3 The Promise of Drawing as Visual Method in Middle Grades Research

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ABSTRACT

Although drawing has been used as research tool for well over a century in the fields of psychology and anthropology, drawing remains overlooked and underutilized in educational research. This article examines the promise of visual methods, and of drawing in particular, in accessing middle schoolers' perceptions as a means of informing the middle school reform movement. First I define drawing as a research tool, including the historical evolution of the method and its various processes. Next I present a sampling of studies utilizing drawing in middle grades research. Then I reflect on the major issues and debates related to the method, concerning in particular issues of reliability and validity. Following this, I offer general considerations for employing drawing as a visual method. The article concludes by addressing the question of the promise of drawing as a method in middle grades research.

"If educational researchers want to know more about what children think and feel about their school experiences and to give them more active control over their learning, a good place to begin is to take children's drawings more seriously."
(Haney, Russell & Bebell, 2004, p. 249)

INTRODUCTION

Learners as potential sources of valuable information about school reform have long been overlooked and undervalued in educational research (Erickson & Schultz, 1992), calling into question whether or not educational researchers actually *do* want to know more about what children think and feel about their school experiences. Nicholls and Hazzard (1993) noted the value of students' perceptions, calling learners "curriculu m theorists and critics of schooling" (p.8) and yet rarely are students consulted in such crucial change initiatives. As Cook Sather (2002) asserted, "Decades of calls for reform have not succeeded in making schools places where all young people want to and are able to learn. It is time to invite students to join the conversations about how we might accomplish that" (p.9).

Accessing student perception has historically presented unique challenges to researchers. More rigorous Human Subjects and Institutional Review Board standards for conducting research with minors, for example, present obstacles to some scholars. Erickson and Shultz (1992) further have argued that some researchers consider it a distraction, a nuisance even, to think that students might be inhabiting and constructing profoundly differing subjective worlds as they encounter what the school presents as a standardized curriculum. Sadly, little has changed in this regard in the decade since Erickson and Shultz's assertion that "virtually no research has been done that places student experience at the center of attention" (p.465).

In middle grades education, with its active reform agenda and its resounding calls for student voice, the absence of the learner perspective is a particularly stark omission. In contrast to calls for a pedagogy that is deeply student-directed, the vast majority of middle grades research, with a few notable exceptions, has relied primarily on adult informants, in the form of teachers, parents and administrators, to inform school renewal efforts in the middle grades.

Accessing student perception in educational research can be further problematic in that traditional modes of inquiry do not always elicit responses with the depth or precision required to inform change. In their review of the student experience of curriculum, for example, Erikson and Shultz illuminate that,

> In most cases, what is being tapped does not seem to be how the students experience curriculum. Rather, the collective responses of the students provide a retrospective account of

> how they felt about a particular subject at the time the surveys were done" (1992, p. 473).

Indeed surveys and other similar tools tend to suggest to participants a range of predetermined responses, rather than necessarily accessing the participants' paramount issues and experiences. How, then, can researchers expand the repertoire beyond traditional modes of inquiry to more fully engage and learn from young adolescents in the dialogue about middle school reform?

As Haney and colleagues suggest in the opening lines of this article, student drawings hold great promise in helping researchers determine what students think, feel and do in school. Visual methods, and in particular drawing, can serve as a useful mechanism for accessing middle schoolers' perceptions about schooling and middle level reform. From use in large-scale, multi-district research on school reform to incorporation in individual classroom inquiries, drawing as a research method can provide a powerful lens into the learner experience.

The purpose of this article is to examine the promise of visual methods, and of drawing in particular, in accessing middle schoolers' perceptions as a means of informing the middle school reform movement. I begin by defining drawing as a research tool, grounding it in the field of visual methods and including the historical evolution of the method and its various processes. I then describe a sampling of studies utilizing drawing in middle grades research. Next I consider the major issues and debates related to the method, concerning in particular issues of reliability and validity. Following this, I offer recommendations and guidelines for employing drawing as a research method. I conclude by addressing the question of the promise of drawing as a visual method in middle grades research.

DRAWING AS A VISUAL METHOD IN EDUCATIONAL RESEARCH

When educational researchers begin to acknowledge that learners' knowledge matters, they necessarily turn to issues of methodology regarding how to access that knowledge. How can we access middle grades learners' perceptions in a way that generates meaningful data? Visual methods, including drawing, photography and video among others, hold particular power in eliciting participant perceptions through non-verbal means. Visual methods begin to honor graphic expression as an alternative form of knowing, a perspective that stems from the postmodern argument for deconstructing the deeply established modes of traditional research (Lather, 1991).

