ABSTRACT

The current study by Beck (2014) investigated whether any relationship exists between a cross-section of 48 fourth-grade elementary-school students and their artistic judgments regarding the seven elements of art: color, form, line, shape, space, texture, and value. Each of these elements of art affects our senses and might offer a better understanding of an individual. This study employed Q-methodology to identify viewpoints that were shared among children and the works of art. Four Q-models emerged from the data, and were identified as: Model 1: Colorful and Eye-catching; Model 2: Perplexity and Animals; Model 3: Multiple Components; and Model 4: Nature. Participant characteristics included: gender, ethnicity (Asian, Black, Hispanic, and White students), socioeconomic status (SES), academic performance, and artistic ability. Findings showed that each of these characteristics were salient factors. The results of this study lead to a better understanding of students' likes, especially culturally disadvantaged students, which can help to increase awareness and engagement; strengthen motivation; lead to better performance in school; support the visual arts in schools; contribute to curriculum development; teacher education; policymaking; textbook visuals; and supply the information needed to the field of neuroaesthetics to conduct a study.

## Q-methodology

### Background and Overview

To meet the demands of a diverse population of students in public schools today, educators should become proficient across a range of student differences. Studies have shown that culturally disadvantaged students find it difficult to think critically and need to develop adequate social skills because of language, academics, SES, or gender (Appel, 2006; Chappell & Cahnmann-Taylor, 2013; Ladson-Billings, 1995; Paris, 2012). A study conducted by Beck (2014) investigated to see if any relationship existed between fourth-grade elementary-school students' artistic judgment dimensions (color, form, line, shape, space, texture, and value) and their demographic backgrounds (ethnicity, gender, SES, academic and artistic ability). As a way to motivate students, incorporating various visual works of art can be used to help engage them in the learning process.

Ellingsen, Thorsen, and Størksen (2014) have stated that in our changing society a child's perspective needs to be given more weight in research. "To be effective in a more inclusive, more demanding teaching environment, arts educators will have to be more responsive to individual differences by recognizing the variation in difficulties that their students will have and addressing them in productive ways" (Glass, Meyer, & Rose, 2013, p. 104).

The impact that the visual arts make in different communities, entire generations, society, as well as the development of a child, provide a vital role in one's learning experience (Amburgy, 2011; Chappell & Cahnmann-Taylor, 2013; Glass et al., 2013; Winner, Goldstein, & Vincent-Lancrin, 2013). Images and objects have power in one's personal and social life and the visual arts can help develop young minds and stimulate student emotions. Through the use of visual works of art, improved engagement and a better understanding of the marginalized student can be achieved.

### Personality and the Seven Elements of Art

Preferences for specific works of art (demonstrative of the seven elements of art) suggest a deeper connection to humanity. The psychological elements of art preference resonate with dissimilar personality traits. This in turn, can be of benefit to teachers' understanding of their diverse students. Figuring out what visuals inspire an individual learner, and then using that information to help motivate students, creates the opportunity for a deepened learning experience (Chamorro-Premuzic, Reimers, Hsu, & Ahmetoglu, 2009).

### Additional Factors That Could Influence Proclivity Towards Works of Art

Beck's (2014) investigation was both exploratory and interdisciplinary in nature, and no other research surfaced examining fourth-grade students and the seven elements of art. Several main perspectives were explored to help understand the various dimensions of a cross-section of fourth-grade children, their environments, and what might mold their behaviors.

Historically, artistic and aesthetic judgment testing needed to improve because of a series of poor experimentation choices by researchers that negatively affected artistic judgment in the first part of the 20th century (Bezruczko & Vimercati, 2002).

As a way to understand individual emotion and its implications on the learning process in children, the interdisciplinary field of neuroaesthetics has been producing reliable and valid results in researching how the brain responds to art (Bullot & Reber, 2013; Chatterjee, 2010, 2011; Kafka, 2012; Kawabata & Zeki, 2004; Lindell & Mueller, 2011).

From a humanities perspective, a child's developmental stage and cultural background needs to be examined. Every learner brings his or her own individual approach, talents, and interests to the learning condition (Guild, 1994). Children in fourth-grade between the ages of seven and eleven are in the concrete operation stage of development (Piaget, 1926, 1952), and how they interact with the teacher, each other, and their environment is reflective of this stage.

### Definition of Key Terms

In Beck's study (2014), visual arts were described as drawing, painting, sculpture, printmaking, collage, and photography. The following definitions were provided to clarify the meanings of the terms used in this study. The seven elements of art were defined as: color: light reflected off objects; line: a line is an identifiable path created by a point moving in space; shape (2D) and form (3D): define objects in space; space: area that an artist provides for a particular purpose (positive and negative space); texture: is the surface quality of an object that is sensed through touch; and value: describes the brightness of color.

Yu (2012) stated that visual perception provides a channel for children to interact with the environment, which allows them to develop thoughts and language in the process of seeking information and satisfying their needs.

### Literature Review of Aesthetic/Artistic Subjective Views

The long-term existence of art in history implies a deeper relationship between humanity and aesthetic likings. Each of our individual subjective views in art can help describe who we are. But, when a group selects similar works of art, we might get a better glimpse as to why they gravitate to particular works, provided we identify their individual characteristics. If we can understand the psychology behind subjective views, it can present a number of benefits to society. This information can be helpful in communities, motivate individual learners, and appeal to individual consumers (Chamorro-Premuzic et al., 2009).

People are sensitive to compositional form at a glance with exposure, which measures only 50 milliseconds, and is captured automatically by intermediate vision. Visual properties such as color, shape, and composition merge in early and intermediate vision and involve

the frontal and parietal cortices that mediate awareness. When objects are identified by higher vision, semantic association is evoked (Chatterjee, 2011).

