UNIVERSITY AT ALBANY
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Educational Psychology Students
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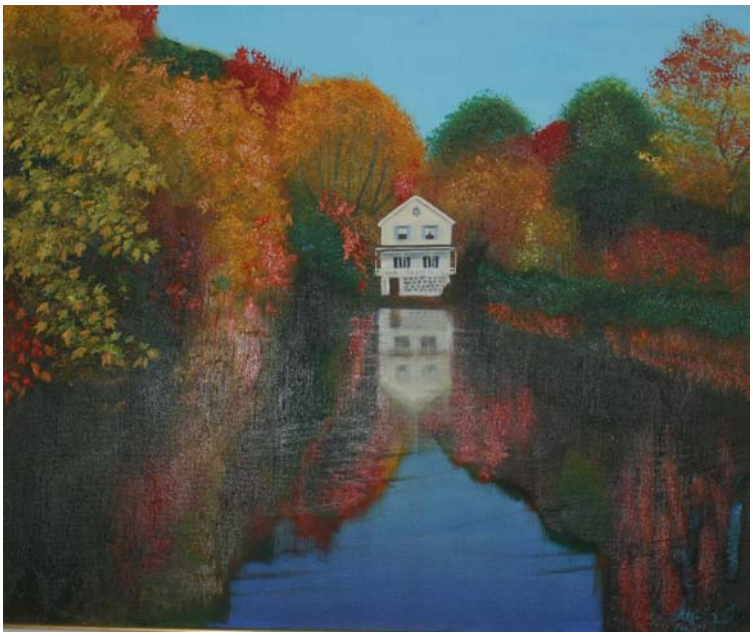
PROCEEDINGS OF THE FIFTH ANNUAL

EDUCATIONAL PSYCHOLOGY AND METHODOLOGY

STUDENT RESEARCH POSTER SESSION



Spring 2006
School of Education
University at Albany
State University of New York

Proceedings of the Fifth Annual Educational Psychology and Methodology Student Research Poster Session

edited by

Asil Ali Özdoğru *and* Joan Newman

May 10, 2006
School of Education
University at Albany
State University of New York

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1400 Washington Avenue
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Printed at the Rapid Copy Center of the University at Albany.

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I. PREFACE

This publication is the proceedings of the 5th annual Student Research Poster Session of the Division of Educational Psychology and Methodology at the University at Albany, State University of New York. It is a collaborative effort of the students and the faculty of the division. The proceedings showcase some of the research projects and the perspectives of the division members and people from neighboring academic units.

The division is placed within the Department of Educational and Counseling Psychology at the School of Education and offers only graduate degrees. In spring 2006, the division housed 12 faculty and 75 students –41 doctoral, 31 masters, and 3 certificate of advanced study students. The interview with Dr. Jack Rosenbach on page 13 illustrates the historical development of the division and the department.

The poster session was started 5 years ago by Dr. Joan Newman in order to provide a division-wide event where students can present their yearlong research projects to their fellow students and faculty. Each year it is organized by a student and celebrated as an end of the year event.

Acknowledgements

This report was printed with a funding from Graduate Student Organization of the University at Albany and made available online at the Educational Psychology Students Web site http://www.albany.edu/~edpsygso/events/2006.pdf "Your GSO funds at work."

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II. POSTER SUMMARIES

[1] **The Effects of Planning Instruction and Self-Regulation Training on the Writing Performance of a Young Writer with an Autism Spectrum Disorder**

Kristie Asaro and Bruce T. Saddler

In this single-subject design study, we examined if supplemental writing instruction in strategic planning helped improve the writing ability of a young writer with an Autism Spectrum Disorder. One fourth grade student with Asperger Syndrome who experienced difficulty with writing was taught a strategy for planning and writing stories and personal narratives using the Self-Regulated Strategy Development (SRSD) approach. After learning the strategy, the stories written by the student became more complete, longer, and qualitatively better.

[2] **Dusting off the Shelves: Attracting New and Diverse Family Audiences to a History and Art Museum**

Deborah A. Chapin

This is a summary of an evaluation of a history and art museum wishing to update their programming and expand their family audiences. Goals of the museum included making their permanent exhibits more family friendly, developing their special exhibits to increase family audiences, redesigning the Discovery Room into a developmentally appropriate space for children and parents that includes interactive activities tied to the exhibits, and changing the formal space into a more comfortable space for diverse audiences. Data collection methods consisted of two paper-pencil surveys, a focus group, an expert panel, and a series of video clips taken in a children's activity room. The museum needs to clearly define their goals, think about the needs of the children, families, and the neighboring community, and decide the role that they want to play in the community.

[3] **Children's After-School Activities as Developmental Contexts: A Cross-Cultural Comparison**

Joan Newman, Temi Bidjerano, Asil Ali Özdoğru, Çağrı Özköse-Bıyık, and Ching-Chen Kao

International comparisons in educational studies mainly look at academic outcomes such as achievement. It is also important to learn about children's activities after school as they play a major role in children's cognitive, emotional, and social development. The study examines the types of after-school activities children from three different countries are involved in during the after school hours. Ten and 11 years old fourth graders from Bulgaria (n = 312), Taiwan (n = 292), and USA (n = 196) were surveyed about their typical after-school activities on three given days of the week. A series of ANOVAs indicated that there were significant differences among countries in all of the activities except TV viewing and outing. Within country gender differences were also observed.

[4] **The Expression of Stereotypical Gender Characteristics through Play**

Joshua Blumkin and Dana Princiotta

The belief that children begin to exhibit stereotypical gender play around the preschool age was investigated across four dichotomous variables. Four preschool-aged subjects (two males and two females) were observed for two hours in a university daycare setting during free-time play. Two minute time sampling was utilized to survey each child across the different behavioral categories, which were predetermined and agreed upon by both researchers. The findings show that boys prefer to play with toys that are associated with their gender, whereas girls showed no gender stereotypical preference in toy play. It was also discovered that females prefer to be engaged in cooperative play environments. The findings were in agreement with prevalent theories that boys show a preference for gender stereotypical toy play.

[5] **Mohawk Culture, Behavior, Toxicant Exposure and Health**

Bita Behforooz, Lawrence M. Schell, and Joan Newman

Our previous study of 271 Mohawk adolescents (aged 10-16 years) found a small but significant negative relationship between their current PCB blood levels and two measures of long term memory functioning. This finding adds to existing concern about negative effects of PCBs on human physical and psychological development. The present study followed up 143 of the now young adult participants (aged 17-20), all of whom are members of the Mohawk Nation of Akwesasne, which is located on the St. Lawrence River. A National Priority Superfund site and two New York State Superfund sites are upstream of Akwesasne. PCBs from industrial effluent have contaminated the local ecology and entered the Mohawks' food chain. Serum levels of PCBs are assessed by congener specific analysis to allow determination of relationships with several components of early adult functioning, including the psychosocial outcomes of school behavior and performance, hyperactivity and attention, employment and adaptation to the community. We will also assess how measures of cognition and hyperactivity gained in the past study relate to the young adults' psychosocial outcomes. Grant: NIEHS ES10904-05

[6] **The Acceptability of a Three-Tier Response to Intervention (RTI) Model as an Alternative to Traditional Approaches used to Identify Students with Learning Disabilities: A Survey of Public School Teachers**

Matthew Raso

The current study investigated teachers' perceptions regarding the acceptability of traditional (i.e., IQ-Achievement discrepancy) versus alternative (i.e., Response-to-Intervention) methods used to identify students with learning disabilities. Elementary, middle school, and high school teachers completed a survey piloted in the current study, which contained case studies depicting the use of traditional and alternative assessment techniques. Although teachers report the continued use of the IQ-Achievement discrepancy approach as the primary method used to identify students with learning disabilities, an overwhelming majority of teachers surveyed (92%) either agreed or strongly agreed that the use of an RTI model was an acceptable alternative. The implications of these results are discussed given the most recent reauthorization of the Individuals with Disabilities Education Act (IDEA 2004).

[7] **Creativity during Adolescence**

David Yun Dai and Xiaoyuan Tan

This study is intended to assess adolescents' (including early adulthood) capabilities in scientific creativity. It also attempts to investigate students' personality and the environmental interactions which might account for inconsistency in creativity development since adolescence. 180 students (90 8th graders, 90 11th graders, and 90 undergraduates) and 30 teachers (10 from 8th grade, 10 from 11th grade, and 10 from college level) will be involved in this study. They will fill out several questionnaires. Their responses will be analyzed to study the correlation.

[8] **Affect and Problem Solving in Mathematics Education**

Mehmet A. Ocak

Research clearly shows that we have good reason to focus on affective variables in mathematics education. Research on affective issues has mostly looked for factors that are steady and can be measured by questionnaire. For example, research mainly did not focus on the emotional reactions of students on affect. Additionally, reform movements in mathematics education usually take a very traditional approach to affective issues. This review focuses on how affect influence learning in mathematics education. The purpose of this review is to examine the affective domains for problem solving in mathematics education. The question that motivates this review is how positive affective variables reflect higher problem solving achievement in mathematics education?

