Volume 17, No. 1 Winter 2004

MID-WESTERN EDUCATIONAL RESEARCHER

• Official Publication of the Mid-Western Educational Research Association •

Shaker Heights High School

On The Cover

John Ogbu was to be the keynote speaker at the Mid-Western Educational Research Association's 2003 annual conference. In honor of Professor Ogbu, the editors have chosen to depart from our tradition of providing a picture of a higher education institution on the cover of this issue and, instead, provided a picture of Shaker Heights High School. Professor Ogbu's work with the Shaker Heights School District and the detailed analysis of his findings that was documented in *Black American Students in an Affluent Suburb: A Study of Academic Disengagement* (2003) was scholarly, controversial, and focused attention on important factors to consider as the public looks for answers to achievement gaps. Our intention is to honor the Shaker Heights district for their courage in facing head on the important questions that are best put up to the light of day and to Professor Ogbu for providing that light. We mourn his passing.

The Editors

Information for Contributors to the Mid-Western Educational Researcher

The *Mid-Western Educational Researcher* accepts research-based manuscripts that would appeal to a wide range of readers. All materials submitted for publication must conform to the language, style, and format of the *Publication Manual of the American Psychological Association*, 5th ed., 2001 (available from Order Department, American Psychological Association, P.O. Box 2710, Hyattsville, MD 20784).

Four copies of the manuscript should be submitted typed double-spaced (including quotations and references) on 8 1/2 x 11 paper. Only words to be italicized should be underlined. Abbreviations and acronyms should be spelled out when first mentioned. Pages should be numbered consecutively, beginning with the page after the title page. Manuscripts should be less than 20 pages long. An abstract of less than 100 words should accompany the manuscript.

The manuscript will receive blind review from at least two professionals with expertise in the area of the manuscript. The author's name, affiliation, mailing address, telephone number, e-mail address (if available), should appear on the title page only. Efforts will be made to keep the review process to less than four months. The editors reserve the right to make minor changes in order to produce a concise and clear article. The authors will be consulted if any major changes are necessary.

Manuscripts should be sent with a cover letter to:

James A. Salzman, *MWER* Co-Editor
Cleveland State University, Rhodes Tower Rm. 1343, 2121 Euclid Avenue, Cleveland, OH 44114

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Announcement

The results of the recent ballots were very strongly in support of the addition of Division L (Educational Policy and Politics) to the program committee. We now once again match the divisions of AERA.

Also the membership overwhelmingly supported the dues increase. Therefore, effective March 13, 2004, professional dues are now $45 per year and student dues are $25 per year. Lifetime memberships are now $450.

Presidential Address

Undergraduate and Graduate Preparation in Educational Research Methods

Robert S. Barcikowski
Ohio University

Abstract

The advent of high stakes state testing in K-12 education and The No Child Left Behind Act of 2001, with its focus on "scientifically-based research" (SBR), has opened new challenges for both undergraduate and graduate preparation programs in education. This address will report on how we are currently preparing our undergraduate and graduate students in educational research methods and then offer specific recommendations that would allow our graduates to better understand and use the information generated by these new public policies.

The advent of high stakes state testing in K-12 education and The No Child Left Behind Act of 2001 place high demands on K-12 pupils and their teachers. Not only are teachers expected to teach and assess so that their pupils pass subject competencies, but they are also expected to understand research studies in education and the statistics associated with tests and test results. These expectations lead us to consider their undergraduate and graduate training in tests and measurements and in educational research. However, they also lead us to consider the graduate training of the university and college teachers of our teachers because if the former are not well prepared to interpret and understand tests and measurements and educational research it will be difficult for us to expect these skills from our K-12 teachers. Indeed, I will argue, that we ought to expect our university and college education teachers to operate at a much higher level where they can not only understand research studies in education and the statistics associated with tests and test results, but also have the skills to create tests and other measurement instruments and to carry out high quality educational research studies.

The purpose of this paper is to: 1) consider the current training of our university and college teachers of our K-12 teachers in educational research and tests and measurements, 2) recommend training for university and college teachers of our K-12 teachers in educational research and tests and measurements, 3) recommend training for students in undergraduate teacher education programs in educational research and tests and measurements, and 4) recommend that all students, undergraduate or graduate, in education understand what Utts (2003) has described as seven ideas ". . . that every student who takes elementary statistics should learn and understand in order to be an educated citizen" (p. 74). I will do this by reviewing the research in these areas and by drawing on my thirty odd years of experience as a professor of educational research and evaluation.

Anecdotes/Observations

I begin by providing you with a few anecdotal accounts of experiences I've had recently in training graduate students in research methods.

Anecdote 1. A Ph.D. student set an appointment to ask me to be on his comprehensive examination committee. During our meeting he requested that I prepare questions for him so that he could consider research methods to be one of his proficiencies (an area of study where you are considered to have expertise). I asked him how many research methods courses he had taken and he indicated that he had taken our first statistics course and our first course in qualitative analysis. I must admit that after hearing this, I was astounded by his request and that he thought he was proficient in research methods. I indicated to him that I didn't consider him to be proficient either as a quantitative or as a qualitative researcher. He left in search of another professor who would take my place as an examiner.

Anecdote 2. I teach a tests and measurements Master's level class where I ask teachers to create and critique tests for their students. During one of these classes a teacher came up to me and asked why she hadn't had the material as an undergraduate. She indicated that she had been teaching for ten years and the information that I was providing her would have been invaluable. I indicated that she should have had this instruction as a part of her teacher education course work. In reality, tests and measurements is not a part of the undergraduate curriculum or too frequently is a written part of the undergraduate curriculum but is avoided by instructors who are not comfortable teaching it or do not have the time necessary to teach it.

Anecdote 3a. A professor in school administration indicated to me that he felt that his students didn't need to now much about educational research because: 1) he didn't, and he was a successful full professor, and 2) if he needed to know something about testing, statistics, and/or research he would hire a consultant.

Anecdote 3b. I received a similar "Why do I need to now this stuff when I can just hire a consultant?" when I offered a research methods course recently to a group of public managers.

Anecdote 4a. It is interesting to see what professors do with the hours a course is to be taught. A colleague was leaving to do research in Africa. He taught a four-hour course

in tests and measurements for ten weeks, yielding forty hours of instruction. He met the forty hours of instruction requirement (and his plane) by teaching the course in four consecutive days, ten hours per day.

Anecdote 4b. I also can point to Ph. D. students who take five-hour courses in statistics (beginning statistics or a course in regression analysis) in four or five weekends, meeting Friday evening and all day on Saturday.

Anecdote 4c. I know of a six-hour course that meets all in one day that is expected to enable the participants to design a research project and analyze the resulting data. To be fair (or sarcastic) this course is preceded by another six-hour course one-day course where the students are taught to prepare the survey that they will use in their research project.

Anecdote 4d. Finally, consider the typical research methods course that is taught for three or four straight hours in the evening to teachers who began working in the early morning hours. Some of these teachers take two courses in one evening, one from 4pm to 7pm and one from 7pm to 10pm. You have to be a really dynamic professor to teach these courses, complemented by students filled with No-Doze.

Anecdote 5. In Ohio's public universities money is distributed among the universities in part dependent on the number of students you have in your class. The measure used is known as full time equivalencies (FTEs). Unfortunately, in this system students who take courses almost anywhere else within the university receive a higher weight than do students in education. What this does is to set at a large number the number of students in education necessary for a class to be held. This leads the typical master's level research methods class to have more than twenty students meeting for three to four straight hours. This is a deadly setting for learning, a combination of a large class meeting for a long and concentrated period of time on a topic that requires time to assimilate.

In anecdote 1 we have a student who has been given poor guidance in his Ph.D. program. In the second anecdote we have a teacher with poor undergraduate preparation. In anecdotes 3a, and 3b we have people in leadership positions that don't know the right questions to ask of their consultants and who could develop policies based on poor consultant advice. The latter individuals also run the risk of being counted among the people Halpern describes as those who " . . .don't understand why their personal experiences are not more valid than, or at least as good as, impersonal data collected from thousands of learners" (Halpern, 2000, p. 176). In anecdotes 4a, b, c, and d we find faculty or students in courses on research methods that are out to get their required hours with learning and competence be damned. In anecdote 5 we find teachers and other students in education placed at the bottom of the education-funding ladder perhaps because there are many of them and if they received the same weights as students in say physics or chemistry, they would receive too large a share of allotted funds. "You reap what you sow."