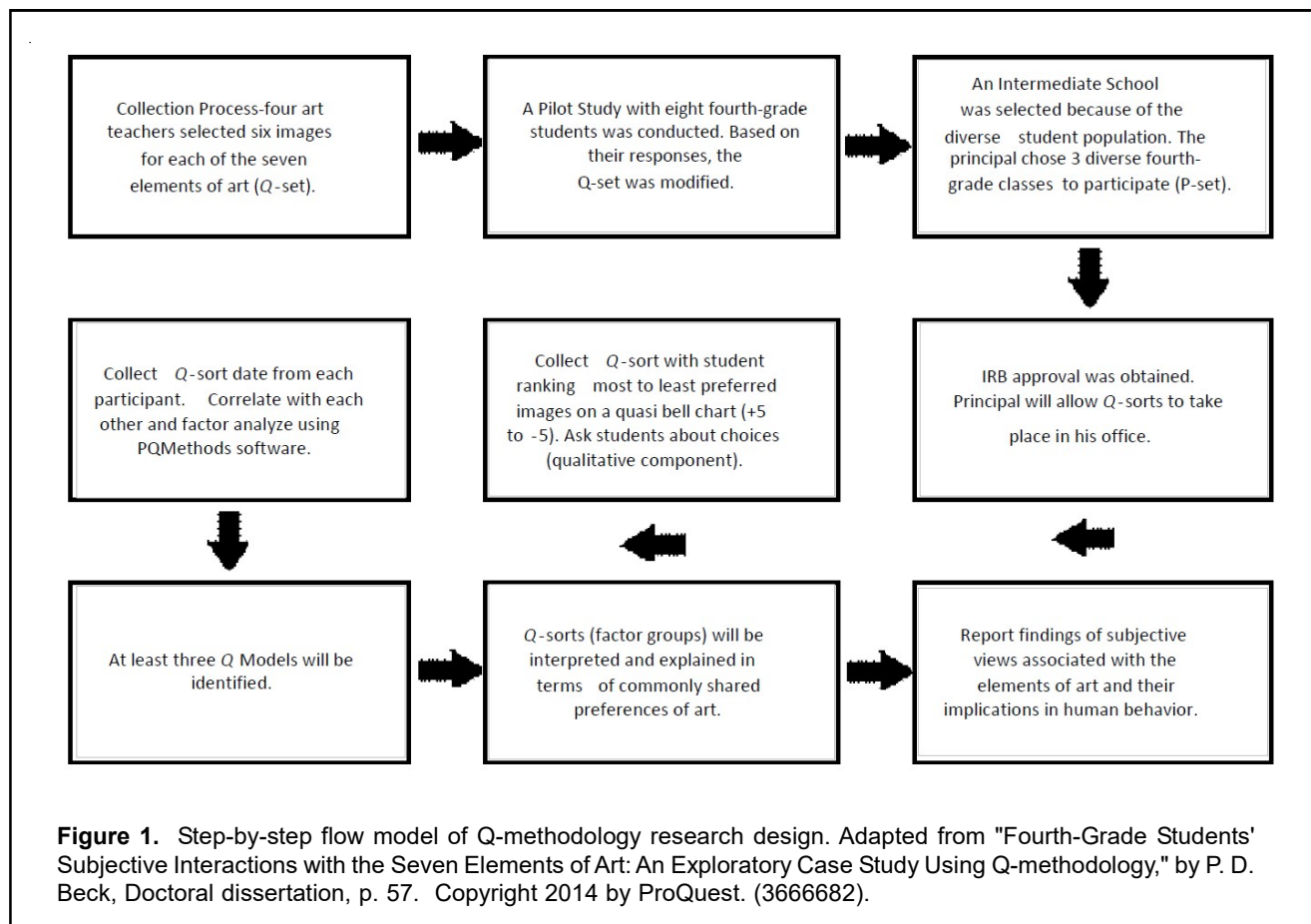
Gardner (1994) concluded that certain artists, primarily Impressionists, have salient techniques easily recognized by their style (Original work published in 1973). Pictorial illustrations in children's books have been studied in the past as a means to increase the likelihood that a child would be interested in reading that particular book because of the elements of art, subject, content, and artistic style found in the illustrations (Ramsey, 1989).

A difference was observed between 10 year old children in Lisbon and Chicago, when artwork displaying simplicity, symmetry, and uniformity was shown to them (Bezruczko & Fróis, 2011). There was a significant gender and cultural difference for simplicity and a deeper contrast in artistic judgment (Bezruczko & Fróis, 2011). Palmer, Schloss, and Sammartino, (2013) claimed that American and British people favored cool colors (green, cyan, blue) over warm colors (red, orange, yellow). Ou, Luo, Woodcock, and Wright (2004) measured color-emotions through subjective ratings and established that three factor-analytic dimensions predicted color subjective views: active-passive, light-heavy, and cool-warm, with active, light, and cool colors being preferred to passive, heavy, and warm colors.

Aesthetic preference and different individual personality types have been studied (Furnham & Walker, 2001), comparing works of art and personality (Chamorro-Premuzic et al., 2009; Chang, 2012; Eldén, 2012; Furnham & Walker 2001; Gardner, 1970; Kakamura, 2009; Palmer et al., 2013; Ramsey, 1982), art and diversity (Amburgy, 2011; Godfrey, 1992; Jacobsen, 2010; Selig, 2009), color and personality (Jue & Kwon, 2012; Machotka, 1982), shape and personality (Silvia & Barona, 2009), cognition and aesthetic preference (Chatterjee, 2011, Cupchik, Vartanian, Crawley, & Mikulis, 2009), art and gender (Savoie & St-Pierre, 2012). However, no study has examined the actual seven elements of art: color, line, form, shape, space, texture and value with children's attitudes towards these works of art.

"Beyond perception and conception in visual aesthetics, two other aspects of aesthetics are important. The first is the emotional response to an aesthetic image; the second is the process of making aesthetic judgments" (Chatterjee, 2011, p. 302). A measurable factor can be established that can benefit marginalized students based on their connection or aesthetic likings with various works of art. We can begin to look for parallels among groups of students who prefer similar works of art because of the works' aesthetic properties grounded in the elements of art. A strong connection with specific art usually generates an emotional response which in turn, helps in the learning process. Once a group of students is established, teachers can utilize the common visual works of art as an aid in the classroom. A more engaged student can enter into a more meaningful learning experience.





## Methodology

In this mixed method study, Beck (2014) investigated the shared subjective views of children in fourth grade after viewing famous works of art embedded in the seven elements of art.

## Research Design

A step-by-step model (**Figure 1**) of the methodological process illustrates how Q-methodology was used in this study.

## Sample and Participants' Characteristics

In all, 44 participants from one intermediate school in the suburbs of New York that best represented a cross-section of students in fourth grade made up the P-set. Demographics for this school (2011-2012) were: 36% eligible for free lunch, 4% reduced lunch, 18% limited English proficient, 0% American Indian or Alaska Native, 8% Black or African American, 32% Hispanic or Latino, and 54% White. (<https://reportcards.nysed.gov/files/2011-12/RC-2012-580413030008.pdf>).

Diversity was addressed; the gender distribution was approximately even (45% male and 55% female).

Ethnic composition was broken down into four groups (43% Caucasian, 34% Hispanic, 16% Asian, Middle-Eastern or Southeast Asian, and 7% Black). SES, based whether or not a child received free/reduced lunch was 41% lower SES and 59% upper/middle SES. Academic ability, based on teacher evaluation, was 32% above average, 39% average, and 30% below average. Artistic ability, based on professional evaluation of each child's drawing of a playground before their Q-sort, was 48% above average, 32% average, and 20% below average. One last characteristic was evaluated; their capability to select the works of art during the Q-sort. Participants were 89% decisive and 11% indecisive. To maintain an unbiased opinion, all student information was uncovered and recorded after the Q-sorts (Beck, 2014, p. 91).

## Materials and Procedures

A Q-set based on the seven elements of art (color, form, line, shape, space, texture, and value) was designed to use in the ranking selections. Images were gathered from 42 famous works of art which best represented the seven elements of art (six images for each element) as well as representing various cultural groups, artists, and styles of art.

Since more than one element of art is represented in most works of art, the strongest element of art directed the classification for each work of art. Additional elements of



art were included as characteristics when analyzing the Q-models. Each work of art was already recognized by critics as a significant accomplishment in the medium and field; authenticity was already established. Only one work of art from each of the following professional artists was used: Adams, Albers, Arp, Baoshi, Beardsley, Bierstadt, Bradford, Calder, Caravaggio, Cezanne, Degas, Dine, Escher, Goldsworthy, Hepworth, Johns, Kahn, Kandinsky, Khalo, Klee, Kline, Kusama, Lawrence, Linares, Matisse, Mehran, Miró, Mondrian, Monet, Nevelson, O'Keefe, Oppenheim, Picasso, Pollock, Rauschenberg, Remington, Ringgold, Rothko, Smithson, Van Gogh, Vermeer, and Wyeth.

Sixteen images were of abstract art; six of landscapes/seascapes; eight of figures/portraits; four of objects; five of animals; and three of still-lives. Art style was also considered to offer different stimuli: eight abstract; two abstract expressionism; one art nouveau; one baroque; one Chinese ink; two cubism; one dynamic cubism; two environmental art; one fauvism; three figurative/illusion; one folk; one geometric abstract; one golden age baroque; four impressionism; two modernism; two pop; one post impressionism; five realism; and three surrealism works of art.