[9] **Portrayals of Differently-Abled Characters in Young Children's Literature**

Kristie Asaro, Mary Gozza Cohen, Katie Emerson-Hoss, Cecile Gleason, and Debi May

As society has become more concerned with disability awareness, one focus of research has been children's attitudes regarding disability and differences. One place children acquire information about differences is through children's literature. This study examined ten years of young children's literature (1996-2005) from the American Library Association's *Notable Children's Books for Young Readers* for portrayals of differently-abled characters. A total of 197 books were examined, with 41 books (21%) depicting differently-abled characters, including 14 books (7%) depicting differently-abled characters in the primary role. Findings indicated that characters represented a range of disability categories and that portrayals were largely positive. This demonstrates an increase in the level of representation of differently-abled characters in young children's literature; however, several limitations were noted.

[10] **Reflective Function: Lessons from the Field of Infant-Parent Mental Health and the Implications for Teachers of Children with Emotional Behavioral Disorders**

Katie Emerson-Hoss and Kevin Quinn

Reflective function (RF) can be defined as a fundamental human capacity to attribute intent and affect to the behavior of oneself and others. Recent research in the field of infant mental health indicates this function may be responsible for the well-documented transmission of attachment patterns from parent to child. The higher a parent's reflective function the more likely their child is to develop secure attachment patterns which predict a host of positive outcomes. This has particular implications for working with children with EBD who are more likely to have experienced attachment disruptions. In the fall, we plan to implement a reflective process using measures of RF with a multidisciplinary team working in a class of children with EBD.

[11] **Unobtrusive Measurements in Dance Assessment: A Literature Review**

Robin L. Akawi

Considering the large amount of participants in dance, there is a lack of research and literature available regarding assessment tools for dance classes. This literature review has three main focuses: (1) Unobtrusive measurement as an assessment tool in relation to dance, (2) research that addressed current assessment in dance, and (3) how it has been assessed in the past. Results indicate that unobtrusive measures of dance are more effective assessment tools for instructors, but not for the individual student.

[12] **Extracurricular Activity and Resulting Academic Achievement**

Robin L. Akawi

Is there a relationship between GPA and specific or all extracurricular activities, or does academic achievement depend on dedication to studying? Participants (n=229) included college students who had a larger span of years available for reporting a history of participation in extracurricular activities and GPA scores. The participants completed a questionnaire focused on extracurricular activity and GPA history over an 11 year time frame, as well as hours dedicated to both the activity and academic studying. The results showed a positive relationship in only three of 11 areas analyzed. The conclusion of this study is that overall, there is no significant relationship between participation in extracurricular activities and GPA, and that studying had just as much influence on academic achievement.

[13] **Evaluation of Teaching English Undergraduate Program in Anadolu University, Turkey: What Do the Graduates Do?**

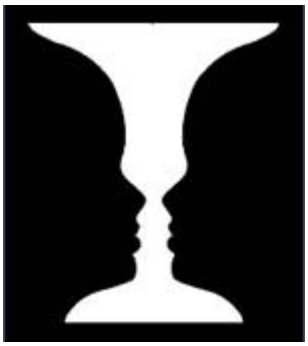
Çağrı Özköse-Bıyık

This ongoing research regards the Teaching English Undergraduate Program (IOLP) in Anadolu University, Turkey, which is a four-year undergraduate program affiliated to the School of Distance Education at the same university. The program started to train EFL teachers after the protocol between the Ministry of Education and Anadolu University in February 28, 2000, and it is equivalent to the other formal foreign language education programs in Turkey. The first two years of IOLP are carried out by formal (face-to-face) education followed by two years of distance education. The proposed study aims to investigate the effectiveness of the IOLP Program by conducting questionnaires and interviews on a specific cohort consisting of the first and second graduates of the program in 2004 and 2005, respectively. Data collection is in progress for the time being and the results are expected to be revealed by August, 2006.

[14] **Using Computer-Based Environments to Enhance Learning: A Literature Review**

Carla Corina

This study reviewed specific computer-based learning environments such as simulation and modeling programs, hypertext/hypermedia, and online collaboration tools in the context of constructivist learning theories. As processing tools, these environments can share cognitive load, provide problem simulations and hypothesis testing, help manage data, and aid in the learner's ability to self-regulate. Benefits include increased understanding of complex concepts, increased appreciation for science, and increased motivation and engagement. However, clear learner goals, self-regulation, adequate scaffolding for both technology and content, and time constraints are among the challenges to effective implementation in the classroom.



II. PERSPECTIVES

The Importance of Research Experience for Graduate Students

Joan Newman, PhD
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At the 50th anniversary of the creation of the Child Study Association of America, Arnold Gesell (1938) pointed to the link between 'climatic changes in community opinion' and the development of 'methods of American education and …changing attitudes to childhood'. (The community changes he mentioned ranged from the advent of bicycles and puffed sleeves, to such transitions as agrarianism to industrialism, or Calvinistic determinism to scientific rationalism.) In the almost 70 years since Gesell wrote, American society has continued to change dramatically, in association with changes in American education and attitudes to child rearing.

Psychologists have contributed to changing fashions in educational and child rearing. Parents have been considered harmful (Freud, passim), or crucial (Bowlby, 1951), or generally irrelevant (Scarr, 1992). They have been told that if they spare the rod they will spoil the child, that they should avoid being authoritarian and simply gently guide (Gesell, Ilg, & Ames, 1943), to waste no time in commencing academic instruction, to wait until the child is ready, to leave no child behind (Bush), or to leave childhood alone (Elkind, 1988). Students having reading difficulty have been subjected to colored eye-glasses, rolling on large balls, special diets, binding with duct tape, crawling, and eye movement training. Educators have been advised to catch the child being good (Kussin, 1996), to reward the child for being good (Reese & Lipsitt, 1970), and to avoid the costs of rewards (Greene & Lepper, 1979).

"By engaging in research as a student, you learn to evaluate the credibility of evidence by recognizing the quality of its research base, and the bases for decisions that are promoted as conclusions."

As society continues to change, some current educational approaches are likely to prove inadequate, or useless, or harmful. But the crucial word here is 'prove'. And that is where your graduate degree comes in, and why we emphasize engagement in research as part of that degree. As a possessor of a graduate degree, in your career you will be called on to recommend and implement approaches to enhance the development and education of children. We hope that in your graduate program here you have been taught to be responsible, responsive and reflective in your educational decision making. Educational policy should be informed by credible evidence, which in turn is informed by rigorous theoretical analysis (Hughes, 2000). By engaging in research as a student, you learn to evaluate the credibility of evidence by recognizing the quality of its research base, and the bases for decisions that are promoted as conclusions.

When president of APA, Robert Sternberg (2003) stated that 'research [in educational psychology] can potentially have more impact, both short- and long-term, than research in many areas of psychology'. However, he lamented that 'most of the decisions about education in this country… are made by people with little or more often no psychological training' because few psychology students are trained in educational psychology.

You, therefore, have the opportunity to contribute to educational decision making using the insights and skills accrued from your research training. Some of you will make such research contribution a major aspect of your careers. Others will become guardians of sound educational practice, recognizing and resisting unsupported fads and fashions.

As faculty in the graduate program in educational psychology, we are proud to help you build the research base of education.

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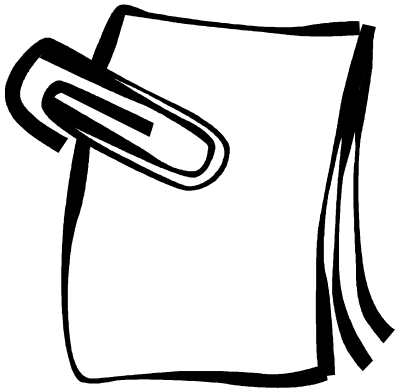

Brown Bag Seminar Series of the Department of Educational and Counseling Psychology

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Purpose

The "brown bags" are a series of informal research talks given every semester by EC&P faculty. Begun in 2002 at the request of new faculty interested in learning about each other's work, the primary goal of the lunchtime series is to familiarize graduate students and faculty members with research being done by their colleagues. Attending the brown bag lunches helps doctoral students make informed choices about research apprenticeships, prompts faculty to start up new collaborations, and allows everyone to learn about the latest research questions and methods.

Features

Brown bags are held 3 times a semester, always at lunchtime. Originally dubbed "brown bags" because people were expected to bring their lunches, the meetings now (usually) include food and beverages purchased with funds provided by the Graduate Student Organization. A typical brown bag involves a presentation by a faculty member, followed by questions and discussion. Although most presenters and attendees are from the EC&P department, we have frequent visitors from across the university.

"*Brown bags* help doctoral students make informed choices about research apprenticeships, prompt faculty to start up new collaborations, and allow everyone to learn about the latest research questions and methods."