Defining Visual Methods

Visual methods are the means through which visual data are produced, collected and analyzed in research. Most visual data can be categorized in three ways: visual artifacts produced by research participants; visual records produced by the researcher; and visual data collaboratively represented (Banks, 1995). For the purposes of this article, I concentrate primarily on the first of these types, in particular the participant-produced drawing. While all three types exist widely in the fields of visual sociology and anthropology, the participant-produced drawing is the most utilized visual method in the field of educational research, albeit still rarely.

Weber and Mitchell (1995) asserted the power of student drawings, "If we wish to know more intimately what children think and feel, we might begin by taking their drawings more seriously. Although art educators have been aware of this for decades, most educational research has not" (p. 34-35). Haney and colleagues (2004) similarly noted that student drawings help illustrate the fundamental point that, if educational reforms are to succeed, educational researchers must treat students not just as the objects, but also as the agents, of reform and improvement. "Drawings by children… of… everyday situations involving classrooms, schools and learning have unusual power to document and change the educational ecology of classrooms and schools…" (p. 242). Indeed, in myriad ways, drawing as a visual research method holds the potential to provide intimate knowledge of young people's school lives.

Historical Perspectives

For well over a century, drawing has been used in psychology, anthropology, sociology and other fields, including intelligence testing in children (Goodenough, 1926) and as a gauge of cognitive and drawing ability (Golomb, 1992), most often with young children. Scholars such as Piaget, Freud, Coles and Gardner have each relied on drawing to understand various aspects of children's development. In contrast, drawing has been largely overlooked by the educational research community. Only a few educational researchers have begun to rely on drawing as a method of accessing learner perceptions (e.g., Bebell, 2001; Chula, 1998; Haney, Russell & Bebell, 2004; Haney, Russell, Gulek, & Fierros, 1998; Weber & Mitchell, 1995), and even fewer have conducted research explicitly in the middle grades arena.

Testimony to the method's infancy, Haney, Russell, and Jackson (1998) highlighted drawing's complete absence in the AERA sponsored volume, *Complementary Methods for Research in Education* (Jaeger, 1997). Denzin and Lincoln (1998) also disregarded drawing within the chapter on visual methods in their widely utilized

publication, *Collecting and Interpreting Qualitative Materials*. And more recently, while the *Handbook of Qualitative Research* (Denzin & Lincoln, 2000) did indeed include a chapter promisingly entitled "Reimagining Visual Methods," the discussion therein focused almost exclusively on visual sociology and photography, completely overlooking the promise of drawing as a valuable method to access participants' perceptions.

VISUAL METHODS IN MIDDLE GRADES RESEARCH

The ways in which drawing thus far has been employed in middle grades research can be thought of as situated on a continuum, with large scale, multi-district research on school reform situated within a quantitative design on the one end, and smaller studies with individual classrooms or students as the unit of study, typically situated within a qualitative design, on the other.

Quantitative

Within a quantitative approach to visual methods, researchers typically quantify themes within sets of pictures in order to measure variables, analyzing the drawings with statistical procedures in order to determine predictive generalizations. Researchers usually provide one or more drawing prompts (e.g. Please draw what you do when faced with challenging reading) and collect sets of drawings from large numbers of students. Because researchers in larger scale quantitative studies typically lack the opportunity to talk with each individual student, they then identify patterns in the sets of drawings rather than focus on the meanings within individual drawings, thus avoiding the danger of over-interpretation. Then, using multiple coders, the researchers may rely on emergent analytic coding, or other forms of coding, to classify specific objects or phenomena within drawings as present or absent.

The most extensive example of this quantitative approach used with a middle grades population thus far has been the work by the Center for the Study of Testing, Evaluation, and Education Policy (CSTEEP) at Boston College. CSTEEP evaluated public school reform efforts across two large school systems (Corpus Christi, Texas and San Diego, California) through both the Co-NECT schools and the Edna McConnell Clark Foundation's Program for Student Achievement. The researchers in this study asked middle school students in 34 middle schools to draw pictures of their teachers at work in their classrooms, as part of a larger student reflection survey, which also included multiple choice and open-ended items. In the first-year drawings "most students in most schools drew a picture of a teacher-directed classroom, often

with no student even appearing in the drawing" (Haney, Russell & Bebell, 2004, p.244).

