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Research Tool Exam

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Wade, Fauske, and Thompson (2008) Part I: Description of the Study

Wade, Fauske, and Thompson (2008) seek to determine the educational effectiveness of peer-led computer-mediated dialogue in enabling critically reflective problem solving by nine undergraduate students exploring ideas related to English Language Learners within the context of a particular university-based blended teacher education course.

The theoretical framework guiding this study uses concepts related to critical theory and multicultural education. The authors work within the context of an Interpretivist epistemology, which rejects positivist notions of objective reality and universal truth, in favor of a narrative nature of knowing which emphasizes the vital role of storytelling and peer dialogue, within the context of community, in knowledge creation and critical reflection. The authors duly acknowledge the work of Dewey, especially regarding how open-mindedness and critical inquiry inform reflective thinking. The authors tentatively recognize the potential of computer-mediated dialogue, particularly asynchronous forms, to support critical reflection.

This research is a self-study, a methodology rooted in critical theory, which values thoughtful reflection as a basis of validation. Discourse analysis is deployed to analyze the informants' text-based discussions, seeking to understand ways that social and political dominance, especially those related to deficit theories, are revealed. Two authors also integrate reflective dialogue between themselves with their interpretation of the data. Self-study nurtures praxis -- action informed by reflection -- which well serves the authors' intentions.

Wade, Fauske, and Thompson conclude that a few instances of reflective problem solving were evidenced throughout the computer-mediated dialogue. However, despite having nearly completed their program of study, most informants tended to engage technical-rational problem solving frameworks and express ideas exposing their belief in deficit theories regarding English Language Learners, thus revealing a general lack of critically reflective problem-solving.

Wade, Fauske, and Thompson (2008) Part II: Critical Evaluation

Wade, Fauske, and Thompson (2008) are writing as postmodern critical researchers and transformative educators; they “seek to promote social change that would create equality for minority groups and to explain reasons for inequality” (p.408). This postmodern notion of transformation of self and other, through dialogue intent on deconstructing difference, is the philosophical stance at the heart of this study. Thus, the philosophical underpinnings of this study are duly rooted in postmodern, feminist, and multicultural theories of difference, which are effectively positioned by the authors to frame their central problem: How can online dialogue be deployed to enable prospective educators to critically reflect on the importance of honoring and valuing difference in English Language Learners (ELLs)?

The authors employ an Interpretivist epistemology -- certainly influenced by the work of Vygotsky, Wittgenstein, and Rorty -- which ultimately rejects positivist notions of objective reality and universal truth. The design of the study appropriately reflects Interpretivist ideas about the relative and transitory nature of truth, and the function of language as expressing truth only within a local context. Wade, Fauske, and Thompson claim that “we need to understand what we might do differently in our own practice to prepare teachers who can teach students of all backgrounds” (p. 414). The notion that students from different backgrounds, speaking different native languages, may have truths different from and equally valid to their teachers’ truths serves to reflect an Interpretivist consensus theory of truth. The authors claim that “without a critical stance, consensus building could become repressive, silencing alternative interpretations and questions” (p. 401) when justifying the importance of nurturing critical reflection in their students. Thus, the study is also informed by critical social theory, as the authors seek to reduce the influence of the cultural domination central to the deficit theories sometimes taken on by teachers of ELLs.

Wade, Fauske, and Thompson provide ample support for their choice of the self-study methodology by articulating theoretical support for its major features. The authors review literature relevant to phenomenology and the nature of experience, which substantiates their “calls for stories about group members’ teaching experiences with ESL students” (p. 421). Thus, this work is informed by feminist theory, especially in that it gives voice to both the research subjects and the researchers by way of letting them tell stories about themselves. The literature review is used successfully to sustain the study’s reliance on narrative stories as reflecting the researchers’ and informants’ lived experience in the classroom. The authors glean from the literature excellent operational definitions of concepts central to their self-study design, including critical reflection, and establish its role in identifying social justice issues related to education.

The authors neglect to address the historical development of the self-study research methodology or the controversy over the theoretical development of self-study as a legitimate form of research; while this type of naturalistic approach to research may be coming into vogue today, this certainly was not always the case. The primary theoretical controversy emerged with the rise of the reconceptualist movement, particularly Pinar’s model of *carrere*, which highlights the role of autobiography in reporting the experience of the individual in educational contexts. Self-study in educational research has only recently attained mainstream acceptance; in fact, my review of the literature suggests that Wade, Fauske, and Thompson’s work is the first self-study the *American Educational Research Journal* has ever published!