Research On Graduate Training

I found limited research on graduate training in educational research. However, two papers provided information for use in this paper: 1) a survey done on the training of graduate students in educational statistics (Curtis and Harwell, 1996; Curtis and Harwell, 1998) and 2) a report of a study by Kamil (1994) in a college of education at a major university in graduate training in *inquiry* which he, ". . . broadly defined as work in methodology, statistics, or design" (p. 224). I also found studies of statistical preparation in psychology (Akin, West, Sechrest, and Reno, 1990) and medicine (Dawson-Saunders, Azen, Greenberg, and Reed, 1987). Curtis and Harwell (1996) examined the statistics requirements of quantitative (QM) and non-quantitative (non-QM) students in " . . . prominent educational research institutions, namely those institutions identified in a University of Illinois study as the top thirty-one Colleges of Education ranked in terms of academic productivity and prestige (West and Rhee, 1995) (p. 5)". For the non-QM students they found:

> In nearly half of the institutions (43%), students in some programs can graduate without taking a statistics course whereas in 40% of the institutions, students in all programs are required to take at least one statistics course. In only 15% of the institutions is there a uniform 2-course statistics requirement. (p. 10)

Curtis and Harwell indicated a cause for concern about non-QM doctoral students because of the descriptive information that they collected on faculty members' perceptions of doctoral student competence.

> Specifically, the research findings suggest that a number of QM faculty think that a good portion on non-QM doctoral students are under-prepared to be critical consumers of typical quantitatively-oriented research articles. We found that 31% of the faculty thought that less than half of the non-QM doctoral students could critically read and interpret research articles utilizing ANOVA, and 62% of the faculty thought that less than half of the non-QM doctoral students could critically read and interpret research articles utilizing OLS regression. These two procedures—ANOVA and regression—are fairly common in educational research literature. . . . Moreover, the vast majority of faculty thought that less than half of the non-QM doctoral students cold critically read articles utilizing more advanced procedures, namely MANOVA, log-linear models, nonparametric rank tests, and causal models.

Curtis and Harwell further indicate that " . . . virtually none of the surveyed programs required training in qualitative methods yet prominent research journals in education regularly publish the results of qualitative research studies." (p.12)

Kamil (1994) provides information on graduate training that generally supports the results found by Curtis and

Harwell. Kamil was surprised to find that out of 68 fellowship applicants (the best and brightest) at a major university, ten had no course work in inquiry. Furthermore, Kamil found that:

> . . . a sample of *filed* PH.D and M.A. programs revealed that doctoral students presented an average of about 10.4 hours of credit (something over three quarter courses) in inquiry. This might be sufficient if they came prepared. However, at the M.A. level, the average number of hours was less that 1.5, or about half of a course. Consequently, many of the students at the M.A. level had no work in inquiry. (p.224)

Kamil concludes his look at the number of hours in inquiry taken by graduate students with the following:

> There is no way that students can learn how to be proficient researchers from so few courses. Moreover, it is typically the case that doctoral students have few research experiences prior to their dissertation problem. Some have none. It is also unreasonable to expect students to become proficient with so little experience. Combined with the meager coursework, this lack of experience seems optimal for producing lower quality research from successive generations of students.

The State of Educational Research

Concern about the quality of educational research is rampant in our literature (e.g., Gorard, 2002; Halpern, 2000; Kamil, 1994; Levin and O'Donnell, 2000; McGuire, 1999; Pressley and Harris, 1994a; Pressley and Harris, 1994b; Rudduck, 1998; Sabelli and Kelly, 1998; Sroufe, 1997; Tooley, 2001; Torgesen, 1994; Viadero, 1998). Halpern (2000) in discussing the efforts of Levin and O'Donnell to suggest how educational research can attain respectability begins by presenting her perspective of the state of educational research:

> It's a topic that most of us would prefer to keep secret, or at least not discuss openly in a public forum. Levin and O'Donnell call it "educational research's credibility gap"; others have been more blunt. Regardless of which euphemism is used, Levin and O'Donnell have done the field of educational research a great service by opening discussion on the wide-spread perception that the quality of educational research is poor and by honestly acknowledging that far too much educational research fits this stereotype. As the authors clearly document, the credibility gap for educational research may be better described as a canyon.

The problems with educational research are not only apparent in the United States. For example, Tooley (2001) reported on a research study in England commissioned by Her Majesty's Chief Inspector of Schools. "The study's aims were narrow and limited. It set out to present, in particular to policymakers and others outside the research community, a descriptive snapshot of the quality of educational research in key academic educational research journals (p. 123). In his discussion of the results of this study which focused on four important academic educational research journals, Tooley comments:

> However, the tentative suggestion can be made that the individual shortcomings in particular facets of the research articles noted in the report are, in general, serious enough to warrant raising grave misgivings about the quality of the research surveyed. The tentative conclusion is that there is a large amount of second-rate academic educational research (in the important strand reviewed here), as outlined earlier, in terms of partisanship, methodology, and argument of nonempirical research. There were worrying tendencies in a majority of the articles surveyed in the subsample, and we can be reasonably confident, because of the sampling methods used, that these tendencies will be found throughout this important strand of educational research. (p. 138)

Gorard (2002) comments on the state of educational research in the UK as follows: "Recent interviews with around 30 key stakeholders (including funders, politicians and journal editors) all suggest that educational research has general weaknesses, and the unanimity of this view is impressive (www.cf.ac.uk/socsi/capacity) (p. 232)." He then gives us an example of the problem by providing a scorching review of the methods and conclusions in an article "from the pinnacle of UK educational research" written by two respected researchers.

My Experience

In teaching my college's Master's level research course I use a book by McMillan (2004) that contains several research articles. I have my students read the journal articles in McMillan's book and others that have been popularized through newspapers or TV reports. I try to have my students learn about research methods by requiring them to read as many research articles as I can squeeze into the 10 week three hours (yes, all at one time) per week course. I relate the concepts and ideas in McMillan to the articles and give the students questions to answer to test their understanding of the concepts, both as homework and as take-home tests.

Unfortunately, the first three example articles in McMillan are all examples of second-rate, at best, academic educational research. For example, McMillan opens with an article by Shepardson and Pizzini (1994) that involves a non-probability sample where the analysis violates the assumption of independence of units. The authors analyzed student data while classes were randomly assigned to treatments. Their achievement test had a reliability of .43 and their eight-item perception questionnaire with a reliability of .83, turned out to be the focus of the study. The authors use a pretest achievement test as their covariate, and proceed with an analysis of covariance (ANCOVA) for each dependent variable. (I always ask myself why McMillan

would introduce new research methods students to their first article that has an analysis of covariance, but somehow, I am always able to navigate my students through this article.) Shepardson and Pizzini compared three treatments: 1) Textbook-Worksheet Activities, 2) traditional Laboratory Activities and 3) the focus of this research, the Search, Solve, Create, Share (SSCS). Two teachers taught two classes under each treatment. They blocked on gender, totally ignoring the class structure, to arrive at a 2X3 ANCOVA.

The analysis indicates that the students in the SSCS treatment have a more positive perception of science. The authors conclude: "It appears that science activities in exemplary programs, like SSCS problem solving, do not impede science achievement of boys and girls as they promote a more positive perception of science activities (p. 23)". Given that they started with a nonprobability sample, used the wrong unit of analysis, violated the most important assumption for an ANCOVA, and had weak instruments, this result is a perfect example of making lemonade from lemons.