Future

The brown bag series has been well received and will continue indefinitely. Presenters and schedules are announced at department meetings and posted in hallways and online. We hope you will join us next semester—a brown bag is optional.

A Tribute to a Former Colleague

Robert F. McMorris, PhD
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Once upon a time a young lady joined us in Ed Psych. Although she was young –well, she was old enough to vote– for senior class president- she did join us, in more ways than one. She had the enthusiasm, the twinkle, of youth, blended with the maturity to understand what needed to be done and the follow-through to do it.

Some of the ensuing days were more difficult than others, like the day her daughter Madison threw up on both of them on their way out of the house, then she spun her car on the ice near home, faced 9' drifts coming down the Northway, waited in a month-long traffic jam on the Thaddeus Kosciuszko Bridge, and then found the Xerox machine with its feet in the air.

Even on such days she kept her sense of humor and treated everyone with respect, warmth, and sometimes even ingenuity. Everyone included not only faculty, staff, and graduate students but even younger students, the UPS man Brian Brown, and so on. For example, she even signed up a precocious pre-scholar for a developmental psych course. And countless times we've seen her get up from lunch to help someone.

"*Anne Marie* kept her sense of humor and treated everyone with respect, warmth, and sometimes even ingenuity."

I mentioned that she joined us, in more ways than one. Anne Marie knows, cares and along with Sheila and Joan, Sue, and Debi, serves with a gentle, humane touch that sets a great example for the rest of us. We are a better community because of her. (And don't even think about what the control group might have been!)

A New Yorker cartoon shows a boy working on a coloring book and a dog circling him. A parent says to a visitor- "Ever since we got the Border collie, he colors within the lines". Anne Marie, you've not only helped us stay within the lines when necessary but even to find the lines to begin with. Thank you.

Dr. McMorris reading his tribute to Anne Marie Corso, former division secretary, on her farewell party on November 16, 2005. Standing from left to right: Dr. Dianna L. Newman, Merry L. Staulters, Drs. Jane Domaracki, Donna M. Burns, and Joan Newman.

History of the Educational Psychology at the University at Albany: An Interview with the Founding Faculty Dr. Jack Rosenbach

Asil Ali Özdoğru*
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A common past is one of the major elements of social groups. Shared histories play essential roles in the establishment and the continuation of a sense of community within any organization (McMillan, 1996). Besides creating a shared emotional connection among members, sense of community is associated with higher rates of member participation and contribution (McMillan & Chavis, 1986). As social organizations, educational institutions and academic units can benefit from a productive sense of community formed among their members.

The recent Reading Project of the University at Albany was aiming at bringing student, faculty, and staff "together for reflection, analysis, and debate, reinforcing our shared enterprise as an intellectual community." (Herbst, 2006). This interview was also conducted in order to provoke and strengthen the sense of community by emphasizing a shared history among the members of the School of Education in the University at Albany.

A Brief History of UAlbany

The University at Albany has a long history of institutional evolution starting with its establishment in 1842 as the New York Normal School of Teachers (Birr, 1994). It was New York State's first higher education public institution. In 1914, it was transformed into New York State College for Teachers. After its realization in 1948, State University of New York system included the State College for Teachers as one of its university centers in 1962. The State University of New York at Albany then was renamed as the University at Albany.

Being one of the ten schools and colleges of the university, the School of Education is the oldest public school of education in the New York State. The school consists of four departments; (1) Educational and Counseling Psychology, (2) Educational Administration and Policy Studies, (3) Educational Theory and Practice, and (4) Reading.

This interview with Dr. Jack Rosenbach traces back the early days of the Department of Educational and Counseling Psychology and its development. We had a meeting with Dr. Rosenbach in late February of 2006 at his house located in the suburbs of Albany. In our over an hour audio taped conversation, we went over the early days of School of Education, the changes in departmental structures, and Dr. Rosenbach's insightful observations.

Asil: When did you come to Albany?
Rosenbach: I came from the Buffalo, New York area, in the summer of 1961. Actually, not the city of Buffalo, I lived in one of the suburbs. I received my doctorate from the University of Buffalo, which was a private institution. It later became SUNY Buffalo.

Asil: What was your field of study and who did you work with?
Rosenbach: I studied psychology and educational psychology at the university. I also earned a degree in school psychology. When I first got into education, I taught elementary school for two years. Then I took an assistant professorship at Buffalo State College. I worked as a school psychologist for the campus school and taught classes for the college. After a year, I left the

* Special thanks to Drs. Joan Newman and Jack Rosenbach for their careful review and editing, and to Elaine Cheung for her transcription of the interview.

college for a position as a school psychologist in a suburban system. I continued my graduate studies, first on a part-time basis then full-time, when I took a leave from the school. When I finished my degree in 1961 I began to look for other opportunities. At the time, Albany was in transition from a teachers college to a university. It had been a very high caliber college that offered BA and BS degrees, with a major in secondary teaching. I took the job, in part, because I knew it was soon to become a university. It was kind of a fun notion. A friend, who had been a doctoral student with me at Buffalo, had come here a year earlier.

He was Al Cali, and he specialized in educational administration. At that time, the first doctoral program to be approved was in Ed Admin. Then I was asked if I was interested in a job here. I was told that the university was interested in having me do three things: initially, to work as a research psychologist with the doctoral students in administration; second, to develop programs in educational psychology; third, to develop programs, in cooperation with the psychology department, in school psychology. At first I was very active in the doctoral program in administration, the only such program on campus. It turned out that I chaired the first doctoral dissertation to be completed here.


Dr. Jack Rosenbach

Asil: It was in Educational Administration?
Rosenbach: In Educational Administration, yes. The first summer here I taught a course in research. One of the students in the course, Jim Conway, was a doctoral student. At the time I had been doing some work in social psychology, with particular interest in the work of Milton Rokeach on dogmatism. Jim used that work to develop a dissertation proposal. We spent a lot of time together and he finished his thesis in a relatively short time.

For the next six or seven years I worked with a number of administration students in classes and on dissertations. At the same time I was heavily involved in planning programs in educational and school psychology. When I arrived, I was the only faculty member to have been trained as an educational psychologist, so I was given the responsibility of hiring faculty. In the period of 1961 to 1970, we went from one to about 20 faculty. Some are still here. Bob McMorris was one of the second or third persons whom we hired. After that Bob Pruzek was among the early hirees, as was Frank Vellutino, in the Study Center. They are the only ones remaining of the initial group of 15 to 20 faculty. We began to plan a doctoral program, and a master's program, which we implemented within about 4 to 5 years. The first doctoral student was admitted in 1966-1968. And the first degrees were granted in the early 1970s. We also developed a certificate program, of 60 hours, in school psychology at the same time. Our first school psychology students were admitted at about the same time as the educational psychology doctoral students. The first doctoral program was an Ed.D, but after 6-7 years, we decided to turn it into a Ph.D. The program wasn't changed; it was basically the same as before. In the next few years, we added faculty. We had faculty come and go, but a core faculty stayed in place for number of years.

Asil: Were educational psychology and school psychology two different departments in the early years of School of Education?
Rosenbach: Well, they were two separate programs; they had very similar coursework. And I directed both of those and chaired the ed. psych dept. I was also chair of the school psychology group, which had 2-3 from the psych dept. and 2-3 from ed. psych. At that point, the school psychology program was a 60-hour certificate program, and it followed much of the same outline as the 60 hours that the doctoral students in educational psychology took. They took many of the same courses in statistics, measurement, learning, development, although more from the psych department because the psych dept was involved in it.

Asil: Now we have the Department of Educational and Counseling Psychology consisting of separate divisions like educational psychology, school psychology, special education, and counseling psychology.
Rosenbach: For many years, in the mid 60s until mid 90s, 30 years, special education was in the edpsych department. We hired Ollie Nikoloff from Buffalo State. He headed up Special ed. Counseling was a separate department. We were called Educational Psychology and Statistics, for 30 years or more. I retired in 1996, and after that it was re-organized. School Psychology was administered separately even though I did both jobs for many years. When I came the programs in school psychology were administered through graduate studies. Because of this, I was responsible to two different administrators. For Ed. Psych, I was working with the dean of the School of Education. And for School Psychology, I was working with the vice president for graduate studies. It was set up that way so school psychology would truly be an inter-disciplinary program, run between the two schools of Arts and Sciences and Education. It lasted many years, I don't know exactly when, but in the late 80s, we split away from the Psych department. School Psychology became more a part of the School of Education. One of the major changes we made was in the 1980s, putting forth a PsyD for school psychology.