The authors aptly include statements about Wade’s past experiences, which effectively acquaints the reader with the research topic, the setting, and the informants. The authors state that Wade has “taught graduate and undergraduate courses on literacy and inclusive education” (p. 410), which appropriately establishes Wade’s familiarity with the topic of the self-study.

Justification for using Wade's classroom as the research site is well explained; the setting is suitable for self-study because Wade "was responsible for planning, facilitating discussion in class, defining the discourses expected in class, and grading" (p. 410). Given the nature of a self-study, a full-bodied discussion of the measures taken to gain initial access to the research site, typical of most qualitative research, was not necessary in this case.

Wade, Fauske, and Thompson adequately explain the roles of Fauske's and Thompsons' involvement with the research study, which were limited to data analysis and self-study dialogue respectively. However, the authors claim that Fauske and Thompson, "as nonparticipants, were potentially less biased in the analysis process" (p.410). While this claim may be reasonable, it would be better justified if the researchers had explicitly described the history and nature of their relationships prior to becoming co-authors. For example, the bylines indicate that both Wade and Thompson teach at University of Utah, but their respective rank and department affiliation are not indicated. Wade's history of interaction with Fauske, who teaches at University of South Florida, should have been elucidated as well.

The authors do not explicitly justify the selection process for their informants; students volunteered to participate in the blended course section that was the site of the study. Wade, Fauske, and Thompson, wisely, did not attempt to randomly select students for enrollment in the online section; this lack of random assignment is consistent with best practice in qualitative study. Wade "met with students in their classes earlier in the year" (p. 410) to describe the features of the study and solicit volunteers. However, the authors miss an opportunity to explain why the direct personal recruitment of volunteers into her study by Wade may be problematic, given the power differential between Wade, a professor, and her informants, seniors approaching graduation.

All of the research subjects “were White” (p.410). The authors do not provide the reader any insight into the ethnicity of students in the other section of the course, or of the university in general. The inclusion of only White students may be appropriate to this study, given the authors’ interest in teaching prospective teachers to transcend White hegemony as they learn to leverage the diversity of ELLs in deploying effective pedagogy, although it may have been interesting to have some minority students participate as well. The authors explicitly acknowledge their receipt of Institutional Review Board (IRB) approval for the study, although they do not indicate the specific steps taken to acquire permission, nor do they explicitly address issues regarding maintaining data confidentiality or protecting the identity of their informants.

The authors report that the data analysis was performed only on documents -- “printouts of the weeklong dialogue for the two online groups” (p. 412). The reader is left to assume that the data were collected via a course management system (CMS). The authors should have at least indicated which CMS was deployed, because the design of the user interface and other features may have influenced the level of student engagement.

Wade, Fauske, and Thompson used discourse analysis techniques to analyze the data, including text-level, sentence-level, and word-level analysis. The authors aptly created a typology of multicultural education “Discourses”, quite suitable to this study, by which they sorted the data into categories for analysis. The authors formed their typology based on their competent review of the research literature on multicultural education. The authors, aware of the importance of establishing validity for qualitative research, openly acknowledge one limitation of the study, writing that “playing the dual role of instructor and researcher raises issues of reliability and validity” (p. 435). They wisely chose to use the criteria of validity proposed by Gee’s (1999) widely cited work *Introduction to Discourse Analysis*, offering a theoretically

grounded alternative to the traditional criteria for judging quantitative research, which builds on the seminal work of Lincoln and Guba in redefining validity for qualitative research. The use of discourse analysis, which understands the meaning of language as being socially and contextually constructed, is an appropriate method to analyze the data, given the relativism suggested by the authors' Interpretivist framework.

The analysis of the data was interwoven with self-reflective dialogue between authors Wade and Thompson, which included themes, impressions, speculation, and problems related to the informants' recorded written discussion posts. The authors understand dialogue as "learner-centered and participatory" (p. 399), a notion that is theoretically grounded by Habermas' thinking regarding the essential role of dialogue in deconstructing difference. The authors wrote that "having two researchers analyze the data allowed us to compare our analyses and to negotiate interpretations" (p. 413). This method enabled the researchers to confirm the validity of their findings by way of Gee's "agreement" criterion.