An effort to represent the male and female artist was calculated. There was also an intentional void of any art portraying the "male gaze" or the objectification of women in art (Blandy & Congdon, 1991). Specific works were chosen to represent a variety of cultural groups of people; Faith Ringgold (1996), *Flying Home: Harlem Heroes and Heroines* [Painting] and Jacob Lawrence (1958), *Brownstones* [Painting] are famous black artists; Frida Kahlo (1932), *Self-portrait on the Border between Mexico and the United States* [Painting] and Pedro Linares (1986), *Alebrije* [Sculpture], are Mexican artists; Shohreh Mehran (2012), from "Defaced" series, [Painting], is a Middle Eastern artist; Yayoi Kusama (1962), *Accumulation* [Sculpture], is a Japanese artist; and Fu Baoshi (1950), *Landscapes of the Four Seasons*, is a Chinese artist.

A pilot study was conducted with a cross-section of fourth-grade students, not included in the study, to test the Q-set. Changes were made to the Q-set so it was deemed reliable. Additionally, a 10 question post Q-sort survey was given to each participant (Beck, 2014).

The materials were satisfactory to proceed with student interviews to answer the question if any relationship existed between a cross-section of 48 fourth-grade elementary-school students and their artistic judgments regarding the seven elements of art: color, form, line, shape, space, texture, and value.

## Results

A total of 48 Q-sorts were intercorrelated and factor analyzed using PQMethod, which identified those statements which had the highest and lowest z-scores. Four factors were extracted and rotated, which together explained 53% of variance. Thirty-nine or 89% of the 44 Q-sorts

loaded significantly on one or another of these four factors (Beck, 2014). Factor loadings of  $\pm 0.38$  or above were significant at the  $p < 0.01$  level (Watts & Stenner, 2012).

A total of 16 participants loaded on Factor Model A (13 girls, 3 boys); 10 participants loaded on B (10 boys); 6 participants loaded on C (5 girls, 1 boy); and 7 participants loaded on D (4 girls, 3 boys). Four participants did not load on any factor model. This solution explained 53% of the variance, with a correlation of 0.47 at the highest between factor models (Beck, 2014).

## Consensus Statements

**Positive consensus.** Three works of art indicated positive consensus and provided salient information as to what all fourth-grade participants who took part in this study agreed was likeable art. Kahn, who ranked highest of Q-Model A (2: +5), B (2: +2), C (2: +3), and D (2: +3) proved to be the strongest work liked by all participants. Monet was next highest with A (4: +2), B (4: +1), C (4: +2), and D (4: +3); and Van Gogh was third highest with A (36: +1), B (36: +2), C (36: +1), and D (36: +3). All works referred to were of landscapes and had a strong color element (Beck, 2014, p. 152).

**Negative consensus.** Five works of art signified negative consensus and provided salient information as to what all fourth-grade participants who took part in this study agreed was not likeable art. Some participants appeared uncomfortable when they discussed some of these works of art. Both Vermeer and Kline had the strongest negative loadings, Vermeer was low on A (42: -4), B (42: -5), C (42: -3), and D (42: -2), and Kline was low on A (27: -3), B (27: -4), C (27: -5), and D (27: -2). Caravaggio was low on A (39: -4), B (39: -3), C (39: -1), and D (39: -1); Rothko was low on A (6: -1), B (6: -3), C (6: -4), and D (6: -5); and Kusama was low on A (33: -1), B (33: -1), C (33: -3), and D (33: -4) (Beck, 2014, p. 152).

**Consensus Statements That Do Not Distinguish Between ANY Pair of Factors.** Two consensus statements did not distinguish between any pair of factors. All the study participants ranked the Nevelson neutral, A (11: 0), B (11: 0), C (11: +1), and D (11: 0), and Hepworth neutral, A (11: -1), B (11: -1), C (11: 0), and D (11: +1) (Beck, 2014, p. 153.)

## Findings

### Results of Participation

Four factors, inclusive of 39 (89%) participants, appeared with an uneven distribution across the four Q-models (Beck, 2014). The remaining five participants were not included in the analysis. The highest loaders for each Q-model were decisive and upper/middle SES; in Q-models A, C, and D, the highest loaders were females; and in Q-models B, C, and D, the highest loaders were above average in academic ability.

Four models: Colorful and Eye-catching, Perplexity and Animals, Multiple Components, and Nature offered insights that identified viewpoints that were shared among a cross-section of students and 42 famous works of art (Beck, 2014, p. 132).

## Summary of Findings

The findings indicate a relationship between particular demographics of the participants that make up the p-set and some of the elements of art (Beck, 2014).

**Q-Model A: Colorful and Eye-catching.** This model accounted for 21% of the explained variance. It had the greatest amount of explained variance in this study, with 16 of the 44 participants loading at or above ( $\pm.39$ ) onto this factor. Q-Model A had a strong relationship between gender and both of the elements: color and shape. The majority of females were White, average intelligence, and upper/middle SES.

The participants in Q-Model A were: 81% females and 19% males (the same 81% of females were the top loaders on Q-Model A). Their cultural background was: 56% White, 25% Hispanic, 13% Black, and 6% Asian. Their socioeconomic status (SES) was 69% upper/middle, 31% lower. Their academic background was: 31% above average, 50% average, and 19% below. Their artistic ability was 37% above average, 44% average, and 19% below. Fourteen participants have art in their home that reminds them of some of the work shown by Kahn, O'Keeffe, Klee, Mondrian, Adams, and Picasso. Their interests included: singing, crafts, reading, playing with friends and family, dancing, coloring, ice skating, gymnastics, football, play with Xbox, and wrestling.

**Q-Model B: Perplexity and Animals.** This model accounted for 12% of explained variance in this study. It had the second greatest amount of explained variance, with 10 of the 44 participants loading at or above ( $\pm.37$ ) onto this factor. They had a strong relationship between gender and both of the elements: form and space. This group was all males, above average intelligence and SES.

The participants in Q-Model B were: 100% males, their cultural background was: 50% Hispanic, 30% White, 10% Black, and 10% Asian. Their SES was: 60% upper/middle and 40% lower: their academics were: 60% above average, 30% average, and 10% below. Their artistic ability was 40% above average, 40% average, and 20% below. Six participants have art in their home that reminds them of some of the work shown by Pollock, O'Keeffe, Remington (artifact), and Miró (abstract painting at home). Their interests indicated activity: soccer, bike riding, sports, reading, swimming, playing guitar, and hockey.

**Q-Model C: Multiple Components.** This model accounted for 11% of the explained variance in this study. It had the third greatest amount of explained variance, with 6 of the 44 participants loading at or above ( $\pm.43$ ) onto this factor. Q-Model C also had a strong relationship between

gender, color, and shape, but with different works of art than Q-Model A, that included more ethnic themes. They were a majority of diverse females, evenly divided SES, and above average academically and artistically.

The participants in Q-Model C were: 83% females and 17% males. Their cultural background was 50% Asian, 33% Hispanic, and 17% White. Their SES was 50% upper/middle, and 50% lower. Their academics were 50% above average, 33% average, and 17% below. Their artistic ability was 50% above average, 17% average, and 33% below. Six participants have art in their home that reminds them of some of the work shown by Cezanne, Klee, Picasso, Mehran, Kahlo, O'Keeffe, Dine, and Smithson. Their interests included drawing, music, duct tape art, time with family, crafts and painting.

**Q-Model D: Nature.** This last model studied accounted for 9% of the explained variance in this study. It had the fourth greatest amount of explained variance, with 7 of the 44 participants loading at or above ( $\pm.47$ ) onto this factor. Q-Model D had no relationship between participant characteristics and the elements of art, but had a strong relationship being between above average artistically and lower SES and the subject matter of nature. They were a slight majority of females and a majority of above and average academic ability.

The participants in Q-Model D were 57% females and 43% males. Their cultural background was 43% White, 29% Hispanic, 14% Black, and 14% Asian. Their SES was 43% upper/middle and 57% lower. Their academics were 43% above average, 43% average, and 14% below. Their artistic ability was 57% above average, 29% average, and 14% below. These participants have art in their home that reminds them of some of the work shown by Bierstadt, and O'Keeffe. Their interests are singing, quadding, hunting, break dancing, running, reading, and soccer (Beck, 2014).