Unfortunately, the two articles that follow this one later in McMillan's book (Legette, 1999; and Tuckman, 1999) are also examples of second-rate, at best, academic educational research. I use McMillan's selection of articles primarily to identify examples of independent and dependent variables, p-values, test statistics, problem statements, etc, but I can't help pointing out to my classes that the articles consider trivial problems and are probably part of the publish or perish cycle. I usually follow Shepardson and Pizzini (1994) with one by Moseley, et al. (2002) from *The New England Journal of Medicine*. The authors of this article found no difference in pain (measured several ways) or physical function between two methods of knee surgery and a non-surgical placebo procedure. The article had garnered much press and was reasonably well done given the difficulty in carrying out this type of study. They used a nonprobability sample but were able to randomly assign patients to treatments, consider statistical power, and make a good effort to rule out other possible causes. The authors conclude that if the efficacy of two surgical procedures ". . . in patients with osteoarthritis of the knee is no greater than that of placebo surgery, the billions of dollars spent on such procedures annually might be put to better use (p. 87)". The difference between the importance of this study and those in McMillan is dramatic.

Our education undergraduate and graduate students in our research methods classes (indeed, in all of their classes) need to be aware of well-designed studies and of the many poor studies that are in our literature. One way to do this is to have them read and criticize many real studies.

Dealing with condensed courses. The best way to deal with courses that meet for a condensed period of time, e.g., for three to five hours, is not to. An alternative that seems to work well for my students and me is to formally meet for one or two hours and then to have a continual dialog over the days before our next class. I accomplish this by giving assignments that require students to answer questions about their readings. They can ask me questions through software available at Ohio University from Blackboard Inc. This software provides many options, but the option that I use here is basically a chat room. The whole class can view both my students' questions and my responses. This approach allows each student to work on my assignments when they are fresh and keeps us all involved over time, providing us with spaced rather than massed practice.

Research Literacy

Utts (2003) presents seven important topics that she indicates need to be discussed in elementary statistics courses. I feel that these seven points should also be discussed in research methods courses. She indicates that she has found these seven points

> . . . to be commonly misunderstood by citizens, including the journalists who present statistical studies to the public. In fact researchers themselves, who present their results in journals and at the scientific meetings from which the journalists cull their stories, misunderstand many of these topics. (p. 74)

I have decided that Utts's seven topics will form the foundation for my research methods class. My objective is that all of my students will be able to demonstrate an understanding of the following seven topics that were taken from Utts (pp. 74-75, 2003):

1. When it can be concluded that a relationship is one of cause and effect, and when it cannot, including the difference between randomized experiments and observational studies.

2. The difference between statistical significance and practical importance, especially when using large sample sizes.

3. The difference between finding "no effect" or "no difference" and finding no statistically significant effect or difference, especially when using small sample sizes.

4. Common sources of bias in surveys and experiments, such as poor wording of questions, volunteer response, and socially desirable answers.

5. The idea that coincidence and seemingly very improbable events are not uncommon because there are so many possibilities.

6. "Confusion of the inverse" in which a conditional probability in one direction is confused with the conditional probability in the other direction.

7. Understanding that variability is natural, and that "normal" is not the same as "average".

The first four topics are probably covered in most masters' level research methods classes in education. Topics 5, 6, and 7 need further discussion that is beyond the scope of this address, but Utts provides an excellent presentation of them with examples.

Conclusions

Undergraduate teacher programs. Let's not make our undergraduate education majors illiterate with respect to research in their profession. Undergraduates in teacher educa-

tion programs must be exposed to research in their field. They all should be Utts's "educated citizens". Similarly, because they are expected to assess their pupils' achievement and be able to understand proficiency test results and the results of standardized tests that their students take, they must have instruction in tests and measurements during their undergraduate years. Our K-12 teachers must be empowered with respect to research methods and tests and measurements to better serve their students, schools and communities.

Master's level graduate programs in education. Teachers who return for their Master's degree in education should be able to build on what they learned as undergraduates. They can review their measurement and research methods knowledge and then be updated on new developments in these areas.

Doctoral level graduate programs in education. Doctoral programs in education prepare our future teacher education teachers, policy makers, educational administrators, philosophers, counselors, and curriculum specialists, among others. Their programs should be inculcated with research methods. Every quarter or semester of their program should include a course in inquiry and they should be involved with one or more research projects that include the guidance of a research methodologist. Further, none of their courses, but especially their inquiry courses should be taught in a compacted time period with large numbers of students.

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Mid-Western Educational Research Association

2004 Annual Meeting Call for Proposals

PROPOSAL DEADLINE: May 1, 2004

October 13-16, 2004
The Westin Great Southern, Columbus, OH

Rodney J. Greer, Program Chair
RJ-Greer@wiu.edu

The 2004 Annual Meeting of the Mid-Western Educational Research Association (MWERA) will be held in Columbus with an exciting program of invited speakers, focused workshops, and peer-reviewed papers presented in a variety of session formats. The 2004 program will center around this year's theme: ***Theory and Practice: Two Sides of the Same Coin*** and will feature dynamic speakers of interest to both researchers and practitioners. Teachers, administrators, and other school personnel are especially invited to come and share their school-based research and experiences at the 2004 MWERA conference.

The meeting returns to The Westin Great Southern in Columbus, a historic landmark hotel, featuring charming guest rooms, excellent meeting facilities, a fitness center, and a location only a short walk from the quaint shops of German Village. New this year will be wireless computer access in the hotel facility. Columbus is the home to numerous theaters, a symphony, wonderful restaurants, shopping and fun nightlife!

If you are looking for a place to sit down and chat with researchers from schools and universities about your ideas and perspectives, the Mid-Western Educational Research Association provides that opportunity with its supportive, collaborative environment. Educational researchers across North America return to MWERA to renew acquaintances, make new contacts, and engage in exciting conversation in a collegial atmosphere. Come and be a part of MWERA in 2004!

General Information

The 2004 MWERA Annual Meeting will be held **Wednesday, October 13 through Saturday, October 16,** at the Westin Great Southern in Columbus, Ohio. This year's theme is ***Theory and Practice: Two Sides of the Same Coin***. The program will consist primarily of presentations, selected through a peer review process, by divisional program chairpersons. In addition, there will be invited speakers and symposia, panel discussions, special sessions for graduate students and new faculty, a luncheon and other social events open to all attendees.

New web site for 2004 - MWERA.org

Please note that the organization has a new web site for 2004, and we are working closely with the web developers to ensure that the transition and proposal submission process is as smooth as possible. The new web site will be available for access on January 19, 2004.

Proposals **MUST** be submitted electronically over the internet using the form available on the meeting website. Proposals mailed or e-mailed to the Program Chair or Division Chairs will **NOT** be processed. Specific instructions for electronic submission can be found at the meeting website:

http://www.mwera.org

Questions about a proposal, the electronic submission process, or the meeting should be directed to the Program Chair:

Rodney J. Greer
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Any educational professional may submit a proposal for MWERA-2004, whether or not that person is currently a member of MWERA. *All Annual Meeting presenters must be members in good standing with MWERA (non-members must join MWERA upon notification of proposal acceptance).* To promote broader participation in the program, no one person should appear as a presenter on more than three proposals.

All proposals must be posted on the MWERA website no later than midnight CST on May 1, 2004. Submissions will then be forwarded to Division Chairs and each Division Chair will coordinate a number of volunteers in a system of blind (without author identification) review. Appropriate criteria, depending on the format and type of scholarly work being presented, have been developed and are used for the review process. These criteria include: (a) topic (originality, choice of problem, importance of issues); (b) relevance of topic to the Division and MWERA membership; (c) contribution to research and education; (d) framework (theoretical/conceptual/practical, rationale, literature review, grounding); (e) analyses and interpretations (significance, implications, relationship of conclusions to findings, generalizability or usefulness); and (f) overall written proposal quality (clarity of writing, logic, and organization).

Papers presented at MWERA are expected to present original scholarship, conducted by the author(s), which has not been previously presented at any other meeting or published in any journal. Further, it is a violation of MWERA policy to promote commercially available products or services (except as Exhibits) that go beyond the limits of appropriate scholarly/scientific communication. Individuals who wish to display educationally related products or services are encouraged to contact Dr. Sharon McNeely, Historian/Archivist, P. O. Box 34421, Chicago, Illinois 60634-0421, 773- 442-5518.