Unfortunately, Wade, Fauske, and Thompson did a poor job of providing robust theoretical support for the online asynchronous discussion feature of the study, a weakness they do not acknowledge. Perhaps most egregious is their dated review of the research literature specifically related to online teaching and learning, which is mostly comprised of research reports published in the mid-1990s. The authors overlook the most salient research related to the potential of asynchronous online discussions published in the years immediately preceding their study. It seems that the authors appropriately reviewed the literature focusing on postmodern perspectives and themes, e.g. otherness and power hierarchies, but focused insufficiently on the vast body of practical literature generated by the logical positivist camps. This flaw seriously impacts Wade's design and implementation of the CMD aspect of the study, and ultimately

affects the authors' ability to provide the reader with insightful conclusions specifically related to the influence of CMD on their students' ability to engage in critical reflection enabled by peer-led dialogue.

The authors' lack of knowledge of the contemporary developments in online learning theories and practices is exposed in a dialogue between Wade and Thompson. They wrote:

"I wonder if that isn't harder to do online because in the classroom, when students are face-to-face, they can see each other's hesitations, they can see each other's body language" (p. 432).

This statement betrays naïveté regarding widely disseminated research findings suggesting the ability of well-designed online learning environments to sufficiently convey meaningful social presence and to support higher order communication and critical thinking skills.

One of Wade's fundamental errors in the design and implementation of the course's online discussions relates to the timeline of engagement. The course's online asynchronous discussions were one week in duration, which is not atypical. However, several of the informants chose to begin their participation very late in the week. For example, the authors report on informant Angie's "one and only post (Day 6)" (p. 426). Informant Mary made her first post on "Day 7" (p. 428), as well as her single response to another learner; "later that day (Day7), Mary addressed a message to Rod" (p. 429). Online learners waiting until the end of the discussion period to post is a widely recognized phenomenon, and a more comprehensive review of the research literature would have enabled Wade to implement some straightforward course design devices for stimulating dialogue participation earlier in the week, which may be essential given the theoretical importance of peer dialogue in critical reflection. The act of reflection takes time, and Wade failed to deploy discussions intentionally designed to provide all the informants with adequate time to participate in critically reflective dialogue with their peer learners. Given this

design flaw, it's not surprising that the authors found a general lack of critically reflective problem-solving by the informants. So, this leaves open the question of the degree to which the poorly designed discussion participation parameters impacted the informants' ability to demonstrate their critically reflective problem solving skills.

Another implementation decision which may have negatively impacted the study is the decision by Wade to not contribute at all to the online discussions. According to the authors, "the decision not to participate also allowed Suzanne to see whether participants in the online discussion would exhibit the kinds of thinking and problem solving that had been modeled and encouraged in class" (p. 412). However, the authors once again justify this decision by appealing to dated literature. Granted, the degree of importance of instructor participation in asynchronous discussions may yet be debatable, but current research literature strongly suggests that a complete lack of instructor participation is typically quite detrimental to both learner engagement and the achievement of learning outcomes. In this case, Wade could have provided some instructive collaboration without necessarily compromising the "peer-led" aspect of the discussions. This opens another question for future research: To what degree might instructor presence stimulate critical reflection by learners in online learning environments?

But certainly, all is not lost! Wade, Fauske, and Thompson's deployment of reflective dialogue to describe their own experience -- their authentic voice -- as they analyze the data is brilliant. The authors write that "our interpretations of the data and conclusions should be thought of as tentative and open to revision" (p. 435), which appropriately reiterates their epistemological bottom line; that an objective analysis is impossible given the Interpretivist theoretical framework.

Wade, Fauske, and Thompson use their own dialogue to skillfully acknowledge their own possible responsibility regarding the deficiency of critically reflective problem-solving demonstrated by their students. They ask: “Is there a way that teacher education either inadvertently sets that up and then doesn’t protect the students or could protect them more so that they will take those risks?” (p. 429). While their findings suggest the inflexibility of the informants’ viewpoints regarding the use of deficit-based frameworks to understanding ELLs, the researchers avoid the behaviorist trap of faulting their informants. Rather, the authors are willing to acknowledge the possibility of their own culpability as educators.

The authors utilize their dialogue to generate insightful ideas about improving their own classroom performance: “So something has to change in the class dynamics such that you’re not simply asking students to perform in ways that demonstrate their authority and competence” (p. 433). This type of intentional change suggests that Wade’s self-study has succeeded in sustaining praxis, which is meaningful action informed by reflection. This finding ultimately serves a primary purpose of self-study: to improve educational interaction with the learner by way of increased self-understanding. Terrific!