## Discussion

Beck's (2014) study revealed a strong relationship between some of the elements of art participants preferred with gender, ethnicity, academic ability, and SES. Each of these participant demographics can be used to gain a better understanding of the marginalized student.

Females dominated Q-Models A and C, but with a much different preference for colorful works of art. A youthful group of females in Q-Model A selected colorful and more simplistic girlish works of art, while females in Q-Model C selected some of the same works, but also included a few ethnic works of art that were more complex. Both groups shared the association of color with a brighter world.

Results suggested that ethnicity was salient. The majority of participants in Q-Model A were White females of average academic ability and artistic ability and upper/middle SES. When reviewing this model's least favorite works of art, ethnicity played a part in their selections. The Mehran painting, of three Iranian women, proved to be too unfamiliar with

this group of females who ranked it as their least preferred work of art. This group shied away from the unfamiliar and more culturally diverse works of art.

Q-Model B, consisted of all males; a decisive group with a majority of Hispanic males from upper/middle SES with above average intelligence, which favored works that represent form. They did not favor the colorful works of art associated with Q-Model A. They preferred works of art that could be described as typically boyish, Remington's 'cow-boy on a horse,' puzzle-like themes, an aggressive looking bird, and a dog. They liked animals and art constructed in a more complex manner.

In Q-Models C's top selections, works reflected typical girlish likes, as well as cultural works of art. Q-Model C, consisted of a majority of decisive Asian females, who were both above average academically and artistically, and also liked two different works of art. Both works have a strong color or shape and line element, but it is the content, reflective of a more complex and culturally diverse art which demonstrates a difference. According to Bezruczko & Fróis (2011), cultural differences revealed a deeper contrast in artistic judgment. Fatima, who loaded on Q-Model D, ranked the Mehran work of art higher (41: +3) and said, "This reminds me of my culture. My family is from India." Clearly one can observe how culture has influenced the works of art selected by participants.

Q-Model B was dominated by Hispanic males, with two of the three highest loaders White males, who had an interest in adventure and complexity. The only two groups to rank the Linares, a Mexican artist, work of art on the positive side of the chart was Q-Model B (9: +3) and Q-Model C (9 +2). And again, Lawrence's work of art, a well-known Black artist, on the positive side of the chart was Q-Model B high at (3: +3) and Q-Model C, a diverse group of participants, at (3: +2). Each of their cultural backgrounds could have predisposed their selection here (Guild, 1994). According to Jacobsen (2010), even though evolution and one's biological design are significant when evaluating aesthetics, it was established that many aspects of aesthetic appreciation are culturally determined.

Academic ability was evident and proved to be salient in both Q-Models B and C, whose participants each selected works of art that demonstrated a more complex or adult-like theme. With a higher academic average among participants in Q-Model C and some more creative answers and interests, this group has the potential to be more receptive to a higher level of artistic content. The same holds true for Q-Model B. Their visual interest in art revealed the ability to enjoy works of art that were more complex in nature. With such an interest for form and puzzles, the field of Engineering comes to mind, when thinking about compatible subject matter.

And lastly, Q-Model D had no relationship between any characteristics and the elements of art, but had a strong relationship between above average artistically and lower SES and the subject matter of nature.

An interesting observation of Q-models A and B, is that they shared an upper/middle SES majority. Each was dominated by gender and selections in the works of art tend to reflect gender. These are the children who could fall under the descriptions, "Girls will be girls," and "Boys will be boys" (Beck, 2014).

### Limitations of the Study

There were several limitations to the study, the first being size. Images were printed on 2" x 3" photographic paper to fit onto the quasi-bell shaped chart. Three dimensional characteristics could not be captured in the images. Not seeing a work of art in its correct size and environment can affect the viewing experience.

Other limitations included: students were from one intermediate school in Suffolk County, New York; some students selected for the study did not return the parental permission slips; and Q-methodology is not generalizable (Beck, 2014, p. 204).

### Implications of the Study for Practice and Policy

The practical implications for this research include policy making, teaching education, curriculum and testing, and social work modifications in schools. Reviewing the preferences of students will allow those who work with them to obtain a better understanding of their psyche. Each element of art helps define something unique about individual learners. The use of a child-friendly research method, which does not require speaking, gives an advantage to the marginalized student's ability to communicate (Beck, 2014).

#### Better understanding of children's interests.

Maras (2008) suggested a better understanding of children and their capabilities to conceptualize artwork at their age level will empower teachers to feel more secure in selecting and structuring content. As can be concluded from Beck's study (2014), some works included might generate greater interest. The Kahn, Monet, and Van Gogh, each a colorful landscape and examples of impressionism and abstract expressionism, demonstrated a universal appeal to all types of children. Using such works could prove beneficial in class. As a way to gain and maintain student engagement, a variety of visual stimulation associated with individual preference, can be displayed during instruction.

Other works of art such as the Caravaggio, Kline, and Vermeer, might be introduced to children at a later stage of development.

Q-Model A, a group of females, who are average academically and artistically, above or middle SES, majority White, and in the fourth grade preferred works of art that were colorful, bright, and include defined shapes. Their youthful demeanor and gender makes this group easily attracted to works of art which are bright and very colorful. Using a somewhat girlish theme, such as flowers, hearts, and crayons, should engage this type of learner. Attracted to the

works of Kahn, O'Keeffe, Bradford, Dine, Matisse, and Smithson, whose works might evoke the youth, intrigue, and ownership with the familiar, should ignite the human spirit within these girls (Beck, 2014).

When working with boys in Q-Model B, creating a sense of adventure, inclusive of puzzles, hands-on materials, building supplies, and structures should be considered as inspirational for this type of student. Attracted to the works of Bradford, Linares, Smithson, Remington, Picasso, and Escher, these works might evoke warm-hearted memories of forgotten toys, imagination, intrigue, adventure, puzzlement, enigmatic, and intellectual stimulation. As Eisner (2002) stated, the relationship between thinking and the material with which we and our students work is valuable.

The diverse group that comprised Q-Model C is most likely the "thinkers" in the grade and is probably sensitive to other cultures. They look at the world as their oyster, a bright and colorful place to live. They are attracted to the works of Bradford, Picasso, O'Keeffe, Kahn, Dine, and Ringgold. Teachers should keep in mind that this group of minority students have the ability to recognize and are open to more ethnic and adult-like themes in art. They will be attracted to colorful and meaningful art (Beck, 2014).

The inclusion of visuals that address gender and cultural differences in testing materials, textbooks, classrooms, and school environments, could provide just enough stimulation to motivate and to keep marginalized students focused (Beck, 2014, p. 199).

**Art in School.** The importance of keeping the visual arts classes in students' curriculum serves many purposes. They offer an environment where problem solving, self-esteem building, decision making, communication skills, and self-expression are encouraged. Additionally, students have a greater opportunity to learn about different people and cultures through the use of visual works of art (Beck, 2014).

This exploratory exercise (Beck, 2014) paved the way to capture a snapshot from a cross-section of fourth-grade students and their preferences for famous works of art. The differences among student demographics and their preferred works of art helped gain a better understanding of these individuals. As a result of these findings, one can better identify with diverse students and begin a more meaningful teacher/student communication. As a way to help diverse students, especially the marginalized students, voice their feelings and become more actively engaged in their learning, it is recommended to use visual works of art that they prefer.

Similar to a Rorschach test, this method of identifying subjects' individual perceptions, and then group individuals with others who share similar perceptions, offers those who create policy and curriculum, or teach students, the option to modify visual instruction that could help motivate and encourage learning (Beck, 2014).