All persons presenting at the 2004 Annual Meeting are expected to register for the full meeting. All sessions listed in the program will be open to any registered meeting participant; however, enrollment may be limited, and a small additional fee required, for some workshop sessions. Tickets for the Friday luncheon and speaker are available to all pre-registrants. *Ticket availability is not guaranteed for late and on-site registrants*. Registration materials for the 2004 Annual Meeting will be published in the *Mid-Western Educational Researcher*, on the MWERA website, and can be obtained by contacting the Program Chair.

Presenters whose papers have been accepted to a session with a Session Chair and/or Session Discussant are responsible for submitting a completed version of their conference paper to the Session Chair and Discussant no later than September 17, 2004. *Papers not available to the Session Chair and Session Discussant may be dropped from the program*. Presenters must also provide complete copies of their papers (or detailed handouts) to attendees at their sessions. Overhead projectors and screens will be provided by MWERA in most presentation rooms. Presenters needing additional A/V equipment are responsible for arranging such with the hotel at the presenter's own additional expense.

MWERA reserves the right to reproduce and distribute summaries and abstracts of all accepted proposals, including making such works available in a printed Program Abstract, through the MWERA website, and in press releases promoting the Annual Meeting and the organization. *As a condition of acceptance, all authors of papers accepted to the 2004 Annual Meeting explicitly grant MWERA the right to reproduce their work's summary and/or abstract in these ways*. Such limited distribution does not preclude any subsequent publication of the work by the author(s).

Authors of accepted proposals assume the ethical and professional responsibility to appear at the Annual Meeting and to participate in their presentation or assigned session. When circumstances preclude the author(s) from doing so, it is the responsibility of the author to arrange a suitable substitute and to notify the Program Chair in advance.

Divisions

A - Administration and Leadership
This division is concerned with research, theory, development, and the improvement of practice in the organization and administration of education. Chair: Randall L. Turk, 1845 Fairmount Ave., Witchita State University, Wichita, KS 67220-0142, Randy.Turk@wichita.edu

B **- Curriculum Studies**
This division is concerned with curriculum and instructional practice, theory, and research. Chair: Emery Hyslop-Margison, Ball State University, Department of Educational Studies, Muncie, IN 47306, ejhyslopmarg@bsu.edu

C - Learning and Instruction
This division is concerned with theory and research on human abilities, learning styles, individual differences, problem solving, and other cognitive factors. Chair: Angeline Stuckey, Northern Illinois University, 807 Ridge Drive #712, DeKalb, IL 60115, astuckey@niu.edu

D - Measurement and Research Methodology
This division is concerned with measurement, statistical methods, and research design applied to educational research. Chair: Dimiter Dimitrov, George Mason University, Graduate School of Education, 4400 University Dr., MS4B3, Fairfax, VA 22030-4444, ddimitro@gmu.edu

E - Counseling and Development
This division is concerned with the understanding of human development, special education, and the application and improvement of counseling theories, techniques, and training strategies. Chair: Doug Feldmann, University of Southern Mississippi, Box 5057, Hattiesburg, MS 39406, Doug.Feldmann@usm.edu

F - History and Philosophy
This division is concerned with the findings and methodologies of historical research in education. Chair: Amy Rose, Dept. of Counseling, Adult and Higher Education, Northern Illinois University, DeKalb, IL 60115, arose@niu.edu

G - Social Context of Education
This division is concerned with theory, practice, and research on social, moral, affective, and motivational characteristics and development, especially multicultural perspectives. Aimin Wang, EDP, 118 McGuffey Hall, Miami University, Oxford, OH 45056, wanga@muohio.edu

H - School Evaluation and Program Development
This division is concerned with research and evaluation to improve school practice, including program planning and implementation. Chair: John Fraas, Ashland University, 220 Andrews Hall, Ashland, OH 44805, jfraas@ashland.edu

I - Education in the Professions
This division is concerned with educational practice, research, and evaluation in the professions (e.g., medicine, nursing, public health, business, law, and engineering). Chair: LeAnn Derby, 2354 Fairchild Dr. Suite 4L8, United States Air Force Academy, Colorado Springs, CO 80840, LeAnn.Derby@usafa.af.mil

J - Postsecondary Education
This division is concerned with a broad range of issues related to two-year, four-year, and graduate education. Chair: Katrina Daytner, Horrabin Hall 80J, 1 University Circle, Western Illinois University, Macomb, IL 61455, KM-Daytner@wiu.edu

K - Teaching and Teacher Education
This division is concerned with theory, practice, and research related to teaching at all levels and in-service and pre-service teacher education, including field experience supervision and mentoring. Chair: Kelly Bradley, University of Kentucky, 131 Taylor Ed Building, College of Education, Dept. of Eval. and Policy, Lexington, KY 40506, kdbrad2@uky.edu

Important Dates

Proposal Submission Deadline	**May 1, 2004**
Notification of Acceptance	July 15, 2004
Papers to Session Chairs/Discussants	September 17, 2004
Meeting Registration and Hotel Reservations	September 24, 2004
MWERA 2004 Annual Meeting	October 13-16, 2004

Guidelines for Submitting a Proposal

Session Format Descriptions

Paper Presentation

Paper sessions are intended to allow presenters the opportunity to make short, relatively formal presentations in which they overview their papers to an audience. Three to five individual papers dealing with related topics are grouped into a single session running from 1.5 to 2 hours. The presenter(s) of each paper is (are) allowed approximately 15 minutes to present the highlights of the paper. A single Session Discussant is allowed approximately 15 minutes, following all papers, for comments and critical review. A Session Chair moderates the entire session. Presenters are expected to provide complete copies of their papers to all interested audience members.

Roundtable Discussion/Poster

Roundtable Discussion/Poster sessions are intended to provide opportunities for interested individuals to participate in a dialogue with other interested individuals and the presenter(s) of the paper. Presenters are provided a small table around which interested individuals can meet to discuss the paper. Presenters may elect to provide small, table-top poster-type displays, ancillary handouts, or other table-top A/V materials to augment their discussions. Interested individuals are free to move into and out of these discussions/posters as they wish. Presenters are expected to make available complete copies of the paper on which the roundtable discussion/poster was focused.

Symposium

A symposium is intended to provide an opportunity for examination of specific problems or topics from a variety of perspectives. Symposium organizers are expected to identify the topic or issue, identify and ensure the participation of individual speakers who will participate in the session, prepare any necessary materials for the symposium, and Chair the session. It is suggested, though not required, that the speakers or symposium organizer will provide interested individuals with one (or more) papers relevant to, reflective of, or drawn from the symposium.

Workshop

Workshops are intended to provide an extended period of time during which the workshop leader helps participants develop or improve their ability to perform some process (e.g. how to provide clinical supervision, using the latest features of the Internet, or conduct an advanced statistical analysis). Organizers may request from 1.5 to 3 hours, and are responsible for providing all necessary materials for participants. Many workshops are scheduled for Wednesday afternoon, although others may be scheduled throughout the conference. Organizers may, if they wish, receive an honorarium based upon the number of paid participants in their workshop and the fee schedule.

Alternative Session

The form, topics, and format of alternative sessions are limited only by the imagination and creativity of the organizer. These options are intended to afford the most effective method or approach to disseminating scholarly work of a variety of types. Proposals for alternative sessions will be evaluated on their appropriateness to the topic and audience, their suitability to meet the limitations of time, space, and expense for MWERA, and the basic quality or value of the topic. The organizer of alternative sessions is responsible for all major participants or speakers, developing and providing any necessary materials, and conducting or mediating the session. Because a variety of approaches may be proposed within this category, alternative session proposals should include a brief rationale for the alternative being proposed.

Best Practices Forum

The "Best Practices" sessions are intended to provide opportunities for individuals or groups to present "best" or "promising" practices impacting both K-12 and higher education. These sessions highlight unique and innovative programs that have demonstrated promise for improving and enhancing educational practice. Presenters will be grouped by similar topics to facilitate discussion between and among the groups and audience. Presenters are expected to make available complete copies of the paper on which the "Best Practices" session focused.

Submitted Content

Summary

Summaries for **Paper** and **Roundtable Discussion/Poster** proposals should explicitly address as many of the following as appropriate, preferably in this order: (1) Objectives, goals, or purposes; (2) Perspective(s) and/or theoretical framework; (3) Methods and/or techniques (data source, instruments, procedures); (4) Results and conclusions; and (5) Educational and/or scientific importance of the work.