Asil: Can we say that you started the School of Education?
Rosenbach: No. I was part of it, because there was no School of Education when I came here, and things evolved in interesting and informal ways. When I was hired, I was given the responsibilities of developing programs in school psych, in ed psych, and working in the department of administration. The first 7, or 8, 9 years I did all three, but I gradually moved out of the administration department. When I came here, there weren't any Schools. And because I was here, at the time, I became the chair of the Educational Psych department. I was responsible for the hiring. So for 12-15 years, I had the responsibilities of finding people, developing programs, writing, and on and on, which was very exciting. And the graduates were doing very well. The names of the departments were often changed. Originally, I had intended to call our department "educational psychology and measurement", but the dean of graduate studies thought that the word "statistics" would have a greater appeal, that people would be more impressed if it is called "statistics" rather than "measurement". I think that was a misnomer, but I guess it sounded more mathematical.

Ed. Psych and Statistics became the name of the department. It stayed that way until the merger with Counseling Psych about 8 or 9 years. For years we were one of the largest graduate departments in the entire university. I don't know if it is now, but we were then. We ranked among the highest in graduate enrollments throughout the entire university. And doctoral enrollments were among the highest. We were one of the stronger/larger departments in the university for many years.

Asil: Do instruction specialists moved out and formed the Educational Theory and Practice department?
Rosenbach: They never worked with us as a department. When I came, there was a campus school, called the Milne school, which was in the downtown campus. It was a secondary school, used as a demonstration and practice school for teachers. A number of the faculty were in secondary education, and gradually became integrated into what became the School of Education. They taught courses in method of teaching, methods of math, English methods, foreign language methods; we had a business group. Campus schools were very common across the country. But for a number of reasons, including diversity, and budgets, these schools were closed. The first department with a doctoral program was the department of Educational Administration. The Department of Educational Psychology and Statistics was one of the next. We had people who

specialized in curriculum development, and there was a department of Curriculum and Instruction. We had other people who were teaching philosophy of education. And they had a small department. A department of Reading was created, and at one time, a department of Educational Media.

Policy. Something about policy. Educational policy and procedures or something like that. The Curriculum department split eventually to basically those who handle curriculum and those who did instruction. And that kind of went back and forth. At one point, they had a huge department, which included just about everything except Educational Psychology, Reading and Guidance called EPPP (pronounced 'eppy'). Which was Educational Policy Practices and… something else. Procedures. That lasted a few years, then was dissembled and went back to smaller departments. The groups were merging and remerging and renaming. One time they were called Educational Theory and Practice. As the years unfolded, the School of Education grew, became more diverse. New people came in, new deans came in and decided to reorganize until finally, I retired in 1996. That was just before the merging of Counseling Psych and Educational Psych. I hadn't been around enough to know just what happened.

Asil: Was Counseling Psychology under the Psychology department before?
Rosenbach: They started out as a department. One thing you have to remember, so much of this was an out-growth of a teacher's college. In counseling, that group grew out of what was called secondary school guidance. Eventually that grew into the department of Counseling Psych. Their primary function early on was preparing secondary school counselors, then they got into preparing higher ed. people who worked in student personnel. They added new faculty and became more oriented toward counseling psychology, which is similar to clinical psychology.

Asil: How long you served as the chair of educational psychology?
Rosenbach: Originally, probably around 15 years or something like that. And I served as the director of School Psychology for about 20 years. Then I chaired the Ed Psych dept again, in the late 1980s and 1990s. I was the original chair, and I was one of the last chairs, of the department of Ed Psych.and Statistics.

Asil: And you said you were in charge of hiring faculty, like Dr. McMorris and Pruzek.
Rosenbach: Yes, even probably had something to do with hiring Dr. Newman. Although it wasn't so much hiring, we moved her. She had worked at the Study Center with Frank Vellutino. When I came, the college was downtown. And there were only a couple of 100 faculty.

Asil: When did the university move to uptown campus?
Rosenbach: We moved up here in 1968. The School of Education was the first academic unit to move. From '61 to '68, things were exploding. We were teaching all over the place. Teaching in churches, taught in an auto supplies store, etc. There was not enough room; most faculty had to share an office with someone else. We didn't have our own secretary. We had a secretarial pool, which served the entire college. Eventually as we formed departments, we were able to hire departmental secretaries. Things changed very rapidly from 1961-1970. There was an explosion of numbers. I started as one educational psychologist. By 1970 we had something like 20, and we had a number of doctoral students and a number of masters students, with programs in school psychology, educational psychology, special education. We still hear from our early graduates, they're still up and around. Sadly, some of them are deceased.

Asil: UAlbany transformed from a teacher's college into a university. Is that the same time we became a part of the SUNY system?

Rosenbach: Oh, they were always part of a state system. This college of Albany has a very proud history. It was initially started in the mid 1800s. Rosenbach: As a college to prepare teachers. For many years, I can't tell you when it started, but it was the only college in upstate New York that offered a bachelor of arts degree. All the other units were originally normal schools - they then became 4-yer colleges. All these colleges prepared elementary teachers. They would also have a specialty: Oswego, Fredonia, Buffalo State College (not University at Buffalo), Plattsburgh, Potsdam, New Paltz, and Cortland. Brockport, for example, not only prepared elementary ed. but they also prepared physical ed. teachers. Fredonia and Potsdam, also had programs in music education. Geneseo had programs in speech pathology. Oswego was noted for vocational education. But the only one that offered a regular 4-year bachelors program in Arts & Sciences was Albany, outside New York City. At that time, the 2 major tuition-free institutions were the City College of New York, CCNY and Albany. As a consequence, Albany for years attracted the brightest of the upstate students. They were valedictorians and salutatorians. So they had a very strong undergraduate academic program, and they had some of the brightest students, because this was the only place they could go in the state, outside of New York City, to get an Arts and Sciences degree. Otherwise they would have to settle for elementary education. So when I came in '61, the College had a very strong tradition of academic excellence and quality. And many of the faculty were excellent teachers, and good scholars. It was a relatively smooth transition in some ways from the college to the university. That was an important part of it because Albany had for years attracted such high quality students. It helped us a great deal in the early years of our doctoral program because many of the students we recruited came right out of Albany. They were excellent students; we had them in our classes and we were able to recruit many of them. It's unfortunate that people don't realize that Albany had such a tradition of excellence in the academics. It was much easier for this place to attract, recruit doctoral students, than it would be if you were to expand some other institutions. I recall that some of the first doctoral students we had were undergraduates we had in our classes, while others were coming back for summers to take courses for certification. We had a running start that would've been very difficult if we had not had that tradition of excellence.

"The college had a very strong tradition of academic excellence and quality. And many of the faculty were excellent teachers, and good scholars."

Asil: What about undergraduate programs? Now we don't have undergraduate education programs in the School of Education.

Rosenbach: Well, that's one of the things that happened. It became a very contentious issue in the late 70s, when colleges and universities were facing budget problems. I was on a council that dealt with priorities and in charge of trying to eliminate programs. At that point, the president, who only stayed for a couple of years, planned an agenda eliminating all educational programs except for graduate programs. He planned to get rid of all teacher programs. I think I was moderately successful in changing some minds, because I pointed out to the council that the excellence of the undergraduate program was enhanced by the fact that many of our graduates stayed in the state and became teachers. And then many became administrators. I knew this since I came from a town outside of Buffalo where the superintendent of the schools was an Albany State graduate. I also worked with the director of pupil personnel services who was an Albany graduate. Every year that they had an opening, the first place they would go to for teachers was Albany. In return, they would encourage the best students they had in high schools to come to Albany. So when we had on the agenda that the president wanted to eliminate the teacher ed., I made the argument that we had excellent students here because many of the graduates of the

program became important people in the public school systems. In turn, they were encouraging their best students to come here. Turning our backs on them would have been a major mistake. Now 30 years later, things have changed, recruitment changed. But for a number of years, that reputation allowed the university to maintain a high level of academic rigor by getting the best students that they could from the state. But then things changed. Now tuition has gone up; when I came, it was free. Until the 1970s, there was no tuition. There were fees for books and other miscellaneous charges, and dorm fees but there was no tuition.

Asil: When you look back to the 1960s or 70's, what kinds of how similarities and differences are there in terms of faculty services and responsibilities?
Rosenbach: Well I think there are different dimensions. One is age. When I came here, I was about 30 and the people we hired were mostly in their 20s and 30s. The doctoral students were also in their 20s and 30s so there was closeness –pretty much from the same generation. Many of my best friends, over the years, have been doctoral students I worked with in educational administration and educational psychology. We as a faculty had a very close relationship with the students. We used to go to a place up in the Adirondacks that the university foundation owned. We went there once or twice a year for a retreat. There was no electricity – we used generators – and it was cold. But we were close –lots of parties– just a nice, close relationship. But as the faculty stayed, they got older, but the students stayed at about the same age. I can say with modesty, we were a very student conscious group. The faculty didn't see themselves as over the students, but as colleagues; we call it a process of socialization. In other words, to come in, get a doctorate, and become a scholar, there's more to it than simply taking classes and reading books and gaining more skills, it's also developing a set of attitudes and values, encouraged by the faculty and students working closely together. Joan Newman was very good at this. Most of the faculty and graduate students talked to each other by first name. I was Jack to them, I wasn't Dr. Rosenbach or Professor Rosenbach. We talked to them informally, we went out together, we played poker together. We held to the idea that we were preparing people through a socialization process as well as through instruction. The late 1960s and 70s, however, were, in some ways difficult times, in large measure because of the Vietnam war. All kinds of things, drug use came up, and there were various disturbances on campuses. These were really difficult days for many to deal with. We had student protests, although most of our doctoral students stayed apart from them, some didn't. But it was a difficult era to go through. I think we maintained a kind of collegiality with the students. And I still think about and look back to the students I knew, have known, and grown close to. I don't think they all like me, but I got along with most of them, and I think I did reasonably well. Working with them goes side by side, as well as having high expectations for a standard of work that they would do. How has it changed since, I don't know, because I haven't been there for several years. You know it and I don't. I know what it was like when I left; pretty much we had the same thing. I was disappointed to hear that the department had been taken over into the counseling psych. group. The Ed. Psych department for many years was a proud, effective organization in its own right. They are now merged with a group with which they don't have much in common.