Wade, Fauske, and Thompson claim that they “have tried to retain the flavor of the spoken conversation”, and that “the dialogue as it appears here has been edited for clarity and flow” (p.414); however the reader is not offered any substantial evidence to support this claim. Perhaps the inclusion of the unedited transcripts of the researchers’ conversations in an appendix would adequately support this claim by providing the reader with an opportunity to independently judge the accuracy of the edited narrative.

In conclusion, while I have identified a considerable weakness regarding their literature review related to CMD, and its potential impact on the design and implementation of the online

data collection, this is not a fatal flaw because, despite this limitation, this self-study succeeds as an exercise in self-reflection and discernment. Therefore, I suggest that Wade, Fauske, and Thompson's self-study is representative of first-rate scholarship. The authors' philosophical and theoretical frameworks are extremely well articulated, and certainly serve their intentions. The authors succeed in communicating authentic voices, both those of their informants and of themselves. Wade, by asking herself provocative and challenging questions about her own pedagogical assumptions and instructional performance, engaging her peers in open and honest reflective dialogue, and proficiently publishing her results, achieves the realization of significant insights that may serve to positively inform teaching practice.

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Lleras (2008) Part I: Description of the Study

Lleras (2008) examines how difference in school achievement between African-Americans and Whites in different types of public schools may be accounted for by the interaction of opportunities to learn, student engagement, and achievement. She looks at how these variables influence each other over time, operate in Low Minority and High Minority schools, function in urban, suburban, and rural schools, and factor into racial achievement gaps.

The author's theoretical framework uses ideas drawn from empiricism and social positivism to articulate the actuality of racial achievement gaps and justify mathematics course placement as an appropriate vector for analysis. Lleras introduces her dependent variable -- difference in outcome between White and African-American students -- and each of her independent variables -- opportunities to learn (indicated by math placement), student engagement (as reported by teachers), achievement (measured by math test scores), school type, and school location -- by writing a robust review of empirical studies related to each variable.

Lleras employs an experimental methodology, testing her hypotheses with data from the National Educational Longitudinal Study of 1988 (NELS:88). NELS:88 has a longitudinal and large-scale sample design, which was national in scope. Lleras uses hierarchical linear modeling, a sophisticated statistical data analysis technique designed to work with nested hierarchical data structures, to build three two-level models. Lleras aggregates the results into a joint analysis.

Lleras finds that opportunities to learn, student engagement, and achievement positively impact each other, in both Low Minority and High Minority schools regardless of location, and that early gaps between White and African-American students intensify over time, such that students attending predominantly Black urban public schools learn less than students attending other types of public schools. Lleras claims that racial segregation may perpetuate structural inequality in the US public education system, and suggests pathways to mitigate these effects.

Lleras (2008) Part II: Critical Evaluation

Lleras' study is a dazzling example of the systematic deployment of high powered quantitative analytic tools to empirically examine extremely complex social structures and educational processes. Lleras interprets her results within the context of critical analysis, with the intention of improving social welfare by mitigating some negative effects of social stratification on the education of minority students. In this section, I critique the strengths and weaknesses of Lleras' study, and claim that Lleras properly bases her conclusions on evidence derived from her rigorous analysis of empirical data, which makes a positive contribution to the research literature in the sociology of education.

Lleras is a sociologist by trade, and although she does not directly refer to particular philosophical and sociological theories in her literature review, she implicitly alludes to several major philosophical and sociological theories as she develops her theoretical framework.

The philosophical underpinnings influencing this study center on concepts related to empiricism and logical positivism. Lleras works within the context of an empirical epistemology, which embraces positivist notions of objective reality and universal truth, and emphasizes the role of evidence based on observation. Lleras asserts that "the racial differences in educational performance and attainment continue to be central to inequality in America" and asks "to what extent is the former the cause of the latter?" (p. 886). The framing of this question implies the influence on Lleras of social positivism, which values the creation of cause and effect conceptualizations of social phenomenon by means of scientific experiment. Lleras' excellent choice of a quantitative and data-driven analytic approach, and statistical tool sets, exemplify her underlying philosophical stance.

Lleras writes that "to better understand the sources of the racial gap in educational performance and achievement, it is important to examine not only how African-American and

White students differ with respect to the overall learning process but also how these students interact with and are shaped by the larger organizational context and social environment of the school” (p. 887). Thus, Lleras’ theoretical framework is also expressive of social constructionism, which seeks to understand how social phenomena evolve within different social contexts.