Summaries for **Symposium, Workshop, and Alternative Session and Best Practices Forum** proposals should explicitly address as many of the following as appropriate, preferably in this order: [1] Descriptive title of the session; [2] Objective, goals and purposes of the session; [3] Importance of the topic, issue, or problem; [4] Explanation of the basic format or structure of the session; [5] Listing of the presenter(s), by number not name for blind review (e.g., Presenter 1), with an explanation of each person's relevant background and role in the session; [6] Anticipated audience and kind of audience involvement.

Abstract

The abstract should be 100 - 150 words. The abstracts of accepted papers will be published in the *MWERA 2004 Annual Meeting Abstracts* book, and will be available on the MWERA website. Use clear, precise language, which can be understood by readers outside your discipline.

Session Descriptors

Ability Grouping
Accountability
Accreditation
Achievement
Action Research
Adaptive Testing
Administration
Admissions
Adolescence
Adult Education/Development
Affective Education
African-American Education
Aging
Anthropology
Aptitude
Artificial Intelligence
Arts Education
Asian Education
Assessment
At-Risk Students
Attitude
Attribution
Bilingual/Bicultural
Business Education
Career Development
Case Studies
Certification/Licensure
Child Development
Classroom Management
Classroom Research
Clinical Education
Cognition
Cognitive Processes/Develop
Collaboration
Community Colleges
Comparative Education
Compensatory Education
Comprehension
Computer Applications
Computerized Testing
Computers and Learning
Conceptual Change
Constructivism
Continuing Education
Cooperative Learning
Counseling
Counselor Training/Supervision
Critical Theory
Critical Thinking
Cross-Cultural Studies
Curriculum
Data Analysis
Decision Making
Demography
Desegregation
Differential Item Functioning
Dimensionality
Dropouts
Early Childhood
Economics of Education
Educational Policy
Educational Reform
Elementary Schools
Equating
Equity
Ethics
Ethnicity
Evaluation
Experimental Design
Facilities
Factor Analysis
Faculty Development
Family/Home Education
Finance
Gay/Lesbian Studies
Gender Studies
Generalizability Theory
Gifted Education
Governance
High Schools
Hispanic Education
History
Indian Education
Indicators/Information Systems
Individual Differences
Information Processing
Instructional Design/Development
Instructional Practices
Instructional Technology
Intelligence
International Education/Studies
Item Response Theory (IRT)
Language Comprehension/Devel
Language Processes
Law/Legal
Leadership
Learning Environments
Learning Processes/Strategies
Life-Span Development
Literacy
Literature
Mainstreaming
Mathematics Education
Measurement
Media
Medical Education
Memory
Mentoring
Meta-Analysis
Metacognition
Middle Schools
Military Education
Minorities
Moral Education/Development
Motivation
Museum Education
NAEP
Networking
Organization Theory/Change
Peer Interaction/Friendship
Performance Assessment
Philosophy
Physical Education
Planning
Politics
Postsecondary Education
Principals
Private Education
Problem Solving
Professional Development
Program Evaluation
Psychometrics
Qualitative Research
Race
Reading
Research Methodology
Research Utilization
Restructuring
Retention
Rural Education
School/Teacher Effectiveness
Science Education
Self-Concept
Social Class
Social Context
Social Processes/Development
Social Studies Education
Sociology
Special Education
Staff Development
Standard Setting
Statistics
Stress/Coping
Structural Modeling
Student Behavior/Attitude
Student Cognition
Student Knowledge
Student Teaching
Studying
Supervision
Survey Research
Teacher Assessment
Teacher Characteristics
Teacher Cognition
Teacher Education/Development
Teacher Knowledge
Teacher Research
Teaching Context
Technology
Testing
Test Theory/Development
Textbooks
Tutoring
Urban Education
Validity/Reliability
Vocabulary
Vocational Education
Women's Issues
Work
Writing

PLACEHOLDER PAGE!

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Memorial Tribute for John U. Ogbu

By Maurice R. Berube, Eminent Scholar of Education
Old Dominion University

John Ogbu was barely over five feet tall. But he was an educational giant whose work on the education of minorities was profound. Ogbu remapped the entire interpretive configuration of minority education. This Nigerian cultural anthropologist who was Chancellor Professor of Anthropology at the University of California/Berkeley died of a heart attack on August 20th during complications from back surgery. He was 64 years old. But he left us in education a sufficient body of work from which to mine his paradigm shifting theories.

Three years ago I published my book, *Eminent Educators: Studies in Intellectual Influence*, on the four most influential figures in American education in the 20th century. I selected the philosopher, John Dewey, the father of American education; the Harvard cognitive psychologist, Howard Gardner, and his theory of multiple intelligences; the Harvard developmental psychologist, Carol Gilligan, and her work on the moral development of women; and John Ogbu and his theory of caste and African- Americans performance in education. Gilligan called Ogbu "her hero"; Gardner sought to have Ogbu teach at Harvard; I found Ogbu to be the most charming of my three interviews for the book.[1]

I first became interested in the work of John Ogbu shortly after the publication in 1978 of Ogbu's classic cross cultural study, *Minority Education and Caste: The American System in Cross-cultural Perspective*. An African-American colleague at Old Dominion suggested that I read Ogbu for a novel way of looking at the problem of Black underachievement in public schools. For the past twenty-five years I have been teaching Ogbu's theories in my doctoral education class.

Moreover, my friend argued that Ogbu reversed the conventional trajectory of anthropologists: rather than studying the culture of the underdeveloped village, Ogbu reversed the pattern and went from the village to the developed societies to study their culture. Indeed, this reversal explains much of Ogbu's thought. For Ogbu had little in common with African-Americans and perceived their plight from a fresh perspective grounded in a strong African and white colonial tradition. In the process, I would argue that Ogbu changed the paradigm of minority education so that his theories of caste and cultural inversion dominant much of the thinking on the education of Black Americans .

So when I came to write my book, *Eminent Educators: Studies in Intellectual Influence,* I had no trouble selecting Ogbu as one of four most profound thinkers in education in the 20th century. I had intended the book to replicate Lytton Strachey's classic *Eminent Victorians* where he chose four outstanding people of that era.

Although we had many conversations on the telephone, we first met in December of 1998 in Philadelphia at his Anthropology convention early one morning. Professor Ogbu had slept late in his tuxedo and received me in bare feet. He answered all my questions jovially, embellishing on each particular point, chuckling as he went along. It was a long interview which I had taped.

Near his bed was a book of Shakespeare's poetry. He informed me that he read poetry every night before retiring. He was most pleasant and gave me a standing invitation to stay at his home should my wife and I visit the Oakland/San Francisco area.

I next met Professor Ogbu when he delivered the keynote speech at Hampton University in Hampton Virginia. My wife and I enjoyed an extraordinarily long lunch with him discussing both life stories and intellectual concerns. He was interested in becoming a crossover public intellectual/scholar as were Howard Gardner and Carol Gilligan and asked my wife, who was both an academic and public intellectual, to co-author a piece for a magazine such as *The Atlantic Monthly*. I presented him with a copy of my book *Eminent Educators* and later he sent a thank you note reiterating the desire to co-author with my wife a popular piece. Ironically, his last book *Black American Students in an Affluent Suburb* was prominently featured in the *Ideas* section of the Saturday *New York Times* on November 30th, 2002. The book was discussed at length and Professor Ogbu was featured in a large photo. He had become a crossover intellectual at last.

Life

Ogbu's life experience was that of a poor African child living in a small village ensconced in an extended family of 17 siblings in a colonial nation dominated by the English. His father was polygamous and his mother had seven of those children. Ogbu was the second member of his family to attend school. At the age of seven he went to live with one of his older brothers.

He attended a Presbyterian high school on scholarship. The school was one hundred miles from his village. Influenced by his high school principal, a Nigerian who had obtained a medical degree, Ogbu initially wanted to be a doctor and a missionary like his mentor. He went on to a Presbyterian teachers college and taught for two years in a missionary high school.