Asil: How are you utilizing your days of retirement now?
Rosenbach: I did some adjunct teaching. I adjuncted for a while at SUNY. I adjuncted at Saint Rose where my wife teaches. And I taught over at Russell Sage in Troy. Up until about 2 or 3 years ago, I guess it was certain age… I should've done more serious writing. So I'm picking up in writing things that I'm interested in. I regret that several things I had in mind, I didn't get around to doing. In fact, most of my research in the first years was with doctoral students. And when I was administrating programs, I was teaching and working with doctoral students. So that a lot of things that I would like to have done, I worked out in conjunction with papers and

dissertations with students. One of the more interesting studies, you probably might have seen it, was with Joan Newman.

That was one of the things that I felt was fun to do. I enjoyed that very much. We were doing research on whether IQ has changed over the years… one of the last things I had at the university when I was teaching was a seminar with doctoral students. One of the goals that I had was to see if we could come up with behavioral indicators of any change in the average intelligence of people. Regardless, despite what the IQ scores might be saying, could we find evidence that there's been a substantial change in…retardation, levels of expectations, reading materials, and on and on. And we couldn't find anything. But there was something very…strange that comes from it. The one study I did do in the last few years was using group tests. In 1990 we administered an IQ test that had been developed in about 1930 to 5th graders in school, there were about 160 of them. We used 3 schools, and each school gave a different intelligence test. We had the kids score on their school administered intelligence test and from a 1930s IQ test, the Pintner. We also had standardized achievement tests. We found that there was no difference in the scores of the Pintner test and the other three contemporary tests. The 1930 test was giving the same scores as the 1980s test there. Interesting enough, the correlations with the tests were the same, in other words, the Pintner, the 1930s test, correlated at the same level a the three different tests that were given to each other. And interestingly enough, the correlations with the achievement tests were the same. The test developed in the 1930s was giving the same information as the test that was developed 50 years later. I thought that was a fascinating result.

Asil: Lastly, what do you suggest or recommend to new students or faculty in the School of Education?

Rosenbach: I think social aspects of the community are important. I think that certain things have changed, obviously. And you can't do much about it. One of the changes I saw over the years was that colleges and universities, particularly major universities, were becoming more and more like corporations, corporate structures. I started at a small private university, University at Buffalo before it was part of the state system. They had a tradition of faculty governance; it was very strong on academic freedom. And that's where I learned the importance of socialization. The faculties that I worked with were very much part of my day. We went out together, we played cards together. It was a very important socialization…

I worked with a number of professors at the university. Some who were most influential were: Richard Bugelski, from the Psychology Department, who was a well known figure in experimental psychology and learning theory. I studied with him both as an undergraduate and graduate student; Leo Goldman, a counseling psychologist directed my masters and school psychology programs; S. David Farr, who specialized in measurement and statistics was my primary doctoral advisor. I was also fortunate, when I was in the Air Force, to be assigned as a psychological research assistant to a unit which included such respected psychologists as Robert Gagne, Clyde Noble, Ed Bilodeau, and Malcolm Arnoult, among many others. This was like a graduate school experience.

When I came to Albany I found it had a proud tradition as a 4-year liberal arts college. But unlike the University of Buffalo, it was pretty much run by the president, with little emphasis on faculty governance. But over time, as we moved to become a university, faculty participation and governance became recognized as critical to its development.

I served on just about every committee and council that they had. But starting mid 70's, 80's money became more of an issue. The faculty that we were hiring were not socialized as I had been. They came through as more of a corporate creature of grant writing. They were more

concerned about getting tenure, which is important. But they didn't seem to have a real feeling about the fact that faculties are the basis of the university. The faculty makes things work, not the president, not the deans. And that's what a university is all about. These younger people, fine people, were so concerned about themselves that they did not seem to have much concern about the university as an institution. And they were willing to let the institution take over what they did rather than assert themselves. I think that happened in the 70's and 80's, and it got worse. I was very disappointed to see that we had lost a lot of collegiality and the university was taking on a corporate image –now, money making, grant writing, what have you. I guess you have to take it as a challenge and spend time with yourself and project who you are. Other than that, I don't know that I can say what individuals should do. It is a changed environment from what I had to deal with as a doctoral student in the 1950s. 15 years ago, it changed a lot. I think faculty have turned inward and have been less concerned about being part of the governance structure.

Asil: Thank you very much for sharing your time and valuable memories.
Rosenbach: My pleasure.

Buildings of the downtown campus: "The new Milne School is to the far left, Page Hall has the columns and the tower, and Richardson Hall is just to the right of Page." (Birr, 1994, p. 71)

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IV. STUDENT ARTICLES

Dusting off the Shelves: Attracting New and Diverse Family Audiences to a History and Art Museum

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This is a summary of an evaluation of a history and art museum wishing to update their programming and expand their family audiences. Goals of the museum included making their permanent exhibits more family friendly, developing their special exhibits to increase family audiences, redesigning the Discovery Room into a developmentally appropriate space for children and parents that includes interactive activities tied to the exhibits, and changing the formal space into a more comfortable space for diverse audiences. Data collection methods consisted of two paper-pencil surveys, a focus group, an expert panel, and a series of video clips taken in a children's activity room. The museum needs to clearly define their goals, think about the needs of the children, families, and the neighboring community, and decide the role that they want to play in the community.

The purpose of this paper is to summarize the evaluation of a history and art museum wishing to update their family programming and expand their family audiences. Enhancing their family programming meant creating a museum environment that was more family friendly, linking gallery exhibits to family activities, and constructing more developmentally appropriate children's activities in the Discovery Room, an interactive room especially designed for children and their parents. The museum also hoped to increase the radius of family membership across counties, as well as develop relationships with families of more diverse cultures in the neighborhoods immediately surrounding the museum.

Review of the Literature

Six years ago, as we entered the new millennium, we were reminded of the many changes that we had undergone in the last century (Lahav, 2000). Some of the more dramatic changes had to do with the roles of men, women, and families, the community, work, leisure time, and technology. One ever-changing institution has been education. With technology as it is today, the flood of information on the Internet and the airways brings a new population of "insatiable and hungry" learners, both children and adults (Lahav, 2000, p. 20).

Turning our attention to museums and galleries amidst this inundation of information, we note that many cultural institutions are centrally located in larger cities. As inner cities become populated with more culturally diverse groups, arts organizations, wanting to respond to their surrounding populace, have had to ask themselves, "where do museums and art galleries fit into this complicated pattern of life changes, learning, and cultural experience?" "What is the place and significance of a museum in the twenty-first century" (Lahav, 2000, p. 21)?

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Evaluation of museum questions such as these is challenging at best. Constructing a picture of who are dedicated museum members, who are first-timers, and who are potential visitors is difficult (Lahav, 2000). Deciding on strategies to encourage first time visits is complex and return visits is even more complicated. Considering approaches to encouraging family audiences to engage in exhibits that were designed originally and primarily as adult "looking" experiences is certainly not without effort. Making a place of dominant culture history and art less exclusionary and more appealing "to a wider and more diverse audience that parallels other social institutions" (Hooper-Greenhill, 2004, 152-153) is probably most problematic of all.

While museums are eager to entice families and attract new groups, they are hesitant about making major changes to their collections and displays. Even being willing to make such changes is often hindered by financial difficulties. The challenge therefore becomes how to make existing collections more appealing to families and diverse cultural groups. There has been little research to date on how to go about making these changes. Being unsure about where to turn for answers, evaluators are drawing upon the intuition of museum membership, the expertise of people from other arts institutions, and the insight of neighbors of the museum itself on how to meet these new challenges. The following paragraphs describe the evaluation of a history and art museum with these objectives in mind:

1. Make permanent exhibits more family friendly
2. Develop the special exhibits and special events to increase family audiences
3. Redesign the Discovery Room into a developmentally appropriate space for children and parents that includes interactive activities tied to the exhibits
4. Change sterile, formal space into a more comfortable and friendly space for diverse audiences.