In contrast, after two years of school reform activities, the analysis of subsequent drawings revealed that in some schools, among other findings, a substantially larger proportion of drawings featured students working collaboratively, one of the aims of the particular school reform model.

> There were more drawings of kids in groups, of desks set up in circles or clusters, and of teachers as coaches rather than deliverers of information. Computers also became a familiar element in the pictures. These patterns are consistent with the Co-NECT schools' emphasis on cooperative learning, redesigned classrooms, and technology. (Tovey, 1996, p. 6)

In another study, Griswold, Stanley and Dunmyer (2001) employed a similar method when studying school facilities. In their exploratory research of student perceptions of public school facility needs, 335 students from a small Ohio school district were consulted on what kind of classroom would improve their learning, as they were invited to "Draw a classroom with all the things that would make it a better place to learn" (p. 5). Although the sample was not restricted to middle school students, the data was subsequently disaggregated by primary, intermediate and middle. For middle school students, computers appeared in 56.3% of the drawings – the only object to appear in the majority of the drawings, revealing the importance young adolescents place on technology in their learning.

In both of these studies, the advantage of the quantitative approach is the potential to make assertions about school or district change over time. Embedding drawing as a method within a quantitative design can provide powerful data about identified variables in order to inform school change. The greatest limitation lies in the necessity of analyzing sets of drawings for patterns across the group, because large numbers preclude any substantive dialogue with individual students about their drawings.

Qualitative

In contrast, a growing number of studies with middle grades youth feature drawing as a method situated within a qualitative paradigm. Rather than attempting to document school change over time or to measure the impact of various initiatives on student achievement, these studies rely on an interpretive, naturalistic approach focused on the construct of *verstehen*; "qualitative inquirers strive to *understand* their objects of interest" (Lindlof, 1995, p. 9). Often coupling the drawing with interview, these researchers often hold descriptive and exploratory purposes, and focus on smaller numbers of study

participants, enabling them access to individual interviews in order to verify their interpretations.

The ensuing analysis typically includes coding the drawings and transcriptions of interview data for emergent themes in order to develop an organizational schema. In particular, both verbal and pictorial data are part of triangulating the students' responses. Typically, drawings are analyzed on two concurrent levels. They are reviewed for the degree of consistency with interview findings, looking for ways in which the drawings support the interview findings and for ways in which the interview data support the drawings. Researchers then also search for negative cases, or instances where items in the drawings negate, or at least call into question, the findings from the interviews.

Chula's (1998) study, for example, focused on interpreting the perceptions of adolescents' worlds as expressed by visual narratives in their drawings. In particular, she aimed to understand if researchers could use the content of adolescents' drawings to gain insight into adolescents' experiences. To that end, Chula engaged 56 middle schoolers, ages 11-14, in four drawing tasks, asking them to draw 1) themselves playing, working or learning; 2) themselves doing something that makes them feel successful; 3) a teacher who motivates them in the classroom; and 4) their ideal future environment. From these data, Chula developed a coding taxonomy. Subsequently, Chula followed the drawing tasks with individual interviews of all 56 participants.

Co-researcher Pflaum and I also coupled drawing with interview methods in our study of middle school students' perceptions of academic engagement (Bishop & Pflaum, 2005a; 2005b). We invited the perspectives of twenty students from four schools, stratifying for several key attributes, including gender, socioeconomic status, grade range, and history of academic achievement and behavior. The interview protocol included two drawing tasks; we invited the students to draw a learning experience in which they felt engaged, and one in which they did not. In this case, the drawing tasks were integrated within the interview itself, providing an immediacy to the interpretation of the data.

In both of these qualitative studies, drawing provided a potent lens into the learner experience. A limitation of each is the lack of potential for generalizability due to the qualitative paradigm in which the visual method was situated.

MAJOR ISSUES AND DEBATES

The examples above illustrate briefly the various research purposes for which drawing is well suited, from coding large sets of drawings in order to measure school change efforts statistically to

coupling drawings with interviews as a means of understanding intimate student experience. Both approaches to visual methods hold great promise; both also have substantial limitations or cautions of which researchers need to be cognizant.

Methodological Strengths

While each of the studies discussed briefly above possesses its own methodological strengths and limitations, in many ways dictated by its quantitative or qualitative roots, drawing as an educational research technique brings at least four methodological strengths to middle level research. First, drawing is particularly well-suited for the young adolescent who, grappling with tremendous developmental changes and the emergence of life's quintessential questions, at times lacks the language to describe the increasingly sophisticated understandings that emerge at this stage of life. "In a print-oriented culture, drawing may put children on equal footing with adults in terms of adequacy of expression" (Haney, Russell, Gulek & Fierros, 1998, p.1).