Studying for the ministry he was sent to Princeton Theological seminary in the United States. There his interests took him to anthropology to learn more about his native Africa. It

was a turning point in his life and he changed career goals to become an anthropologist and never looked back. He went on to the University of California at Berkeley receiving both Masters and doctorate degrees.

Caste Theory

In 1978 Ogbu published *Minority Education and Caste: The American System in Cross-cultural Perspective* with an obscure press (Academic Press). Ogbu offered a new theory —caste theory—on why African-Americans fail in school. He dismissed all other theories. Slowly the book gained adherents and a decade later the *New York Times* would herald an "emerging theory" that was capturing the attention of African-American scholars.[2]

Ogbu argued that African-Americans are treated by the white majoritarian society in the United States as a "pariah caste".[3] "The dominant group", he writes, "usually regards (blacks) as inherently inferior".[4] As a sub-text, he further argued that African-Americans often internalize the negative attitudes projected upon them by white America.

Minority Education and Caste combines two different methodologies. First, Ogbu provides a sophisticated review of the literature to reach an original and new interpretation of why blacks fail in school. Second, he combines this literature review with data he collected in an anthropological sit in Stockton, California. The Stockton study took place from 1968 to 1970 with follow up visits in subsequent years.

In the literature review Ogbu examined the status of castes in six countries. He divides these countries into two groups: same race and different races. Same race countries with castes include India and the Untouchables, Israel and Oriental Jews, and Japan and the Burakimi. Different race castes include Britain and the West Indians, New Zealand and the Maori, and the United States and African-Americans. He finds that these societies impose caste barriers in schooling and employment to the minority community.

Interestingly the Burakimi when transposed to the United States "appear to have increased their efforts in both scholastic and economic pursuits" since they are "not overwhelmed by the traditional prejudices and discrimination" they faced in Japan.[5]

Ogbu has a corollary thesis to his caste theory. He distinguishes between voluntary and involuntary minorities. He finds that involuntary minorities have as their point of reference the majoritarian society and have difficulty in breaking caste barriers. Voluntary immigrants have as their point of reference the harsh society that they so willingly left and have more of a propensity to accommodate to the traditions and rules of the majoritarian society and succeed in school and jobs.

Minority Education and Caste was not reviewed in intellectual or popular journals but received respectful reviews in two academic journals, *American Anthropologist* and *Contemporary Sociology*. Writing in the latter Ray C. Rist credited Ogbu with one "of the most perceptive critiques of American race relations".[6] Later, however, Ogbu would be dismissed by African-American civil rights leaders as being "overly pessimistic".[7] And two years ago I asked the African-American sociologist, William Julius Wilson, at a conference at Old Dominion University about Ogbu's work and he, too, answered that he felt Ogbu's work was "overly pessimistic".[8] On the other hand in my interviews with Ogbu, he in turn, dismissed much of Wilson's work because he felt Wilson did not study "the black community sufficiently".[9] From the right, Ogbu was attacked in the 1994 book, *The Bell Curve*, by Richard J. Hernstein and Charles Murray for having "a more specific version of the argument of cultural influence on IQ" that they argue does not merit attention.[10]

Other critics of the caste theory cite four main points against Ogbu's interpretation: 1) that there exists "exception" whereby some involuntary minorities succeed in school; 2) that Ogbu ignores major cultural differences among his caste example; 3) that Ogbu does not sufficiently discuss class as a major contributing factor to school failure; and 4) that Ogbu focuses excessively on education as a means to social mobility. However, anthropological research since *Minority Education and Caste* have substantiated much of Ogbu's research on caste (see Berube's *Eminent Educators*). The criticism somehow affected Ogbu and in reviewing my chapter he changed many references to caste as "caste-like".[11]

Ogbu's relationship toward the Civil Rights Movement during the 1950s and 1960s was that of "essentially an observer" who was nonetheless sympathetic and "very happy" of the successes of the movement.[12] But he commented in the interview with me that African-Americans made significant gains only "in periods of crisis".[13] Regarding the leadership of Martin Luther King Jr. and Malcom X, he sympathized with "the effectiveness of both".[14]

Acting White

Ogbu's cultural inversion theory was validated with his doctoral student, Signitha Fordham's dissertation on black students refusing to study for fear of being perceived by their peers as "acting white". Co-authored with Ogbu, the "acting white" study received a great deal of coverage including the popular press.

The study was conducted in a Washington D.C. high school which was 99 per cent black and mostly poor. They found that academically talented black students shunned studying hard and engaging in behaviors they deemed were "white". These included obtaining good grades, listening to classical music, attending symphonies, reading and writing poetry, and visiting art museums. Blacks engaged in these behaviors were regarded by their peers as "braniacs" and "not truly black".[15] Some conservatives found a new reason to blame the victim for school failure. However, Fordham and Ogbu were clear that the victim was not wholly to blame, that indeed, school failure of bright black students was "be-

cause white Americans traditionally refused to acknowledge that blacks are capable of intellectual achievement".[16]

Middle Class Blacks

Ogbu's next –and final—milestone was the publication of his study of middle class black students. *Black American Students in an Affluent Suburb* is a study of affluent Black students in Shaker Heights, Ohio. With the publication of his new book, Ogbu moved on to study the education of affluent African Americans. And while he saw his model of caste and cultural inversion present in middle class Black students, he also saw a pattern whereby these students adopted a "low effort syndrome". "Black students", he wrote, "did not generally work hard …(and)… in fact most appeared to be characterized by *low-effort syndrome*."[17]

This was a startling and controversial conclusion that cut against the grain of prevailing theories of the education of middle class students. What makes Ogbu's work so hard to refute is that they consist of anthropological sits of significant duration (the Shaker Heights study was eight months of data collection) that go beyond simple surveys and statistical multiple regression studies of test results. It involves the qualitative process of *triangulation*: correlating interviews, analyzing documents, and most important, observing in the field.

Who was to blame? Everyone. Expectations of teachers and administrators were low; expectations of parents were high but the parents did not involve themselves with their children's education as do white parents for lack of knowledge of how the educational process really operates; and the students themselves sought to get by undetected under the radar with little effort.

Black American Students in an Affluent Suburb will stand as a classic along with Ogbu's first book *Minority Education and Caste*. Ogbu made a major contribution to the scholarship in education.

John U. Ogbu received many awards during his lifetime. Of special interest to this group, Ogbu received the Distinguished Contribution to Research in Education Award from the American Educational Research Association in 1998. Professor Francesca Gabbo of the University of Turin, a former student of Ogbu, was preparing an international edition of a scholarly journal on his work when he died. He will be missed.

Notes

1. Maurice R. Berube, Interview with Carol Gilligan, Harvard University, October 14, 1998.
2. Daniel Goleman, *An Emerging Theory*, New York Times Education Supplement, October 17, 1988, p. 22.
3. Maurice R. Berube, Interview with John U. Ogbu, Philadelphia, PA, December 3, 1998.
4. John U. Ogbu. *Minority Education and Caste : The American System In Cross Cultural Perspective*. New York: Academic Press, 1978, p.23.
5. Ibid., p.320.
6. *Book Review Digest*, 8 vol. 1, January 1979, p. 93.
7. Goleman, *An Emerging Theory*.
8. Maurice R. Berube, Interview with William Julius Wilson, Old Dominion University, Norfolk, VA, January 15, 2000.
9. Maurice R. Berube, Interview with John U. Ogbu.
10. Richard J. Hernstein and Charles Murray, *The bell curve : Intelligence and class structure in American life*. New York: The Free Press, 1994, p.307.
11. Maurice R. Berube, Interview with John U. Ogbu.
12. Ibid.
13. Ibid.
14. Ibid.
15. Signithia Fordham and John U. Ogbu, Black Students School Success : Coping with the Burden of 'Acting White', *The Urban Review*, *18*(3) 1986 p. 188.
16. Ibid., p. 177.
17. John U. Ogbu, *Black Students in an Affluent Suburb*. New York: Lawrence Erblaum, 2003, p. 17.

Rethinking Schooling as Academic Development

Patricia A. Alexander
University of Maryland

Abstract

The Model of Domain Learning (MDL) is described as a means of studying academic development or the systematic changes that occur in learners as a consequence of formal education. The differences between the MDL and traditional theory and research in expertise are overviewed, along with the components and stages of the model. Implications of the work in academic development and the MDL for educational research and practice are considered.