Method

Methods of data collection in this evaluation took the form of two paper-pencil surveys, a focus group, an expert panel, and the viewing of a sampling of video clips from the children's activity room.

Participants

Two groups of people were surveyed with two different paper-pencil surveys. One group of people was 25 visitors across several free family weekends in conjunction with special exhibits and events. The other group was comprised of 18 parents that visited a library fair at a nearby city library that were assumed to not visit the museum.

Participants for the focus group were solicited by letter of invitation sent to museum members by the Department of Education at the museum. Approximately 300 letters were sent out and 12 members responded. Ten museum members participated in the focus group. Expert panelists also were selected by the Department of Education at the museum and included specialists and authorities in museum technology and administration, art, and child development. Fourteen invitations were extended to various experts in the region and seven experts participated in the panel.

Children and parents or grandparents interacting at the various existing play stations were the participants in the video clips filmed by the surveillance cameras in the Discovery Room on free family weekends and other special event days. These participants were aware that they were being filmed. A random sample of clips were viewed for the evaluation using the random

numbers table to view 72 five minute segments of clips from the over 360 hours of videotapes from the Discovery Room.

Instrumentation

The paper-pencil survey given to visitors on free family weekends consisted of questions regarding number of visits to the museum, preferences among the permanent exhibits, special exhibits and special free family weekends, and their children's preferences of activities in the Discovery Room. The paper-pencil survey given to parents at the nearby public library consisted of questions about how they spent their free time. Participants were asked what cultural activities they had participated in during the past three months, how much money they were willing to spend on a family activity, what types of activities they liked to engage in at home, how they learned about family cultural activities, and whether they had heard of and had they visited the history and art museum.

A set of eight questions were created prior to the focus group as a means to eliciting data from the group participants. Questions began by establishing the length of membership of each of the focus group members and a brief discussion about their interest in the museum. Focus group members were asked to discuss their opinions of the permanent exhibits first, then of the special exhibits. Then, they were asked about the special family events. Focus group members gave their thoughts about the Discovery Room, offering suggestions for improvements to make it more hospitable and useable for children and their parents. At the end of the focus group, they were asked what they would like to see more of at the museum and what they would like to see less of.

Procedure

The evaluation started in the late Spring of 2005 with a series three different free family weekends at the museum. These family weekends were each comprised of a special exhibit, sponsored by various commercial organizations in the region, with the hopes of drawing new family audiences to the museum, and accompanied by an art activity in the art studio next to the Discovery Room. Paper-pencil surveys were distributed to parents as their children participated in the art activity.

The focus group was held in the Fall of 2005 at the museum and was facilitated by the evaluator. A co-facilitator and three note takers were present and the focus group was audio taped for documentation purposes. The expert panel was held in December of 2005 at the museum and facilitated by the evaluator. Two note takers and a co-facilitator were present and the panel was videotaped for documentation purposes. The expert panelists met in the morning for a welcoming session and a brief orientation. They were provided with a walk-through checklist that contained guiding questions to help them concentrate on the specific issues of the panel. Panelists spent about 65 minutes moving through the museum, using the checklist and making notes. The panel reconvened for discussion of their findings.

Findings and Recommendations

This project is near completion. Data were aggregated across modes of data collection and initial findings are presented below for each objectives.

Objective 1. Make permanent exhibits more family friendly.

Make more family friendly. Participants indicated that improvements to exhibits to make them more engaging for young children included having a scavenger hunt or adding tactile and interactive activities that are tied to the exhibits. Participants thought that the museum could put two or three questions near different objects around the galleries to increase family interest and

involvement. The questions should be of interest to children and families, be thematic in easy to read text, and appeal to a broad audience. They suggested that the questions and signage include children's images. The museum could provide Family Stations in each gallery with hands-on activities and "Please Touch" signs for children.

Change or rotate exhibits for repeat visitors. Overall, the participants that visited the museum enjoyed the permanent exhibits, but agreed that these exhibits should be changed, rearranged, and/or updated every couple of years or so. Participants also noted that there should be a better balance between the history component and the art component of the museum.

Unique exhibit. Most of the participants agreed that the exhibit of a unique culture from another part of the world, while not really fitting into the overall theme of the museum, was really a draw for the museum and worked to get people in the door. Once visitors were inside the museum, they would find the other exhibits to be enjoyable as well. They noted that this exhibit was in a room that was really too small for it and encouraged the museum to move it to a larger space.

Objective 2. Develop special exhibits and special events to increase family audiences

Variety. The majority of the participants agreed that the special exhibits and special events offered a nice variety for visitors.

Hours and cost. The hours of some of the programs are weekdays from 1:00 to 4:00 p.m. and the cost is $8.00, restricting attendance for many parents and children. Many parents work during these hours and cannot attend. Only non-working parents have time to attend but may not have the resources available.

Attendees. Some participants thought that the special events were "gimmicky" and counter to the mission of the museum. Most participants, however, indicated that the special exhibits and events worked well to bring new faces to the museum, especially those that would not typically venture into the museum, such as different age groups, genders, and ethnicities. The museum was encouraged to continue to offer these events, especially those that are of interest to diverse groups.

Do not try operating in isolation. Participants suggested that the museum correlate these special events with activities and events going on elsewhere in the city. They suggested that they increase their publicity efforts, also in conjunction with the city or partner with other community organizations. Suggestions included using parent/teachers' organizations, universities, Brownies/Cub Scouts organizations, and libraries.

Objective 3. Redesign the Discovery Room into a developmentally appropriate space for children and parents that includes interactive activities tied to the exhibits.

Directions to the Discovery Room. Some participants were not aware of the existence of the Discovery Room and all of the participants suggested that the museum increase signage with directions to the room and/or provide verbal direction at visitors' point of entry to the museum.

Purpose. The purpose of the Discovery Room was not clear to participants. Some participants thought that the Discovery Room should be placed at the entrance to the museum and parents could be guided in ways to help their family get the most out of their museum experience. Others suggested that the Discovery Room be used as a break room for families. When children become restless in the galleries, families could relocate to the Discovery Room, where children are free to move, use energy, and refocus. Participants noted that the current space did not allow for much physical activity, such as climbing and running.

Location. Participants thought that the present room was isolated from the rest of the museum, both physically and topically. As noted above, they noted that the room might work better as an entry point to the galleries and serve as an introduction for families. They thought that the Discovery Room needed to flow with the design of the visitor experience and needed to be fit into the path of the visit. The room is adjacent to the art studio where classes meet to do art activities. This space may be combined to make a better space in the future.

Activities. Participants thought that the Discovery Room should change activities for patrons who visit the museum frequently and include topics with interesting materials that families do not have at home. The structure of the activities needed more focus and there needed to be some organizing principles around the activities that were more related to the content of the galleries. History topics in the room could play off everyday life in the city in the past and be brought to life by connecting it to the relevance that it has to today. They felt that it seemed more like a playroom than a lead-in to the galleries. The age span was a little unclear and they suggested having "podcasts" for older children. Participants suggested that the museum use a color-coding scheme or structurally divide areas to create spaces within the Discovery Room. They indicated that the room be connected more tightly to the galleries.

Parents needed ways to stay interested while they are in the Discovery Room and needed more guidance to engage and interact with their children and the activities. Once inside the room, families and children needed developmentally appropriate prompts. They noted that there for some activities there was a lack of instruction as to how to use the activities and for others there was too much text to read. Participants suggested establishing a Steering Committee of children to obtain children's own feedback about the activities in the room. The museum could make decisions with knowledge of children's preferences of activities.

Objective 4. Change sterile, formal space into a more comfortable and friendly space for diverse audiences.

Diverse Cultural, Ethnic, and Religious Representation. Participants noted that much of the city's history and art was not represented at the museum. They stated that there was a lot of history that could be discussed even if the museum did not have the artifacts to show it. They believed that the museum needed to tell "the whole story." Most notable not among the exhibits was slave representation and Native American artifacts. Panelists indicated that, in general, there needed to be more opportunities for the representation and accessibility of languages other than English at the museum. They felt that improved signage and storytellers could help with this issue. Religious holidays were also discussed. Participants noted that no holidays other than Christmas were represented or visible from the street, having the potential to offend non-Christian patrons.

Neighbors of the museum. Participants that did not visit the museum walked or drove to other cultural centers in the areas. They were willing to spend only about $20 for a family activity, which would exclude a family of three in a regular visit to the museum. About two-thirds knew of the museum but only half actually visited it. Most neighbors found out information about arts events from the local newspaper or from family and friends.

Warmer entrance. Participants agreed that the entrance to the museum should take advantage of the front windows and open space visible from the street. Artwork and banners that are interesting and inviting to a wide range of people would serve as a draw for diverse audiences. Participants encouraged the museum to have friendly and welcoming staff at the point-of-entry, with adequate signage and maps of the museum layout in several languages in the reception area.