Second, the open-ended nature of the blank page allows participant perspective to be paramount. Whereas surveys or other selected response tools by nature ask research participants to respond within a predetermined range of acceptable answers, drawing in response to a carefully designed prompt can provide participants with a broader range of possibilities.

Third, visual methods offer students the occasion to represent their perspectives in a non-verbal manner, an approach that contrasts with the verbal emphasis of most school and research tasks (Gardner, 1980, 1983). In the culture of most schools today, students are routinely expected to respond orally in class discussions and in written format in response to myriad tasks in a majority of what many consider "core" academic subjects. Drawing, in contrast, offers an alternate medium through which to communicate, potentially better serving students who may not express themselves clearly or confidently through verbal means.

And fourth, when coupled with interview, drawing as a research method has the potential to combat the postmodern critique of traditional research paradigms, which asserts that persons who are powerful and established typically are those who interpret schooling while the less powerful and less established are not heard (Denzin & Lincoln, 1998). Inviting students to draw and then describe their drawings and experiences enables them to take hold of and lead the interview based on their depictions, thus inviting a shift, small but important, in the typical power differential.

Methodological Concerns

While visual methods, and drawing in particular, offer a number of strengths to the educational researcher, they concomitantly raise methodological concerns. The primary controversy facing visual methods is the potential for misinterpretation and misanalysis in relation to research standards. In short, is the use of drawings in educational research reliable and is it valid?

Reliability

Questions of coding reliability have been examined and addressed in several studies utilizing drawing as a method of analysis. While not exclusive to middle grades research, Haney et al. (2004), in perhaps the most comprehensive examination of drawing reliability, concluded that "our inquiries via correlational analyses, calculation of percent agreement and Cohen's kappa provide evidence that drawings produced in response to a variety of prompts can be coded reliably" (p.259). Haney et al. achieved overall agreements of .85, .95, and .81 using Cohen's Kappa Coefficient of Agreement; Griswold et al. (2001) cited 100% agreement in their reliability tests.

Although there is growing evidence of the reliability of drawing as research method, one serious challenge to coding reliability in drawings is the issue of stability over time, which may be thought of as test re-test reliability. Stability is a particular challenge in the use of student drawings, in that some students may draw common or representative images, while others may choose to depict unusual or funny experiences. This issue is ideally addressed at the onset of the data collection, with careful wording of the drawing prompt(s).

Validity

In a study of the extent to which student drawings are valid indicators of the educational ecology of classrooms, Gulek (1999) found that student drawings demonstrated strong evidence of validity in assessing modes of classroom instruction, stating, "Results concerning convergent validity as well as discriminant validity indicate that drawings have high correspondence with surveys and classroom videos in assessing teaching and learning in classrooms. Thus, drawings are valid indicators of the educational ecology of classrooms…" (p.20).

One possible danger inherent in the analysis of visual data is the great potential for over-analyzing, misinterpreting and/or incorrectly attributing emotions or actions to certain depictions. To combat this danger, researchers should triangulate the drawing tasks with other methods, e.g. interview. If the numbers of drawings and participants preclude face-to-face interviews, situated in a quantitative

framework, researchers should code for emergent themes and patterns across a set of drawings, as Haney and colleagues (2004) have done. Additionally, relying on sentence tags for larger samples has proven useful in other research, e.g. Bishop, Reyes and Pflaum (in press), in which middle school student participants both drew themselves responding to challenging reading and completed the sentence tag beginning with, "Here I am…" Such additional supports can enhance the validity of the interpretation.

However, Haney et al. (2004) asserted that Meissick's conception of *consequential validity*, "the power of assessment to effect change and improvement" (p. 244), is more important than traditional validity concerns and must be a predominant criterion for assessing the quality of visual methods. Such validity takes shape in not only the power of the data but also in the effect of opening educators' eyes to that data in order to inform school change. Similarly, Chula (1998) noted that teachers valued her research process as a tool for gaining insight into their students' worlds. Although space limitations here preclude a more detailed discussion of validity and reliability, I strongly urge researchers to consult Haney, Russell and Bebell (2004) for a more comprehensive discussion of issues pertaining to the validity and reliability of drawing.

CONSIDERATIONS FOR RESEARCHERS UTILIZING DRAWING AS VISUAL METHOD

For researchers contemplating the integration of drawing as a visual method, I offer here a few caveats and considerations. While this list is by no means comprehensive, the commentary that follows may be helpful in considering the implementation of drawing as a research method with middle grades students.