When I left my position as a public school teacher to pursue a doctoral degree, I had a clear goal in mind. I wanted to acquire the knowledge and skills that would allow me to serve my students better. I wanted them to be all they could be academically. I have never been disappointed with this decision to pursue a higher degree or, more accurately, the knowledge and experiences that came with that pursuit. However, since that momentous decision, I have become increasingly aware that the understandings I was acquiring did not directly address one of the most basic questions about learning: "What does it mean to become well educated?" In effect, how do we measure academic development?

Questions about students' educational development may seem strange in this age of high-stakes testing, accountability, and "yearly academic progress" (The Elementary and Secondary Education Act, No Child Left Behind Act; PL 107-110; 2002). Working with public school teachers and administrators, I am well aware of the tremendous pressures they are feeling—pressures to ensure that their student populations achieve acceptable levels on key state and national assessments. Indeed, the emotional, educational, social, and political investments being made in industrial and post-industrial societies in standards-based education and the associated test movement are extensive.

Yet, rather than render questions about academic development meaningless, these on-going educational initiatives only serve to exacerbate the need to reconsider what it means to be well educated within industrial and post-industrial societies like the U.S. In fact, I will argue here that the almost obsessive focus on basic standards and accountability in the public and political realms may be serving to undermine the very abilities, attitudes, and processes that are indicative of well-educated and academically sophisticated learners. I am not alone in this perception (Feinberg, 1988). The high-stakes testing and accountability movements now in place have become formidable wedges between educators and the public at large. They have also created serious tensions within the educational research community. On the one hand, there are those like me who see these current foci as detrimental to academic development (House, 1996; Wolf, 1998). On the other hand, there are those in both political (Reyna, in press) and academic arenas (Hirsch, 1996) who see the public outcry for standards and accountability as a critical opportunity for reforming and reframing the educational experience.

Wherever your views fall in this debate, there is no denying that those of us in educational research deserve some of the blame (or credit) for the testing movement in this country. What characterization of academic development have we, as educational researchers, offered as reasonable counters to basic skills measures or accountability notions? What more coherent and comprehensive picture of learner growth and development have we framed after decades of theory and research?

In response to those provocative questions, my intentions herein are three-fold. First, I present the study of academic development as a platform for rethinking current educational initiatives. Second, I offer the Model of Domain Learning or MDL (Alexander, 1997) as an approach to studying academic development. Third, I outline implications of the emergent literature on academic development and the MDL for educational research and practice.

The Meaning and Importance of Academic Development

Throughout this discussion, I use the term *academic development* to represent to systematic changes in students' understanding of academic domains (e.g., history, reading, or mathematics) that arise as a result of formal learning. Although formal learning does not take place only in the classroom (Cole, 1996), schools are cultural institutions with the express mission of educating societies' members (Dewey, 1916/1944) and for which participation is both long-term and mandatory. Further, even though societies concentrate their resources on the education of children and youth, formal learning continues throughout life. For that reason, models of academic development must accommodate the systematic changes that occur prior to, during, and after mandatory schooling.

Beyond any general appeal, there are several viable reasons for the educational research community to invest in the study of academic development. For one, the study of academic development could help us answer the question of

what it means to become well educated. In addition, academic development frames schooling within a longitudinal, developmental perspective—a perspective that stands in sharp contrast to the discrete, discontinuous approach manifest in the basic-skills and accountability movements. Moreover, while the concept of academic development supports efforts to ascertain the effectiveness of the educational experience, it acknowledges the importance of both cognitive and non-cognitive forces in effective learning. Finally, I would argue that the study of academic development is a moral imperative. As noted, the formal educational experience not only encompasses years of our lives, but is it also mandated by law. However, despite its long-term, mandatory, and pervasive nature, we still understand little about what should be realized in terms of cognitive and non-cognitive factors as a result of this experience.

The Model of Domain Learning

For the past ten years, I have become increasingly invested in the study of academic development through the articulation and empirical validation of the Model of Domain Learning or MDL (e.g., Alexander, Jetton, and Kulikowich, 1995; Alexander, Murphy, Woods, Duhon, and Parker, 1997; Murphy and Alexander, 2002). The MDL is a theoretical model that attempts to predict the changes that unfold in students' knowledge, interests, and strategic processing as they journey toward expertise in academic domains. This model builds on decades of theory and research in development, knowledge, strategic processing, motivation, and expertise by many within the educational research community.

MDL and Traditional Models of Expertise: Seven Points of Contrast

Even though the MDL draws on the extensive literature in expertise, it differs from earlier generations of that work in important ways. Seven fundamental differences can be identified.

1. Past generations of research on expertise grew out of the fields of artificial intelligence (AI) and information-processing theory (IPT; Anderson, 1983; Newell and Simon, 1972). These researchers studied performance on carefully chosen or specifically crafted problems, often under tightly controlled laboratory conditions. The intention was to create a "smart machine" that could approximate simple human behaviors or to identify abilities and processes that could be trained in novices (Holyoak, 1991). The MDL, in contrast, is part of a new generation of expertise models (see Alexander, 2003c) that are expressly concerned with the fostering of more successful, smarter students (e.g., Garner and Alexander, 1989; Judy, Alexander, Kulikowich, and Willson, 1988).

2. Traditional expert/novice researchers were in pursuit of fundamental principles of problem solving that would apply to a multitude of tasks in multiple domains. For that reason, those researchers investigated diverse tasks (e.g., chess, waiting tables, and typewriting) that have seemingly little in common with typical academic problems and domains (Allard and Starkes, 1991; de Groot, 1946/1978; Gentner, 1988). The MDL deals specifically with text-based learning in academic domains, such as mathematics or science.

3. Traditional expert/novice researchers were not interested in motivational or sociocultural factors, but remained "coldly cognitive" in their orientation (Pintrich, Marx, and Boyle, 1993). They looked only at knowledge or problem-solving strategies to explain expertise. Within the MDL, my colleagues and I have chosen to consider how learner interest works with cognitive forces to either propel individuals forward in their academic journey or hold them back.

4. Past generations treated the concept of expertise dichotomously. In effect, one was conceived as either a novice *or* an expert, with nothing in-between (Allard, and Starkes, 1991; Bransford, Brown, and Cocking, 1999). Within the MDL, we identify three stages in expertise development: acclimation, competence, and proficiency/expertise.

5. Traditional expert/novice researchers seemed to operate under the misguided belief that all students could become experts. The more realistic view adopted by the MDL is that few individuals will ever move beyond competence (Stage Two) due to cognitive demands and the long-term personal commitment required to reach expertise (Ackerman, 2003; Bransford, et al., 1999). However, all students can make significant progress in the journey toward increased competence.

6. The early expertise literature left one with the impression that the mandatory school experience could result in expertise in academic domains (Alexander, 2003b). By comparison, the MDL is predicated on the assumption that the K-12 system is not equipped to prepare experts in any academic domain (e.g., Alexander, 2000; Bransford et al., 1999). To the contrary, expertise in academic domains demands experiences that are beyond the scope of the K-12 system (Sternberg, 2003). However, schools can do a great deal to foster competence in students by establishing a foundation for academic development (Bereiter and Scardamalia, 1993).

7. In past generations, expert performance was the end that was sought (Alexander, 2003a). Within the MDL, it is the process of change that matters as much as the product. It is the gradual transformation in students' knowledge, interests, and strategic processing that brings about the documented differences between those in acclimation and competence, and those in proficiency.

The Components and Stages of the MDL

Three dimensions frame the MDL, subject-matter knowledge, interest, and strategic processing. *Subject-matter knowledge* represents both the breadth (domain knowledge) and depth (topic knowledge) of understanding relative to a specific domain (Alexander, Schallert, and Hare, 1991). *Interest* refers to learners' underlying needs or desires (Ames,

1992; Dweck and Leggett, 1988), whether that interest represents a long-term investment or deep-seated association with the domain (individual interest) or a temporary arousal triggered by environmental conditions (situational interest; Hidi, 1990; Schiefele, 1991).