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# A Review of Mindfulness Research Related to Alleviating Math and Science Anxiety

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## Abstract

Defined as nonjudgmentally paying attention to the present moment (Kabat-Zinn, 1994), modern-day mindfulness has gained considerable attention in various science fields. However, despite this growth, many uses of mindfulness remain unexplored. In this paper, we focus on the application of mindfulness programs in educational settings, specifically to target math and science anxiety. Since education-related anxiety can have negative consequences on students and interfere with academic performance, researchers have begun exploring the plausibility and efficacy of implementing mindfulness programs into school curriculums to alleviate these anxious feelings. This may be particularly beneficial to math and science, as those are two fields infamously associated with anxiety yet ones that desperately need occupational growth. This paper explores the limited research connecting mindfulness to reduced test anxiety and emphasizes the need for more research directly assessing the effects of mindfulness on math and science in particular.

Although its origin stems from ancient meditation practices, mindfulness has gained considerable attention in today's society. Its applications are vast, showing beneficial outcomes in many different environments and fields of practice. John Kabat-Zinn, founder of the modern day practice, defines mindfulness as "paying attention in a particular way on purpose, in the present moment, and nonjudgmentally, to the unfolding of experience moment to moment" (1994). The practice combines three key features to promote moments of clarity: paying attention to the present moment, recognizing and classifying emotions, and experiencing more refined self-awareness in the present. Often associated with meditation and controlled breathing, mindfulness techniques can be performed formally in a structured environment or informally in everyday life. It has been used to reduce anxiety (Barbosa, Raymond, Zlotnick, Wilk, Toomey & Mitchell, 2013), lower psychological distress (Rosenzweig, Reibel, Greeson, Brainard, & Hojat, 2003), and foster a better quality of life (De Frias & Whyne, 2014). A number of mindfulness-based therapies have emerged out of the larger field, with Mindfulness-based Stress Reduction (MBSR) and Mindfulness-based Cognitive Therapy (MBCT)

being the two most notable types. This paper, however, will focus on mindfulness and its application to education and subject-specific anxiety in math and science. The need for students to be interested in science, technology, engineering, and math (STEM) is apparent, as these subjects are critical to the growth and advancement of society (Business-Higher Education Forum, 2011). Yet, schools are producing few young people interested in or qualified for a career in STEM-related fields (Business-Higher Education Forum, 2011). Based on our review of pre-existing literature, we believe that mindfulness would be an effective technique to alleviate math and science anxiety in educational settings and, as a result, draw more interested and qualified students into the STEM fields.

## Applications of Mindfulness

### Education

School remains a major source of stress among school-aged children and young adults. In a survey conducted by Harvard's School of Public Health, about 40 percent of parents indicated that school caused a great amount of stress for their high school student, and 45 percent of teens agreed by listing school as a main source of stress and suffering (NPR, 2013). Since stress can have negative effects on physical and mental health, researchers have assessed the plausibility of practicing mindfulness in educational settings in hopes of reducing stress, anxiety, and depression. Researchers at Brown University explored the idea by randomly sorting sixth-grade students into an Asian history class with daily mindfulness meditation sessions or an African history course paired with a different experiential activity (Britton, Lepp, Niles, Rocha, Fisher, & Gold, 2014). Before and after comparison of the Youth Self Report and the revised Cognitive Affective Mindfulness Measure 82% of students felt more focused after practicing meditation at least once and 88% noted a decrease in stress, anxiety, and worry (Britton et al., 2014). Similar findings were reported in another study, which assessed the effects of a nine-week long mindfulness program on a large sample of 12 to 16 year old students.

The non-randomized study assessed well-being and mental health outcomes at three different time periods: pre-intervention, post-intervention, and follow up. At the three-month follow up, the students reported fewer depressive symptoms, lower levels of stress, and greater overall well-being (Kuyken et al, 2013).

As educational stress is not exclusive to high school students, studies assessing mindfulness interventions on college populations have also shown promising outcomes. One study reviewed the effects of movement-based mindfulness courses on self-regulation, self-efficacy, mood, perceived stress, and sleep quality in 166 college students, as they too get affected by stress. It was determined that participation in a 15-week Pilates, Gyro kinesis or Taiji quan class increases mindfulness, and, in turn, improves sleep quality (Caldwell, Harrison, Adams, Quin & Greeson, 2010). Another study assessed the effectiveness of a 10-week MBSR seminar in reducing the emotional distress experienced by second-year medical students. Although the baseline total mood disturbance (TMD) was initially greater in the MBSR experimental group than the controls, the MBSR group still scored significantly lower in TMD at the completion of the study (Rosenzweig et al., 2003). These findings suggest that MBSR is an effective technique in helping medical students cope with academic stressors. The study also determined significant effects on many additional subscales including: Tension-Anxiety, Fatigue-Inertia, and Vigor-Activity (Rosenzweig et al., 2003). Likewise, Shapiro, Schwartz and Bonner (1998) examined the effects of a shorter MBSR intervention on a similar population. They found that even an 8-week program could effectively reduce self-reported anxiety and depression in pre-medical and medical students (Shapiro et al, 1998).

To assess the effectiveness of mindfulness in every niche of the academic world, researchers have conducted studies on populations of educators as well. Teachers work closely with students and play an integral role in their classroom success. This close relationship allows teachers to have a great impact on students and implies the importance of an educator's wellbeing on the classroom atmosphere. To evaluate the effectiveness of mindfulness on stress, burnout, and teaching efficacy, elementary school teachers participated in a modified Mindfulness-Based Stress Reduction (MBSR) course specifically geared towards educators and were encouraged to practice the skills obtained for 15-45 minutes each day (Flook, Goldberg, Pinger, Bonus & Davidson, 2013). Participants completed the Symptom Checklist 90-R to measure psychological distress, the Five-Facet Mindfulness Scale to assess mindfulness and self-compassion, the Maslach Burnout Inventory to evaluate burnout, and gave daily saliva samples to assess cortisol levels (Flook et al., 2013). Although this was only a pilot study with a small sample size, the final results of the study indicate that mindfulness is a promising intervention for teachers, which further supports the idea of using mindfulness in an educational setting. More specifically, the MBSR intervention improved teacher mindfulness and self-compassion, in-

creased teaching efficacy, lowered psychological burnout, and reduced attention biases (Flook et al., 2013). Focusing on a slightly different population, a second study reviewed the effects of relational mindfulness in a group of 8 teachers, counselors, and educational leaders in the 10-week program. Nonetheless, it was determined that relational mindfulness allowed the educators to better cope with the emotional challenges present in a typical school environment, thus improving their overall effectiveness as educators and leaders (Burrows, 2011). The participants were better able to engage in effective conversation with colleagues and solve problems; thus improving their overall effectiveness as educators and leaders.

### Test Anxiety

According to the American Test Anxieties Association (an organization of educators and psychologists dedicated to lessening student test anxiety), 20% of students are plagued with "severe" test anxiety, including close to 10 million children in North America alone (Driscoll, 2004). While low levels of anxiety can act as a motivator for some students, higher levels of anxiety have detrimental effects (Dobson, 2012). Test anxiety can affect a student's self-confidence, memory, and attention, which can ultimately lead to a decreased academic performance. Studies in this area of research have reported an overall negative effect of excessive anxiety on performance situations, especially at the academic level, which often goes undetected (Cunha & Paiva, 2012). Often times, these sufferers adequately prepare for their exams but fail to perform well. However, despite the prevalence of exam anxiety, it often goes undetected in many students.