Research Design

First, as with all educational research, one's research purpose should dictate the method and one should subsequently adhere to the standards set forth for that. Determining if the aim of the research is to make generalizations or to describe and understand, for example, helps guide the qualitative or quantitative approach in which to embed vis ual methods.

Second, when considering the use of drawing as a visual method, I strongly encourage researchers to consider mixed or complementary methods of inquiry. As the National Middle School Association Research Committee pointed out in its directions for future research, "We need studies that combine quantitative and qualitative methodologies.... Large-scale quantitative studies provide reliability and generalizability but lack the kinds of deep contextual information

gained only through qualitative methods" (NMSA, 2003, p.70). Drawing as a visual research method embedded within a multifaceted research design has the power to bring the contextual, student perspective to the dialogue on middle school reform in unique and compelling ways, while not overlooking the need for comprehensive examination of the school renewal effort.

Data Collection

In relation to the incorporation of participant-produced drawings into a study, the power of the prompt cannot be overstated. Linked closely to the research questions, careful wording of the prompts is crucial. Piloting the prompt with a comparable population prior to the study is a critical first step toward understanding how effective the prompt(s) will be, and to fine-tuning the language used.

Further, reticence about drawing ability often emerges in middle school. Some young adolescents have moved beyond comfort with art materials, expressing reserve about their drawing abilities. It is important to ensure the student participants that the task is not about the quality of the art, but rather about the message it conveys.

Finally, on a pragmatic note, offering middle level students various drawing tools to choose from, including those with color, provides them with an avenue for choice, depth and complexity that black and white sketches may not convey. Equally pragmatic, researchers should be careful to label all drawings, so they may move and rearrange them without concern for later misidentification.

Data Analysis

The fields of art therapy and psychology have been criticized at times for over-interpretation of children's art. Within the analysis stage, there is the distinct danger of just such over-interpretation. Drawing as a method in educational research should not intend to make inferences about a student's psychological state. To avoid this, the analysis should be guided by the method's situation in the larger quantitative or qualitative context. In a quantitative design, as described earlier, drawings should be coded as sets, rather than as individual statements. And wherever possible, drawing should be combined with interview or other methods of triangulation; when coupled with interview, drawing becomes an opportunity for triangulation, offering an alternate, often poignant and highly communicative means of participant perception.

Researchers also should determine the type of coding they will conduct, which helps to balance out the potential for over-interpretation. Trait coding, for example, documents the degree to which a particular item is represented in a drawing. In contrast, holistic

coding entails coding based on an overall judgment, for example if the phenomenon or environment is presented in a negative or positive light.

Additionally, student drawings often become more accessible and powerful when projected onto a screen. Where possible, researchers should consider digitally scanning images in order to project them in a larger venue. This enables one to obtain an alternative perspective, gain some distance, and is an excellent way to share the drawings with multiple researchers, something crucial in its own right.

Finally, approaching the images from a critical theory or cultural studies stance is also helpful. Fruitful beginning questions include, "What is the main "text" or message conveyed by the images?"; "What are the counter-texts or the hidden (implicit) messages?"; "What social, cultural, or political knowledge is required to be able to interpret the images?"; and "Who has power or how is power distributed or used?" (Weber, n.d.)

CONCLUS ION

What, then, *is* the promise of drawing as a visual method in accessing middle school students' perceptions? In fact, there are two. First, as a field that is known for its vocal call for student voice and democratic classrooms (e.g. Beane, 1997, Stevenson, 2002) and one that has been labeled "at its heart …a movement in the service of social justice" (Jackson & Davis, 2000, p.229), visual methodology, and in particular drawing, holds the promise of bringing the research methodologies into line with the philosophy undergirding the middle grades reform movement. It does so by beginning to address the postmodern critique of traditional research approaches, which asserts that those in positions of authority and establishment most often hold the power to define and recreate schooling while those who are marginalized or less powerful remain unheard.

The second promise is that of consequential validity. As Haney, Russell and Bebell (2004) found, "Student drawings proved to be a powerful vehicle for teachers to learn from students' perspectives" (p. 244). As such, student drawings become not only a powerful means of documenting the realities of schooling, they also become full of potential for teachers' reflection and change. When the middle grades research community values the input of young adolescents in real and meaningful ways by inviting them to participate in lively debate about school reform through visual methods, teachers and students learn much from one another about the complexity of life and learning inside middle level schools.

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