

Empowering Children as Critics and Composers of Multimodal Texts

Phyllis Whitin and David J. Whitin

On television everybody who's eating cereal is skinny. [Viewers] don't think that diabetes or obesity will happen to them.

—Jelan, Grade 5

Jelan's (all names are pseudonyms) comment, made during a long-term critical inquiry into children's TV advertising, illustrates ideas central to multimodal literacies: All texts, including images, reflect the motives and interests of their composers. The choices made to express meaning—through words, images, movement, and so on—convey implicit messages that position viewers to think in certain ways (Harste, 2010; Janks, 2010). Through this inquiry Jelán and her classmates learned to take on the stance of a critical consumer of multimodal texts by raising questions about what texts explicitly *say*, and what they minimize or *don't say*. In this article we examine aspects of our study that highlight the children's growing knowledge of multimodal communication and the ways they applied this knowledge to their work as critical readers and composers.

The Context of the Study

As university researchers we collaborated with two fifth-grade teachers, Kristen and Leslie, for three years (Whitin & Whitin, 2011a). The cereal project took place during four months of the third year. Working with the teachers, we designed the unit based on a previous project in which students developed recommendations to the principal for the cafeteria program. The teachers attributed the growth in the children's skills and their emotional investment in the project to the personal relevance of the topic and the authentic audience for their report. The four of us agreed that advertising was another theme that met these goals. Furthermore, advertising offers a rich context in which to develop multimodal literacies since marketers exploit the

potential of various modes to convince consumers to desire and buy products (Harste, 2010; Gainer, Valdez-Gainer, & Kinard, 2009; Lewison, Leland, & Harste, 2008). This topic connected to the children's lives and had the potential to become what Dockter, Haug, and Lewis (2010) call "critical engagement," a stance that combines "critical distance with immersion and emotional investment" (p. 418).

Although we suggested initial goals for the inquiry, we also agreed to adjust our plans based on the children's emerging interests. As the inquiry evolved, the connections that the students made between advertisements and health led us to focus on cereals marketed to children.

We worked weekly with groups of students who had parental consent, and built in time for these teams to share with their peers so all could be involved. Since the students had limited access to technology, we shared our laptop as a tool for digital composing and Internet research. During the unit, we collected data in the form of field notes from conversations with the student teams, presentations to the classes, debriefing sessions with teachers, lesson plans, reflections, and student work. Throughout the study, we used constant comparison analysis (Strauss & Corbin, 1990). Later semiotic frameworks from Kress (2000) and Janks (2010) helped us examine data related to students' reading and composing of multimodal texts.

Principles That Frame the Study

Before turning to the children's work, we need to consider several principles from multimodal theory that informed this study. First, every mode of communication has unique

affordances as well as limitations (Kress, 2000, 2003). For example, visuals are particularly effective for showing relationships since they are spatially organized. Written or spoken language works well in building a sequential argument (Kress, 2000, 2003). It follows that all texts are partial; there is always something left out or minimized (Janks, 2010). In multimodal texts, the various modes compensate for each others' limitations. They also act together to expand and intensify meaning, such as a large, bold word set against a bright yellow background and enhanced by sound (Janks, 2010). As composers, learners need to understand the ways modes work in order to make choices that best achieve their own purposes (Kress, 2000). Such knowledge also equips learners to analyze the effects of their compositional choices, as well as the ways that choices that others make affect them as readers (Janks, 2010).

Multimodal theory is rooted in the idea that all compositional choices reflect the interests, cultural perspectives, beliefs, and motives of their authors (Gee, 1996; Harste, 2010; Janks, 2010). No text is neutral. Accepting the texts of others without question is what Janks (2010) calls "the default position" (p. 103). She argues, "If all texts serve interests and entice us into their way of seeing the world, then we need to understand how they work on us—we need strategies for resistant reading" (p. 72). Resistant reading begins by asking critical questions about the intentions of the composers and imagining how alternative texts would convey different messages (Janks, 2010; Vasquez, 2004).

Finally, it is important to emphasize that this critical dimension of multimodal literacies also includes displays of data (e.g., graphs) (Best, 2004; Whitin & Whitin, 2011a, 2011b). Kress (2000) notes that the abstract design of scientific and mathematical visual texts implicitly conveys objectivity and emotional disengagement. Best (2004) posits that people tend not to question numerical information, even though these texts are products of human activity. When composing texts involving numerical data, authors make choices about how to pose a question, define terms, categorize responses, and represent findings. For these reasons, data texts are not immune from critique. Rather, critics have the right to interrogate these choices and expose the effects that they have on particular audiences. This stance is particularly important since data texts are increasingly prolific in the media (Best, 2004). However, current research in multimodal literacies devotes little attention to mathematical representations. We therefore intentionally incorporated data-related texts into our inquiry.