Discussion

As a result of the process of this evaluation, museum staff has begun to think about their mission, their goals, and their place in the community. Participants posed many questions for the museum. The museum is thinking about the needs of the children, families and the neighboring community they serve and the ways that the museum wants to meet these needs. The museum is also considering the message they are sending to the community in the exclusivity of hours of family programming, their lack of cultural artifacts and representation, their portrayals of single language, culture, and religion in their history and art, and their lack of knowledge and interaction with the people of other cultures in their neighborhood.

The placement of the Discovery Room will depend upon the purpose they assign to it. The purpose they assign to the Discovery Room will depend upon the role they decide to play in the community. It is recommended that the museum spend some time getting to know more about their neighbors. The museum can bring the city's history more alive for all cultural groups and make yesterday's story relevant to today's events. As participants noted, they should not have to apologize for being a culturally distinct gallery and while no one is recommending that the museum force their collection to be an artificially culturally appropriate one, the museum can capture the attention of the community as a culturally welcoming building. After this evaluation, they should be better able to determine where they fit into this complicated pattern of life changes, learning, and cultural experience. They have had some help in answering the question of what is their place and significance in this city in the twenty-first century.

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Affect and Problem Solving in Mathematics Education

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Educational Theory and Practice

Research clearly shows that we have good reason to focus on affective variables in mathematics education. Research on affective issues has mostly looked for factors that are steady and can be measured by questionnaire. For example, research mainly did not focus on the emotional reactions of students on affect. Additionally, reform movements in mathematics education usually take a very traditional approach to affective issues. This review focuses on how affect influence learning in mathematics education. The purpose of this review is to examine the affective domains for problem solving in mathematics education. The question that motivates this review is how positive affective variables reflect higher problem solving achievement in mathematics education?

Affect is an important factor in teaching and learning mathematics. When you talk with teachers and/or students about mathematics, the teachers generally discuss student enthusiasm, and the students usually talk about classes that are interesting or boring. According to Wilson (1993), especially, problem solving activities cause students to get affective responses.

Meyer, Turner, & Spencer (1997) described affect as "personality traits", which are somewhat stable, and emotions, which are less stable and more situation dependent. Cross and Markus (1994) found that students who had self-schemas as "poor logical problem solvers" activate negative views when they face with failure. Additionally, McCaslin et al. (1994) focused on elementary students in small-group mathematics learning and found that negative affect has a powerful effect on students' perceptions. When students' behaviors interfered with their learning, they developed experiences negatively, possibly influencing future interactions in small-group mathematics learning. Boekaerts (1987, 1994) found that high school students who could ignore or disengage from the negative aspects of a situation had more positive feelings about their performance, lower anxiety, and higher performance. Research suggests that students who can handle when faced with negative-thoughts and who can respond to error with strategic actions are more likely to achieve (Wilson, 1993).

The National Council of Teachers of Mathematics (NCTM) puts considerable emphasis on affective issues in its publication of Curriculum and Evaluation Standards for School Mathematics (NCTM, 1989). Teachers are asked to help students develop their mathematical power, their abilities to explore, and reason logically, as well as to use a variety of mathematical methods effectively to solve nonroutine problems (NCTM 1989, 1991). Two of the major goals of the Standards deal with helping students understand the value of mathematics and with developing student confidence.

The NCTM Curriculum and Evaluation Standards (NCTM, 1989) list the following "five general goals for all students (1) that they learn to value mathematics, (2) that they become confident in their ability to do mathematics, (3) that they become mathematical problem solvers, (4) that they learn to communicate mathematically, and (5) that they learn to reason mathematically" (p.5). Students have a tendency to believe that learning mathematics is a question more of ability than of effort (Wilson, 1993). The National Research Council's (1989)

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report on the future of mathematics education shows changes on the public's beliefs and attitudes about mathematics. It seems clear that if students want to be active learner in mathematics, their feelings about mathematics are going to be very important.

Research clearly shows that we have good reason to focus on affective variables. The Second International Mathematics Study (Reyers, 1984) showed that there are large differences among countries on mathematical beliefs and attitudes. Dossey, Mullis, Lindquist, and Chambers (1988) showed that students in the United States become less positive about mathematics as they proceed through school. They found that students' confidence and enjoyment of mathematics seem to decline as they move from elementary through secondary school. Reform movements in mathematics education usually take a very traditional approach to affective issues. This review focuses on how affect influence learning in mathematics education. The purpose of this review is to examine the affective domains for problem solving in mathematics education. Do positive affective variables reflect higher problem solving achievement in mathematics education?

Affective Variables

Beliefs, attitudes, and emotions are terms that reflect the range of feelings and moods that make up affective responses to mathematics. These terms can change according to their intensity and their stability. For example, beliefs can be more stable and resistant to change, but emotional responses to mathematics may change immediately (Wilson, 1993). Students who say they dislike mathematics one day are likely to express the same attitude the next day. However, a student who is stuck with a nonroutine problem and upset may express joy and enthusiasm just a few minutes later when the problem is solved.

Reyes (1984) focused on mathematics anxiety as an "affective domain". Sometimes, anxiety was characterized as fear, a "hot" emotion, and sometimes as dislike, an attitude (Hart, 1989). Conceptions of mathematics anxiety seem to overlap with test anxiety (Sarason, 1987) as it applies to mathematics.

These terms also differ in the ways that cognition is involved in the affective response. Although it is not possible to separate student responses into discrete affective and cognitive categories, some of these terms include thoughts as much as feelings. For example, beliefs are mainly cognitive in nature, built up over a relatively long period of time.

Research showed considerable attention on the students' beliefs about mathematics. The National Assessment of Educational Progress (1988) found that students generally believe that mathematics is important, difficult, and based on rules. These beliefs about mathematics seem to generate more intense affective reactions, although they are not emotional. For example, Kloosterman, Raymond, & Emenaker (1996) found that students who believe that mathematics is important are more likely to get emotional about problem solving than those who think mathematic is unimportant.

Other major evaluation studies have also focused on beliefs about mathematics. Dossey and colleagues (1988) report that students in grades 3, 7, 11believe that mathematics is useful, but involves mainly memorizing and following rules.

Regarding problem solving, belief has been a major focus in studies. As Schoenfeld (1985) showed, students may have beliefs about mathematics that reduce their ability to solve nonroutine problems. If students believe that mathematical problems should always be solved as soon as possible, they generally give up solving nonroutine problems that take substantially longer time. Also, students may believe that only smart people can be creative in mathematics (Schoenfeld,

1985). Although teachers do not necessarily share these beliefs, the traditional classroom environment often provides support for the development of such beliefs. It may be that learners' beliefs about math might be manifestations of more general beliefs about knowledge.

Thinking about emotional responses, however, they have a much stronger affective component, and they can appear quite suddenly (Wilson, 1993). In mathematics education, feelings and moods like anxiety, confidence, frustration, and satisfaction are all used to describe responses to mathematical tasks. Generally, these feelings are discussed in the literature as attitudes, however, according to Wilson (1993) that term does not seem adequate to describe some of the more intense emotional reactions that occur in mathematics classrooms. For example, we recognize that "Aha!" experience in mathematical problem solving as a joyful event quite different from traditional definitions of attitude. Research on attitudes has a relatively long history in math education. Kulm (1980), Leder (1987), Reyes (1984), and Sherman & Christian (1999) used attitudes as general term that included beliefs about mathematics and about the self. However, attitude can include positive or negative feelings that are relatively stable. Liking math, disliking geometry, being curious about word problems all are examples of attitudes.

Attitudes toward mathematics appear to develop in two different ways (Marshall, 1989). Attitudes might come from a repeated emotional reaction to mathematics. For example, if a student has repeated negative experiences with topology, it might be concluded that emotional reaction will eventually become more automatic. The other thing is that the student can develop a new attitude to an already existing attitude. A student who has a negative attitude toward topology may develop that same attitude to geometry (Marshall, 1989).

Affective variables sometimes have different meanings in psychology than they do in mathematics education. Studies generally use the same terminology but they do not study the same phenomenon. For example, Hart (1989) notes that anxiety is sometimes described as fear, one of the more intense emotions, and in other studies as dislike, a less intense attitudinal response. Kulm (1980), Leder (1987), and Reyes (1984), Sherman& Christian (1999) generally focused on attitudes toward mathematics as their major concern, rather than on trying to describe and analyze all components of the affective domain.

Gender and Social Context on Affective Domains

Gender differences in mathematics education were another issue on affect. In this sense, most studies used the Fennema / Sherman scales, and especially the scale on the belief on mathematics (Fennema, 1989). In summarizing this research, Fennema (1989) found that males showed more enthusiasm toward the mathematics than females. Correll (2001) expressed that these beliefs are important for gender differences in mathematics achievement, in enrollment, and in affective responses to mathematics.