Studies concentrated on mindfulness and test anxiety focus on targeting the negative consequences that result from the anxious feelings, such as increased stress levels, reduced concentration and low levels of achievement. One way to decrease the stress levels in students suffering from test anxiety is Mindfulness Based Stress Reduction (MBSR). Founded by Jon Kabat-Zinn, MBSR is a type of therapy used in clinical settings to reduce stress from pain and other related disorders. Since MBSR seems to lower levels of stress in clinical settings, practicing mindfulness in educational environments may show the same positive outcomes. If mindfulness can lower the levels of stress associated with test anxiety, then improved concentration and higher test scores should be likely to follow. One study that aimed to explore this relationship and evaluate the efficacy of mindfulness in this context found an inverse relationship between mindfulness and test anxiety (Cunha & Paiva, 2012). In this exploratory report, participants reported their personal levels of exam anxiety, self-criticism, acceptance, and mindfulness (Cunha & Paiva, 2012). Based on their initial scores, students were separated into two groups: low anxiety and high anxiety. The individuals in the high anxiety group displayed higher levels of negative self-criticism and low acceptance/mindfulness skills (Cunha & Paiva, 2012). This suggests that those with high mindfulness and acceptance



would experience less exam anxiety. Another study that further assessed this relationship determined that students with high mindfulness scores report low scores of perceived stress and maladaptive coping styles (Palmer & Rodger, 2009). These results demonstrate a positive relationship between mindfulness, rational coping and perceived stress (Palmer & Rodger, 2009).

The two main components of mindfulness are present-moment awareness and acceptance, with the latter being especially useful for students suffering from test anxiety. The acceptance approach teaches individuals to be aware of both positive and negative feelings but to react nonjudgmentally. Instead of fixating on the thoughts, they are encouraged to let them pass without interference. A study by Turkish scholars assessed the effectiveness of using this nonjudgmental awareness to fight test anxiety (Senay, Cetinkaya & Usak, 2012). 87 college freshmen were separated into either a control or experimental group and told to use either the avoidance or acceptance strategy. The results determined that both strategies were independently effective (Senay et al., 2012). Another study that aimed to assess the efficacy and role of mindfulness in an academic setting implemented a group mindfulness meditation session in a population of high school females. Despite the small sample, pre and post-test scores on the Spielberg Anxiety Test suggest that mindfulness sessions do decrease exam anxiety (Sohrabi, Mohammadi, & Delavar, 2013). Individuals also reported lower levels of emotional anxiety and worry (Sohrabi et al., 2013). In regards to the effects of mindfulness on test anxiety, one study reported no change in its participants. Paterniti (2007) randomly sorted students into a mindfulness group or a study skills group, which met for an hour a week for three weeks. During this meeting, the study skills group learned proper note taking and time management techniques, while the mindfulness group learned sitting meditation, yoga, mindful eating and body scan skills (Paterniti, 2007). It was determined that neither of the groups showed significant reductions in test anxiety, worry, or emotionality (Paterniti, 2007). However, these findings may indicate that a longer period of time is needed for the mindfulness program to yield better results.

While there is limited research assessing the effects of mindfulness on test anxiety, there are even fewer studies that specifically focus on the math and science fields. One study assessed the effects of mindfulness training on test anxiety in high school math students (Niss, 2012). Before beginning mindfulness training, students completed the Subjective Units of Distress Scale to gauge their baseline score. Then for the spring semester prior to each exam, they underwent mindfulness training where students would focus on breathing and body awareness for nine minutes (Niss, 2012). The exam scores from spring semester were compared to the fall semester, where no mindfulness exercises were completed. Results indicated some improvement in test scores between semesters and suggested that mindfulness was most helpful to students with very high levels of anxiety (Niss, 2012).

## Academic Performance and Achievement

Test anxiety, specifically the cognitive component, is detrimental to a student's academic achievement (Cassady & Johnson, 2001). Due to this relationship, mindfulness may not only reduce test anxiety but, as a result, indirectly boost academic performance as well. To further explore the link between test anxiety and performance, researchers compared anxiety scores to exam scores in a population of undergraduate students. Cassady and Johnson (2001) determined that high levels of cognitive test anxiety are correlated with lower test scores on both in-class exams and the Scholastic Aptitude Test (SAT). A similar study conducted at Hampton University explored the relationships between meditation and grade point averages (GPAs). In this educational study, participants were randomly sorted into a control group that participated in a one-hour study session or an experimental group that meditated for ten minutes prior to the study session (Hall, 1999). It was discovered that students who meditated had higher semester and cumulative GPA's (Hall, 1999). From this, we learn that meditation can have both short term and long-term effects on academic performance. Additionally, meditation seems to aid in the retrieval of information before an exam (Hall 1999) and benefit working memory capacity (Niss, 2012).

As previously mentioned the acceptance component of mindfulness seems to be particularly valuable in the realm of academics as it can reduce anxiety and improve performance. In one study, researchers created a unique mindfulness program based on acceptance and commitment therapies, and implemented it in a group of secondary students (Franco, Manas, Cangas, & Gallego 2010). The experimental group participated in one, 1.5-hour meditation session per week for ten weeks in which students were encouraged to let thoughts pass while repeating a word or mantra (Franco et al., 2010). Students in the program showed significant improvement in academic performance in addition to an increase in self-concept and decrease in anxiety (Franco et al., 2010).

## Discussion

Although limited, the results from these studies suggest that mindfulness is an effective measure to combat many issues found within the field of education. Students and educators alike are victims of stress. For students, stress can manifest itself as test anxiety, and for educators it can affect job performance and promote teacher burnout. However, these problems seem to be corrected through the practice of mindfulness. From the literature, we learn that mindfulness is helpful across a wide range of ages varying from middle school to college. Students practicing mindfulness have lower levels of stress, negative thinking, worry, and other feelings associated with anxiety (Sohrabi et al., 2013; Senay et al. 2012). They also have better grades and score higher on tests than their non-meditating peers (Hall, 1999). Similarly, teachers who practice mindfulness report lower levels of stress, display more



compassion toward their students, and are less likely to experience burnout (Flook et al., 2013). These qualities produce teachers who perform better on the job and, in turn, more positively impact their students.

The positive effects of mindfulness are apparent, but the method on how to implement a mindfulness program in a classroom remains in question. In a study comparing the efficacy of informal versus formal mindfulness programs, it was concluded that the latter seems to have a more significant effect on the student. Hindman's study (2013) assessed the effectiveness of two Mindful Stress Management programs, one that focused formal mindfulness meditation with informal practice (MSM) and one that utilized brief mindfulness exercises with informal practice (MSM-I). While both six-week programs showed positive outcomes when compared to the wait-list control group, MSM participants showed more improvement in psychological inflexibility and stress than those who partook in the MSM-I program (Hindman, 2013). These findings suggest that a formal 6-week program with informal practice would be the promising intervention for undergraduate and graduate student stress (Hindman, 2013). Incorporating a long-term, formal mindfulness program into a school curriculum would allow both students and educators to function optimally.

Although most studies concluded that mindfulness is effective in combating test anxiety, they were limited in both size and scope. Each investigation assessed mindfulness programs that varied in duration, with times ranging from a couple of weeks to several months. The studies examined also focused primarily on high school and university aged young adults, and as a result, featured small, less varied sample sizes with most participants being disproportionately Caucasian females. Furthermore, a large portion of the studies failed to include a measurement for academic performance, and only hypothesized that by lowering stress, academic performance would improve. Future studies assessing the efficacy of mindfulness programs on test anxiety should target larger and more demographically varied samples as well as statistically show the causal relationship between stress levels and academic performance.

All in all, mindfulness research has a number of positive implications for future students, educators and society as a whole. With negative feelings emerging as early as age nine, math and science are two subjects notoriously associated with feelings of anxiety and poor self-efficacy (Griggs, Rimm-Kaufman, Merritt & Patton, 2013). Since self-efficacy promotes achievement (Griggs et al, 2013), these negative feelings associated with the subjects can have a profound effect on the individual's academic career and make it difficult for the student to succeed in educational settings. Ultimately, this could steer students away from pursuing a degree in science, technology, engineering, and math - fields that desperately need growth.