Strategic processing, the third dimension, encompasses both general cognitive procedures (e.g., summarization) and metacognitive or self-monitoring strategies (e.g., self-testing or self-evaluation; e.g., Garner and Alexander, 1989; Weinstein and Mayer, 1986). Two forms of strategies play a role in academic development, surface level and deep processing (Alexander, Sperl, Buehl, Fives, and Chiu, 2002; Murphy and Alexander, 2002; VanSledright and Alexander, 2001). *Surface-level strategies* (e.g., skipping unfamiliar words) are involved in the basic comprehension of domain-specific texts. *Deep-processing strategies* (e.g., questioning the evidence) entail the transformation or elaboration of the textual message.

These various dimensions of the MDL behave differently across the three stages of development. For instance, because students in acclimation demonstrate limited and fragmented domain and topic knowledge, they predictably have trouble distinguishing relevant from irrelevant information, accurate from inaccurate or misleading content, and significant from trivial data (Jetton and Alexander, 1997).

Further, the majority of domain-specific problems that learners in acclimation encounter will be novel and challenging, requiring them to exert a great deal of strategic effort. Thus, there are many occasions when learners must engage in strategic processing in order to assist their understanding and facilitate their performance. Moreover, because those in acclimation are attempting to establish an initial foothold in the domain, a good portion of the strategies they will employ are surface-level in nature (Alexander et al., 2002). Although the occasions will be relatively infrequent, learners in acclimation may manifest the ability to think deeply about the problem at hand. Such cases of deep processing may arise because of highly-effective context or because of learners' personal knowledge of or deep investment in a topic.

It is also predicted that individual interest and situational interest follow divergent paths within acclimation. In particular, the influence of situational interest should be strong in the initial period of acclimation, as those in this stage rely on situational interest to focus their attention, stimulate their engagement, and sustain their performance (Mitchell, 1993). In contrast, effects of individual interest on student learning would be relatively non-existent, since these learners have little knowledge of the domain—knowledge that would be necessary to sustain the long-term investment indicative of individual interest (Guthrie, et al., 1998).

With the onset of competence, there are quantitative and qualitative shifts in an individual's knowledge base, strategic processing, and interest (Alexander and Murphy, 1998). For example, competent individuals have acquired more domain and topic knowledge and that knowledge has become more interconnected (i.e., more principled) in form (Gelman and Greeno, 1989). Along with that transformation, competent learners demonstrate the ability and willingness to perform strategically on domain problems that are becoming more familiar to them (Alexander and Judy, 1988; Garner, 1990). Because of this increased familiarity and the level of automaticity or fluidity that results from continued practice and exposure, these competent learners can also apply both deep-processing and surface-level strategies as warranted by the situation (Alexander, Graham, and Harris, 1998).

Finally, along with the changes in knowledge and strategies comes a rise in competent learners' personal identity with and interest in the domain (Alexander, 1997). As a result, these individuals become increasingly less dependent on the features of and resources in the immediate context to stimulate their performance (Alexander et al., 1995). In effect, I have speculated elsewhere that personal interest becomes a driving force in individuals' continued journey toward expertise within the competence stage of academic development (Alexander, 1997).

The importance of the interplay between knowledge, interest, and strategies becomes most evident in the final stage of academic development, proficiency. Specifically, those who reach proficiency must exhibit highly rich and principled knowledge, effective and efficient use of strategies, particularly deep-processing strategies, as well as a deep and long-term personal identification with the domain (Alexander, 1997). For example, a distinct rise in subject-matter knowledge should result because domain experts both continue their pursuit of domain knowledge and are actively engaged in *problem finding* (Alexander et al., 2002). Further, their problem-solving fluency or automaticity with common domain tasks allows them to dedicate time and mental energy to more complex and novel problems—problems that could push the boundaries of the domain itself. Because of such pursuits, the influence of strategic processing is high within proficiency or expertise, although the bulk of those strategies are predicted to be almost exclusively deep-processing in nature. This active pursuit of domain-transforming ideas is also evidence of the abiding interest and personal identity that experts have with their chosen domain (Csikszentmihalyi, 1990; Renninger, 1992). This "motivation from within" allows those in proficiency to maintain their interest even when they encounter frustrations or barriers to performance.

Implications of Academic Development and the MDL for Research and Practice

With this overview of the components and stages of the MDL in place, I want to discuss some of the potential implications of this work both for educational research and educational practice. I have had the chance to share these implications in more detail elsewhere (e.g., Alexander,

2003a, 2003b, in press). Thus, I will simply highlight some of those ramifications here.

Rethinking Academic Progress

As I attempted to argue from the outset, we have an obligation to ascertain what manner of changes our children and youth should experiences as a consequence of their formal and mandatory educational experience. Rather than just bemoan the current obsession with standards and high-stakes testing, we need to frame an alternative. I propose that we, the educational research community, bring our considerable knowledge, interests, and strategic abilities to bear on ascertaining the specific nature of academic development. The time and energy required to perform this task will likely be extensive, but that would be time and energy expended in service of a laudable goal.

Infusing Human Motivation in the Achievement Equation

Although the MDL pays tribute to knowledge and strategies, mainstays of traditional models of expertise, the MDL and other contemporary theories and models of expertise remind us that motivation factors are central to continued learning and development (Ackerman, 2003). We cannot continue to evaluate the effects of schooling without considering the role students' goals, interests, and self-beliefs play in their success or struggles. To do so is to base significant judgments only on partial data. Thus, to remove motivation from the educational equation is to risk making invalid determinations about the benefits of educational initiatives and interventions.

Profiling Successful and Struggling Learners

The multidimensional character of academic development suggests that simplistic categorizations of learners as "good" or "poor," "successful" or "struggling" are unwarranted. Rather, diverse profiles of success are needed that mirror the interplay of knowledge, interest, and strategic processing within and across stages of development (Ackerman, 2003; Sternberg, 2003). For example, based on MDL research, my colleagues and I have described six profiles that represent varying degrees of academic success or struggle (Alexander and Murphy, 1998).

Specifically, there are highly competent learners who manifest high levels of knowledge, interest, and strategies when engaged in school learning. Another relatively successful group consists of the effortful processors (Alexander, Kulikowich, and Schulze, 1994). This group exerts high levels of strategic effort to gain understanding, even in those situations when others would falter. In contrast to effortful processors are knowledge-reliant learners. These individuals rely on their pre-existing knowledge to pull them along academically. Because of this tendency, these individuals may well struggle once the demands of schooling exceed the knowledge they have already managed to acquire (Alexander and Murphy, 1998). For non-strategic processors, the source of learning difficulties resides in their limited strategic knowledge (Paris, Wasik, and Turner, 1991; Winne, 1995; Zimmerman, 1995). In effect, they do not have the extensive strategic repertoire required as learning tasks become more challenging. While resistant learners may well have the knowledge and strategies that academic development requires, they lack the interest or willingness to engage those resources (Garner and Alexander, 1991). In effect, their failure to thrive academically is partially of their own choosing. Finally, there are the seriously challenged. These learners suffer from a complex of problems, including little relevant knowledge, a limited strategic repertoire, and apathy or disengagement in school tasks.

I hold that recognizing these various profiles of more or less successful academic performance can improve the nature of schooling in multiple ways. For instance, these profiles will serve to remind educators, policy makers, and the public that basic skills are not the sole predictors of academic success. In addition, the dimensions incorporated in those profiles can guide the construction of comprehensive assessments that monitor students' knowledge, strategic, and interest. The presence of these diversified profiles also suggests alternative models of intervention that could be pursued for those who are not flourishing within the existing academic setting.

Concluding Thoughts

It seems hard to believe that educational researchers, policy makers, and the public at large still understand little about the systematic cognitive, motivational, and sociocultural changes that should result from schooling, even though almost all members of industrial and post-industrial societies have many years of formal education in common. As just outlined, there are many reasons to invest ourselves in the study of academic development. Rethinking education as academic development finally casts learning as a long term, multidimensional, and complex process that cannot be captured by basic standards or coldly cognitive approaches. It is my hope that the educational research community will become proactive in the study of academic development and initiate the interdisciplinary, longitudinal problems of research that can finally address the question: What does it mean to become well educated?

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