Research provided some of the most consistent data in the literature on the affective domain. For example, Stage & Kloosterman (1995) showed that males are more likely than females to attribute their success in mathematics to ability, and females are more likely than males to attribute their failures to lack of ability. In addition, females tend to attribute their success to extra effort more than males do, and males tend to attribute their failures to lack of effort more than females do. Fennema (1985, 1989); Fennema & Meyer (1988); Reyes (1984) saw the consequences of these differences in the way that more males than females have traditionally chosen mathematically related careers. These attributions may influence career choice, as well as many other factors.

Stodolsky (1985) compared social studies classrooms with mathematics classrooms and found how beliefs about mathematics influence students and teachers' performance in mathematics classrooms. Students worked in groups to develop their research skills, and in general to work on tasks that are compatible with the development of higher-order thinking skills in social studies classrooms. However, students spent a lot of time doing individual seatwork mathematics classrooms in mathematics classrooms. Greenwood (1984); Garofalo (1989) found how students viewed mathematics as a skill-oriented subject, and how these views lead to anxiety about mathematics.

Dossey, Mullis, Lindquist, &Chambers (1988) focused on confidence in mathematics education. They asked children in grades 3, 7, and 11 if they were good at doing mathematics. The percentage of students who responded positively dropped from 65% in grade 3 to 53% in grade 11,. This drop is not very large and may be attributable to increasing difficulty of the mathematics but provides a general idea how confidence declines as students proceed.

Research on confidence shows that there are differences between males and females on this issue. In general, males seem to be more confident than females, even when females may have better reasons to feel confident (Reyes, 1984; Meyer & Fennema 1988).

Another set of beliefs about the self are the reasons that students give for their successes and failures. Weiner (1986) presented the central themes about these attributions (Table 1). This theory dealt with the locus (internal or external), the stability (e.g., ability vs. effort), and the controllability of the cause of success and failure. According to this theory, a student who fails to solve a mathematics problem could give the cause to the difficulty of the problem- a cause that external, stable, and uncontrollable by the student. On the other hand, a student who is successful in solving a problem might give that success to effort – a cause that is internal, unstable, and controllable.

Table 1. *Attributions of Success and Failure in problem solving*

	Internal		**External**	
	Stable	**Unstable**	**Stable**	**Unstable**
Uncontrollable	Ability	Mood	Task Difficulty	Luck
Controllable	Typical effort	Immediate effort	Teacher bias	Unusual help from others

Adapted from (Weiner, 1986)

Student beliefs about the social context appear to be another area that is closely related to affective concerns (Cocking & Mestre, 1988; Orr, 1987). For example, Cobb, Yackel, and Wood (1989) focused on the social norms in the classroom that were directly related to kinds of affective reactions that the students expressed: They observed a teacher who insisted that students not describe problem as "easy". The teacher's point was that describing a problem as easy was demoralizing to students who had not yet been able to solve the problem. This kind of talk, so common in most classrooms, was strongly discouraged by this teacher. This clearly shows how classroom conversations can undermine student confidence.

Grouws and Cramer (1989), similarly, found that successful classrooms were characterized by a supportive classrooms environment where social norms encouraged students to be enthusiastic and to enjoy mathematical problem solving. From general point, the social context

provided by the school and the home also can have an effect on student beliefs. Parsons, Adler, and Kaczala (1992) studied parental influences on student attitudes and beliefs. They found that affective reactions of students often reflect social norms as expressed by the parents. Research on cultural settings also shows the influence of the social context. Holloway (1988) compared the students' effort and ability from Japan and the United States. The report suggested that effort is believed to be major factor in determining achievement in Japan, but ability is seen as the primary factor in the United States. It seems clear that culture promotes certain beliefs about education, and these beliefs can be powerful forces in children's affective responses to mathematics.

McKnight, Crosswhite, Dossey, Kifer, Swafford, Travers, & Cooney (1987) indicated that there are differences in attitudes between different countries. When they asked twelfth grade if they liked mathematical activities such as checking answers and providing theorems, the Japanese students gave more negative enthusiasm than the students from Sweden and the United States.

Emotional Reactions and Affect

Research mainly did not focus on the emotional reactions of students on affect. The reason for this is that research on affective issues has mostly looked for factors that are steady and can be measured by questionnaire. Buxton (1981) dealt with adults who report their emotional reaction to mathematical tasks as panic. Some investigations have focused directly on the role of the emotions in mathematics learning. McLeod, Metzger, and Craviotto (1989) reported on the emotional reactions of research mathematicians and college students to problem solving. They found that the emotional reactions to the frustrations and joys of solving problems are basically the same for each group. The experts, however, are better able to control their emotions. They stay flexible, trying a variety of strategies even when they are stuck.

Similarly, Silver and Metzger (1989) studied adults. They interviewed research mathematicians and asked them to solve nonroutine problems while thinking aloud. Rather than viewing problems from a strictly utilitarian perspective, these experts frequently spoke about the elegance, harmony, and coherence of various solutions (or attempted solutions) to problems. The aesthetic aspects of the problem-solving experience were clearly linked to the expert's emotional responses, and especially to their enjoyment of the problem.

Although the research literature focused on emotion from time to time, it is quite unusual for research on mathematics education to include measures of physiological changes that accompany the emotions. However, in recent solved problems, they also administered paper-and-pencil measures of anxiety toward mathematics. As one might expect, there was little correlation between the two measures, suggesting that influence students in the classroom (Dew, Galassi, & Galassi, 1984).

Some researchers have claimed that negative attitudes lead to poor achievement in mathematics, while others have said that poor achievement in mathematics lead to negative attitudes. However, research suggests that neither of these statements is completely correct; rather, attitude and achievement interact with each other in complex and unpredictable ways. For example, McKnight, C.C., Crosswhite, F.J., Dossey, J.A., Kifer, E., Swafford, J.O., Travers, K. L, & Cooney, T. J.(1987) indicated that Japanese students had a greater dislike for mathematics than students in other countries, even though Japanese achievement was very high (There is growing appreciation for the complexity of the affective domain. The original attempts to measure attitude toward mathematics seem exceptionally primitive, given our current knowledge and experience in the area (Leder ,1987).

Affect in Cognitive Theories

In recent years, affect was an important factor for cognitive theories. Mandler' theory was quite interesting. Mandler's view was that most affective factors arise out of the emotional responses to the interruption of plans (Figure 1). According to Mandler (1989), there is a schema for plan, and the plan arises from the activation of schema.

Thinking about Mandler' theory, we can use this theory for a tenth grade trying to solve a word problem. Let's suppose this student is successful in mathematics. Also, let's suppose that the student believes that problems should be solved in a reasonable time. If the student do not get a reasonable answer, the failure to solve the problem (an interruption of the plan) is likely to lead to some arousal. This arousal will be more likely negative. If the student handles with the blockage and find a solution to the problem, he may show positive attitude. If it does not happen, negative reactions to word problems occur repeatedly; the negative response will eventually become automatic and stable. In this situation, the students would have developed a negative attitude toward word problems (Wilson, 1993).

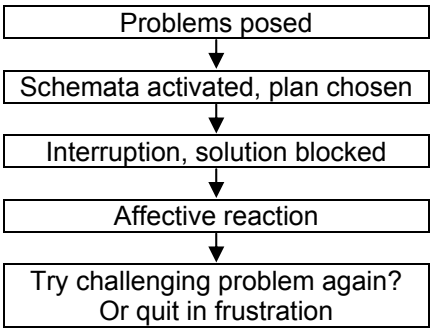

Figure 1. Affect and problem solving (Adapted from Mandler, 1989)

Students can improve their affective responses to problem solving in a variety of ways. For example, teachers can help students think about how much time a problem should take by giving different problems that require much more time (Wilson, 1993).

Summary

It seems clear that:

- Students have certain beliefs about mathematics and this play an important role for their affective responses.
- Students face with some obstructions in the learning of mathematics. These blockages are more obvious when the students get unfamiliar tasks.
- Students generally develop positive or negative attitudes toward mathematics as they face with the same or similar mathematical situations repeatedly (Wilson, 1993).

In dealing with affect in mathematics teaching, Grouws and Gramer (1989) showed a useful summary of what a good practice might look like. They observed six expert teachers of problem solving. The study focused on identifying the affective characteristics of the classrooms of these teachers during problem-solving lessons. The observations showed that students in these classes enjoyed problem solving and worked willingly on problem solving assignments. Observations and interviews with teachers revealed that teachers seemed to work to establish a good relationship with students, to be friendly rather than formal, and to share personal anecdotes about

their own problem solving that illustrated their own strengths and weakness as problem solvers. The teachers also used cooperative learning. Rather than a single factor, multiple factors seemed to have effect on this success.

If researchers could find what teachers do in situations where they are successful, we could all learn about strategies that we might try. This kind of approach might be useful for teachers working together or with other researchers. If we want students to get develop positive beliefs and attitudes toward mathematics, we have to focus their performance. If students are encouraged to think about mathematical problems as challenges rather than frustrations, they should be better able to control their emotions. If students' affective responses improve, our mathematics classrooms can be much more inviting places for both teaching and learning.

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