According to Lleras, African-American students “enter with lower academic skills compared to White students and generally occupy lower curricular tracks and take less demanding coursework compared to White students” (p. 887). This idea reflects the notion that tracking may be a mechanism of structural inequality, reflecting a theoretical assumption informed by conflict theory, which is concerned with the cultural and political domination of minority populations by other groups. Lleras explicitly states that one of the overall goals that inspired this study was to reduce “the feedback effects from initial inequalities that foster racial differences in academic achievement” (p. 909). The framing of this goal suggests the influence on Lleras’ theoretical framework of critical theory, which endeavors to change society for the better and not simply document social phenomena.

Lleras capably deploys an experimental methodology, and while she did not collect her data directly, she did proficiently use induction to form her hypotheses and deduction to link her hypotheses to testable predictions. Lleras appropriately offers her reader relevant information regarding the design of the National Educational Longitudinal Study of 1988 (NELS:88), from which Lleras draws data to test her hypotheses. NELS:88 provided Lleras with a massive number of data points, which suitably served her intention of better understanding racial inequality in education, which she successfully framed as being a large-scale social problem.

Lleras qualifies “NELS [as] a stratified nationally representative sample of approximately 24,500 8th-grade students in 1,052 public and private schools” (p. 892). This statement identifies the entire United States educational system as the sampling frame. The deployment of stratified sampling is more appropriate to this study than simple random sampling would be because of the importance of assuring the participation of African-Americans of various socio-economic classes in urban, suburban, and rural locations.

A key feature of NELS:88 is its longitudinal design, with its initial survey of 1988 subsequently followed-up with surveys in 1990, 1992, 1994, and 2000. For the purposes of this study, Lleras uses data only from the initial 1988 survey and the first follow-up survey conducted in 1990; however, she competently provides a rationale based on a constraint concerning a partial lack of availability of information regarding the student engagement variable in the 1992 data set. Lleras does not provide details about the specific mechanics of how the NELS:88 survey was administered and the data collected; the reader is left to assume that the reputation of this survey instrument speaks for itself in regards to reliability and validity. Regardless, the NELS:88 data is an ideal choice for Lleras to use given the nature and scope of her research questions.

For the purposes of this study, Lleras limits her data set to a “final sample of 6,063 White and 650 African-American students in 660 public middle schools and 667 comprehensive public high schools” (p. 893). Lleras capably turns to the literature to justify her exclusion of data from private schools, which serve only a small percentage of students overall. However, Lleras chose to exclude Hispanics from her study in order to “simplify the racial comparison” (p. 893). This is a significant decision given that Hispanic students accounted for 10.5 % of the US school age population in 1988, 87% of which lived in urban areas (Wells, 1989).

The author makes an appropriate choice of hierarchical linear modeling (HLM) as her primary data analysis tool because the NELS:88 data are nested in multi-level hierarchies; “schools were sampled and then students within those schools were sampled” (p. 897). HLM is specifically designed to analyze nested hierarchical data structures. Lleras’ construction of two-level HLM models is apt, given these two units of analysis, and considering the complex error structures that can occur when standard ordinary least squares (OLS) regression is used to analyze nested multilevel data.

Lleras deploys the HLM “slopes-as-outcomes” algorithm because it enables her to measure “student-level outcomes [as] a function of the overall intercept” (p. 898). This is an appropriate design choice given her focus on measuring differences in students’ achievement. Additionally, Lleras’ slopes-as-outcomes models are designed to provide insights into both student-level and school-level effects on student achievement, as well as on each other. Another key HLM design, related to research on organizational effects, is the “random-intercept model”, which does not include “cross-level interaction terms” (Bryk & Raudenbush, 1992, p. 22). Thus, Lleras’ construction of three slopes-as-outcomes models enables her to look at “cross-level interactions between the student-level and school-level characteristics more appropriately” (Lleras, p. 897). Lleras then aggregated the results of her three models in a joint analysis, from which she draws her conclusions.

Lleras’ sound utilization of well-established statistical methods to analyze the data from NELS:88 establishes the validity of her work. Lleras uses appropriate statistical formulas, including regression analysis and two-tailed t-tests, in addition to the HLM slopes-as-outcomes algorithm, to determine the statistical significance necessary for her to confidently reject the null hypotheses. Lleras’ HLM models astutely includes numerous additional variables, which were

correctly used as controls in her analysis, including “school size, school poverty, percentage Black, region, student’s sex, single-mother household, mother’s education, and family socioeconomic status” (p. 901).