Incorporating mindfulness into education may reduce test anxiety associated with science and math. The research into this topic is quite incomplete though, and hopefully these findings will prompt others to expand investigation into the subject.

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***From the Field:  
Practical Applications of Research***

## **Practices that Address Bullying of Students with Disabilities**

**By Barry E. McNamara, Ed.D.**

### **One Small Case**

Michael, a student with a learning disability, was excited when he heard about the new program in his middle school to deal with bullies. He'd been a victim of bullies throughout his school years. They laughed at him when he read in class, they excluded him from projects, and they constantly called him hurtful names. In the past, he'd wanted to report these bullies, but he had difficulty explaining exactly what happened to him. Plus, it had to be in writing and that was one of his major weaknesses. He was hopeful that this new program would finally help him find the best way to deal with bullies. Unfortunately, that never happened. The district developed a school-wide program with very specific guidelines that included all the major components necessary for success. The only problem was that Michael's disability interfered with his ability to read and understand the materials. This was just another example of his expectations being defeated.

The nature of bullying and the proliferation of bully-prevention programs for schools is well-documented. Research indicates that the most effective programs are those that are implemented school-wide. Forty-nine states have passed some type of legislation that deals with bully-prevention in schools. Clearly, schools throughout the country are developing and implementing school-wide bullying prevention programs. Yet students like Michael continue to be bullied at an alarming rate, with some studies citing figures in excess of 50% (Rose, Monda-Amaya & Espelage, 2001; McNamara, 2013).

It may well be that school-wide programs cannot address the needs of specific subgroups of students. Swearer & Hymel (2015) note the complexity of the student variables across groups may limit the effectiveness of school-wide programs. They cite a number of things that "matter", including the type of a child's disability. Clearly, students with special needs are more likely to be bullied than their peers (Rose, Simpson, Preast & Green, 2015). Students who engage in bullying select those students who are the most vulnerable, including those with special needs. One issue about school-wide programs is that they are frequently inaccessible to all students. Therefore, students with

disabilities may never be taught how to deal with bullying. This article provides recommendations that enable schools to modify their school-wide programs so that all students can feel safe in school, including those with special needs.

### **Who Are These Students with Disabilities Facing Bullies?**

Students with special needs may have difficulty in the basic psychological processes that underlie learning, such as perception, attention, or memory. They may also have cognitive disabilities or speech and language disorders and may not have adequate social skills. Additionally, they will most likely perform below grade level in academic areas, especially language arts. Understanding how these difficulties impact on their performance, both in and out of the school setting, will enable school staff to be cognizant of their risks for victimization. The specific areas of difficulty and how they may manifest themselves in the classroom are listed in **Table 1**.

### **Ways to Include Students with Disabilities in an Anti-bullying Program**

Prior to implementing any program, it is important to assess the nature of bullying in your school. Typically, students fill out a questionnaire to identify how they feel about bullying in their school. Administrators and teachers can ascertain the frequency, places where it occurs most often, who students seek for help, and the like. It sounds simple. However, for students with disabilities, this very first step in the process can be fraught with difficulties. Some students may not be able to read it, some may not be able to attend that long, while others may require the use of a sign language interpreter, and still others may not have the intellectual ability to comprehend the questions. The task of modifying the entire questionnaire so that all students have access to it may appear insurmountable. However, with a systematic examination of the needs of your students and ways in which they learn best, you can make the necessary modifications in the administration of the questionnaire for most, if not all, students.

**Table 1. Areas of difficulties and manifestations are presented below.**

Area of Difficulty	Manifestation
Perception	<ul style="list-style-type: none"> <li>• Misinterpret visual clues</li> <li>• Misinterpret auditory clues</li> <li>• Misinterpret facial expressions</li> <li>• Misunderstand messages</li> <li>• Misread social situations</li> <li>• Cannot follow rules of a game</li> <li>• Appears confused, perplexed</li> </ul>
Attention	<ul style="list-style-type: none"> <li>• Impulsive</li> <li>• Focuses on irrelevant information</li> <li>• Appears to be ignoring others</li> <li>• Cannot stay on task</li> <li>• Makes comments that appear unrelated to topic</li> <li>• Loses interest in games and activities</li> <li>• Appears to be bored with others</li> <li>• Cannot maintain a conversation</li> </ul>
Memory	<ul style="list-style-type: none"> <li>• Cannot remember rules of games</li> <li>• Forgets what to do</li> <li>• Cannot retrieve anti-bullying strategies from memory</li> <li>• Lacks organization</li> <li>• Difficulty with multistep problem solving</li> </ul>
Cognition	<ul style="list-style-type: none"> <li>• May not realize he or she is being bullied</li> <li>• May not understand the nature of bullying</li> <li>• Cannot express him- or herself adequately</li> <li>• Misunderstand others' motives</li> <li>• Difficulty with receptive and expressive language</li> <li>• May appear to be naïve and becomes an easy target</li> </ul>
Speech or Language	<ul style="list-style-type: none"> <li>• May not comprehend what others are saying</li> <li>• Cannot express him- or herself fluently</li> <li>• May say the "wrong" thing</li> <li>• Gets easily frustrated</li> <li>• May be aggressive because he or she cannot use language adequately</li> <li>• Articulation problems may make him or her the object of ridicule</li> </ul>
Social Skills	<ul style="list-style-type: none"> <li>• Misinterprets social cues</li> <li>• Does not understand social situations</li> <li>• Does not interact or interacts poorly with classmates</li> <li>• Cannot read facial expressions</li> <li>• Hard time making friends</li> </ul>
Academics	<ul style="list-style-type: none"> <li>• Struggling in school</li> <li>• Poor grades</li> <li>• Frequent pullout</li> <li>• May need significant special education services</li> <li>• Difficulty with basic skills, that is, reading, writing, math</li> <li>• Lacks prerequisite skills in many academic areas, especially content areas</li> <li>• Cannot complete projects or assignments</li> </ul>

The modifications to the needs assessment must be collaborative. Administrators, teachers, and other personnel (reading, occupational therapists, and physical therapists, speech and language pathologists), special education teachers who have expertise in teaching students who are deaf or students who are blind, and school nurses should be included. Anybody who can provide information on what works best for the student should be part of the assessment.

Questions that guide this process may include the following:

- Can the student read the questions?
- Can the student comprehend the questions?
- Does the student have adequate motor skills?
- Is the student's vision adequate? Does he or she need special consideration?
- Does the child need an interpreter for the deaf?
- How long can the student attend for this task?
- Does the student have the intellectual ability to understand the concept of bullying or victimization?

The **chart below** provides some examples of the ways you can modify the administration of the needs assessment.

Area of Difficulty	Modification
Reading	<ul style="list-style-type: none"> <li>• Lower readability</li> <li>• Read to student</li> <li>• Use familiar pictures</li> <li>• Provide specific examples</li> </ul>
Listening	<ul style="list-style-type: none"> <li>• Provide a distraction-free environment</li> <li>• Use shorter sentences and single words</li> <li>• Check frequently for understanding</li> <li>• Use pictures with verbal input</li> </ul>
Attention	<ul style="list-style-type: none"> <li>• Administer it over time</li> <li>• Use a variety of people to present it, including parents</li> <li>• Administer it at the time of day the student is most attentive</li> <li>• Provide reinforcement for attending behaviors</li> <li>• Readminister it using a different language, examples, or cues</li> </ul>
Comprehension	<ul style="list-style-type: none"> <li>• Use a video presentation</li> <li>• Use a PowerPoint presentation</li> <li>• Employ concrete examples</li> <li>• Provide specific examples of bullying</li> <li>• Use real-life scenarios</li> </ul>
Hearing	<ul style="list-style-type: none"> <li>• Utilize an interpreter for the Deaf</li> <li>• Use a frequently modulated system</li> <li>• Administer it early in the day in short periods of time</li> <li>• Have a familiar person administer it (including parents)</li> <li>• Consult with an expert in the education of students who are Deaf or hearing impaired</li> </ul>
Vision	<ul style="list-style-type: none"> <li>• Use Braille</li> <li>• Provide large print</li> <li>• Utilize a text reader</li> <li>• Read it to the student</li> <li>• Check frequently for comprehension</li> <li>• Consult with an expert in the education of students who are blind or visually impaired</li> </ul>