The author did not have any direct interaction with any of the research participants. Because she utilized publically available data from the NELS:88 survey, which was conducted by the US Department of Education’s National Center for Education Statistics (NCES), Lleras did not need to explicitly address issues related to Institutional Review Board (IRB) approval, or other issues related to protecting the rights of human research subjects, in this case. Had she collected the data directly from the research subjects, these considerations would absolutely need to be forthrightly addressed.

While Lleras relies on the notion of “racial” gaps in White and Black educational achievement to frame her research question, she in no way acknowledges the historical or current controversies regarding the concept of race. The NELS: 88 survey structured White, Black, and Hispanic as discreet racial categories, which did not accurately reflect the heterogeneity of the US population. Black and White may be understood as being imprecise and artificial categories and Lleras should have acknowledged that idea. It is important for researchers to be aware that the concept of race is dynamic; for example, by the year 2000 the US government census no longer defined Hispanic as a racial category, but rather as an ethnic identity. The fluid and dynamic nature of the concept of race lends credence to a social constructionist viewpoint, which frames race as a cultural construct rather than a biological fact. This perspective is supported by current genetic research, which strongly suggests that there is no single set of genetic makers for race.

Lleras does not explicitly identify any weaknesses in her own work. Given the fact that NELS:88 included Hispanic as a racial category, the exclusion of Hispanic students in order to simplify her analysis is the most serious weakness of Lleras' study. Hispanic students are such a vibrant part of many urban schools, yet Lleras' study in no way assesses the impact of these students on the complex organizational and educational processes that may influence the gaps in academic achievement between racial groups. While Lleras is completely honest and unequivocal about this exclusion, she does not frame it as a weakness and seems somewhat insensitive to the how the exclusion of Hispanics may detract from her ability to contribute to a holistic understanding of how opportunities to learn, student engagement, and achievement, interoperate to affect racial achievement gaps in urban schools. Certainly, reworking Lleras' HLM models to include Hispanic students would be interesting, albeit with a considerable increase in complexity.

Given the extraordinary complexity of the social phenomena Lleras studied, myriad questions remain. For example, would redesigning her models to take a more longitudinal view by adding the NELS 1992 data set, despite its limitations, also support her conclusions? While Lleras chose to use a two-level HLM model for this study, she could have elected to construct a three-level HLM model, which could enable the exploration of some really fascinating questions. For instance, Lleras could have added a third-level of State-of-residence on top of student-level and school-level data to explore State-specific effects; California might be a particularly interesting case, given its high population of Asian-American students influenced by cultural values that attach great importance to educational success.

There are also many exciting prospective research questions being shaped by the terrific potential of the latest advances in HLM methods, which have produced a new class of

multivariate algorithms capable of modeling the interaction of variables related to even more thorny social issues. It is now possible to design models that look simultaneously at the effects of student-level and school-level variables on, for example, both achievement gaps and juvenile delinquency rates. However, while recent increases in computing power enable this type of extraordinarily complex statistical modeling, deployment of these leading-edge multivariate HLM algorithms may also dramatically increase the difficulty of drawing meaningful and important conclusions from the data.

Another minor weakness relates to Lleras' choice to code schools as being either High Minority, where seventy-five percent or more of the student population was composed of minority students, or Low Minority, where schools had fewer than twenty-five percent of minority students. Lleras' decision to divide at the 75/25 point seems rather arbitrary; she does not satisfactorily explain why she chose these particular numbers. Lleras missed an opportunity to justify this decision with a data analysis showing a bimodal dispersion identifying a positive group effect that would suggest that these parameters were reasonable. However, Lleras did include "a continuous variable for the percentage of Black students in the school" (p. 897), which is a reputable method to account for variation within the High Minority category.

Another interesting design variation, which I think would have been fascinating for Lleras to investigate, would be for her to replace her discrete urban, suburban, and rural variables with a continuous variable, for example dollars per student spent, which may have yielded insights into the impact of funding issues independent of school location.

In conclusion, Lleras did a marvelous job with this tremendously ambitious study despite some minor weaknesses and missed opportunities. She effectively addressed her research questions, articulated important policy implications, and ascertained relevant directions for future

research. Lleras' study is important because the demographics of the United States population are changing drastically as minority segments swell. It may be vital for the public education system to better educate minority students, particularly African-Americans and Hispanics, to enable the society to sustain its world-leading economy, as well as to fulfill the promise of human equality at the core of our American democracy.

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