Area of Difficulty	Modification
Handwriting and Written Expression	<ul style="list-style-type: none"> <li>• Use multiple choice</li> <li>• Have someone record the student's responses</li> <li>• Accept oral responses</li> <li>• Let the student point to responses</li> <li>• Have the student draw a pictorial response</li> <li>• Tell a story about the response</li> </ul>
Attention	<ul style="list-style-type: none"> <li>• Administer over short periods of time</li> <li>• Have multiple adults interview students over time</li> <li>• Provide verbal choices</li> <li>• Provide picture choices</li> </ul>
Hearing	<ul style="list-style-type: none"> <li>• Utilize an interpreter for the Deaf</li> <li>• Provide a frequency modulated system</li> <li>• Administer it early in the day in short periods of time</li> <li>• Have a familiar person administer it (including parents)</li> <li>• Consult with an expert in the education of students who are Deaf or hearing impaired</li> <li>• Use small group "discussion"</li> </ul>
Vision	<ul style="list-style-type: none"> <li>• Use Braille</li> <li>• Provide large print</li> <li>• Utilize a text-reading machine</li> <li>• Read it to the student</li> <li>• Check frequently for comprehension</li> <li>• Consult with an expert in the education of students who are blind or visually impaired</li> </ul>

The student's responses may also need to be modified. The **chart above** addresses those modifications.

### Modifying Instruction

#### Vary the Method of Presentation

Not all students learn the same way. You need to provide information to them based on their readiness, preferences, and abilities. Most instruction is multimodal (auditory, visual, kinesthetic, and tactile). For students with disabilities, their preferences may be more pronounced. For example, they may respond favorably if a scenario is on video (visual) and perhaps even more so if it can be acted out in small groups where they can move around the room and manipulate objects (kinesthetic and tactile).

#### Use a Variety of Reading Material

There are so many books on bullying available to teachers. However, you must make sure you have books on various reading levels. For those students who have visual impairments, you can acquire books in Braille, you can get audio books, and you can utilize the expertise of your district's assistive technology coordinator, who can help you acquire useful technology devices like a text reader that can "read" books for students. Many students who are Deaf have difficulty with reading material and may require lower-readability materials. This is certainly true for those students with learning disabilities, as reading disorders are one of the major deficits. Many teachers create their own books on social stories to depict instances of bullying. These are frequently used with students on the autism spectrum and students with intellectual disabilities. These can be enhanced with pictures of students and familiar places and situations. All of the above help reduce the problems associated with not being able to read or comprehend the printed page.

### Teach Attending Skills

Many students with disabilities will have difficulty attending to tasks. In order to capture their attention, use novel presentations. Vary the presentation, be enthusiastic, and keep the lesson short. Other techniques that are useful for increasing students' ability to attend are these:

- Keep the pace of the lesson moving.
- Provide frequent reinforcement for attending behaviors.
- Provide advanced organizers. "Today, we will be discussing bullying. First we will...then we will...and finally..."
- Focus on the most salient information.
- Avoid extraneous distractions.
- Provide opportunities for movement in the classroom.
- Check for comprehension frequently.
- Pair students with those who possess good attending skills.
- Work in pairs or small groups to keep them engaged.

### Suggestions to Teach Memory Skills to Students with Disabilities

Explicit direct instruction in memory strategies will increase the success of the school-wide anti-bullying program for students with disabilities. A well-organized, sequential presentation will help your students retain the content (input organization facilitates recall). The questions and prompts you use to check on understanding should be directly related to the presentation (referred to as cued retrieval). Therefore, if you discuss the six things a victim can do if he or she is being bullied, then your questions should be on the same topic, such as, "What are the things you can do if you are being bullied?" This way, you will be able to ascertain whether they were able to process the information. At a later date, you can introduce higher-level thinking skills.

Other ways to increase memory skills are listed below:

- Use mnemonics.
- Group information into meaningful categories (chunking).
- Employ frequent checks for comprehension.
- Work in small groups or pairs.
- Have students share their strategies for memorizing material.
- Use graphic organizers.
- Role-play bullying situations.

- Use simulations.
- Employ frequent practices.
- Utilize storytelling.
- Present information in game format.

### **Year Round Bullying-Prevention**

Dealing with bullying requires an on-going effort. Mishna (2003) noted that these students with disabilities are in "double jeopardy" in so far as they have to deal with their disability and at times with victimization resulting from that disability. At every school, leaders need to recognize that students with disabilities have a high probability of being victims of bullying. School leaders need a systematic approach to modify the school-wide anti-bullying program so that it is accessible to students with special needs. That is the only way that ALL students can attend school in a safe, kind and caring environment that is conducive for learning.

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- Barry E. McNamara, Ed.D., is an Assistant Dean of Education, and Professor of Education at Concordia College, Bronxville, New York. Parts of this article were excerpted from McNamara, B.E. (2013). *Bullying and students with disabilities: strategies and techniques to create a safe learning environment for all students*. Thousand Oaks, CA: Corwin Press.

## ***Book Review***

### **A Professional's Guide to Promoting Self-Discovery in Youth: A Creative-Based Curriculum**

By Lissa Masters, Ph.D., ATR

Charles C. Thomas LTD  
2600 South First Street Springfield, IL 62704, 2017

The foundation for this facilitator's guide is based on the author's deep love and feelings for the importance that art plays in creating awareness of life that surrounds us and that we may discover, examine, and enjoy. Art, in its many forms, is the vehicle used to express this awareness. The author's love for life's expressions through art is visible throughout the many activities and suggestions included in the curriculum lessons. If followed, these exercises provide a valuable and complete art experience for facilitators and students alike.

Make no mistake. This book is not a mere expression of love by the author for the subject matter. Rather, it is a well-organized program that is filled with activities and ideas that will help anyone who seeks to facilitate learning through a program of art instruction. The lessons and suggestions can be easily adapted to elementary, secondary, and adult instruction.

The book's curriculum is organized within four domains of self: Physical, Mental, Emotional, and Spiritual. Within each domain, there are 10 lessons, each pertaining to the discussion and activities of that domain. Each lesson contains facts about the domain, discussion questions, a self-inquiry page, creative activities, and additional ideas for exploration. These activities are

replete with suggestions to give students and their facilitators a keen understanding of how art can open their minds to unique design and domain connections of which they may not be aware.

Some of the more helpful points, in addition to the curriculum lessons, include the author's writing style which demonstrates clearly her love of the subject matter. Dr. Masters sees art as a pathway to enlighten and answer many of life's questions. The book's curriculum is preceded by an introduction and succeeded by appendix sections containing helpful information to be used by facilitators in the preparation of lessons. The appendix has a number of useful and easily reproducible forms for use in lesson presentation.

In sum, Dr. Lissa Masters has written a complete and excellent guide to present and enrich art instructional and therapy programs. The guide is recommended for students and facilitators alike.

Reviewed by James I. Brucia, Ed.D., retired Superintendent of Massapequa Public Schools, and Associate Professor of Educational Administration.



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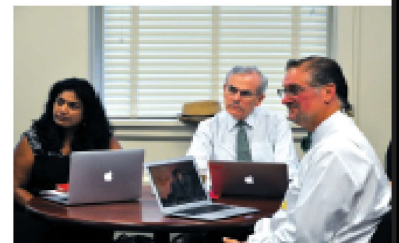
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