Examining Multimodal Messages in Print and TV Ads

The project's first phase focused on analyzing design elements in print and television ads. We began by asking the first team of four students, "How do advertisers convince us to buy things?" Their comments opened opportunities to examine images, word choice, and visual aspects of print that marketers select to persuade consumers, i.e. *what they say*, and to identify what they minimize or *don't say*.

For example, Stephanie suggested that a lot of ads use celebrities. Examination of print advertisements confirmed this idea. Stephanie found images and references to celebrities such as an NBA team on a pizza ad. Another ad from a regional pizza chain, Jets, featuring an image of a rectangular pizza made to resemble a football field, people sitting in stands surrounding the pizza, and large J-E-T-S in both "end zones" generated further discussion about celebrities, the techniques of visual association, and word play. "What do the advertisers want you to think?" we asked. The children surmised that marketers designed this ad to convince readers to think about buying Jets pizza for their upcoming Super Bowl parties. They played on the word "Jets," which is the name of both the chain and a professional football team. This example provided an opportune context in which to discuss how words and images can work together to intensify a message (Janks, 2010).

Michael's contribution, "They say things like their movie is the scariest," led us to examine the use of comparative and superlative language. The children found several examples in the ads, for instance "better tasting," "larger pizza," "fastest service." When we asked, "What do you think about these claims?" the children raised questions like, "What do they mean by *better tasting*?" They noticed that the marketers didn't say what was being compared. This discussion marked an early instance of children interrogating ad authors/designers to expose what is not known, what is not revealed. Such questioning is a key element in developing a critic's perspective.

Multimodal theory is rooted in the idea that all compositional choices reflect the interests, cultural perspectives, beliefs, and motives of their authors.

“What do the advertisers want you to think?” “They make you believe you can do things,” Derrick remarked.

Children were asked to look for other ways advertisers used language to interest their audience. Students discovered “fun-sounding words” and rhyming words, such as “good golly, let’s get jolly,” and alliteration, such as “meals in minutes.” Further group discussion highlighted that grammar is not neutral; intentionally or unintentionally, word choice and phrasing work to position readers to think in certain ways (Harste, 2003; Janks, 2010).

We capitalized on another of Michael’s comments to focus attention on how marketing strategies work across modes and to examine the visual aspects of print. He remarked, “[On TV] they try to say anything bad at the end, and they say it very softly and really fast.” The others confirmed Michael’s claim with examples of the many dangerous side effects from various medications that are quickly stated at the end of pharmaceutical ads. Looking at the print ads, Keith noted one in which the words, “BUY ONE, GET ONE FREE,” all in capital letters and centered at the top of the page, captured his attention. In fine print below, the marketers revealed that tax was charged on this free item. Keith argued that the item wasn’t really free, and that the advertisers were tricking consumers. We then discussed with the children the similarities and differences between the small print of the written mode and the fast, hushed, nearly expressionless voice of the oral mode on TV. Both minimized less desirable information. Keith’s discovery also illustrated the use of space (upper and lower portions of the page) in the written text versus the temporal element (the beginning and end of a message) in an oral text. This comparison between written and oral texts supported children’s thinking about how authors can capitalize upon the affordances of each mode to promote their agendas (Janks, 2010).

Then we turned to TV ads. For homework, students viewed programs appealing to elementary-age children, mostly on networks such as Nickelodeon and Disney. They recorded each program’s title, channel, products advertised, and general comments. Before meeting with a second team of students to tabulate the data, we reviewed the completed sheets and noted student comments that provided opportu-

nities to revisit the marketing strategies identified in print ads and to examine the affordances available through audio and moving images.

To begin, we asked one foursome to talk about their own experience collecting data. What connections could they make to the print ads? What differences did they see? A major difference they noted from print ads was the role of audio. *Hearing* the sound of rhymes and alliteration enhanced the power of words, while the addition of “catchy tunes” also worked to “get your attention.” Looking at the comment section of the observation sheets, they found that their peers had also found similar marketing strategies.

The children’s descriptions of two ads for a popular fruit drink led to a discussion of ways that marketers use moving images to position people to think favorably about their products. One of the ads showed children jumping unrealistically high in the air after drinking the beverage. Beginning with a question inspired by Vasquez (2004), we asked, “What do the advertisers want you to think?” “They make you believe you can do things,” Derrick remarked. Adrian described a second ad in which children were drinking the product and playing soccer. The commercial then flashed forward to show adults playing soccer. To Adrian, these physically fit adults looked like “the same kids all grown up.” Using the temporal affordance of video to show elapsed time, the marketers implied that the drink has long-term health benefits. Both ads appealed to children’s desires to be athletic and successful. However, the students also noted that the ads didn’t say that this beverage contains little fruit juice and has high sugar content.

Examining Multimodal Messages in Data-Related Texts

As we continued to work with the team investigating TV advertisements, the group moved from sharing initial observations to tallying, graphing, and analyzing information related to the products advertised. Students identified the kinds of products most heavily marketed to children as well as common techniques of advertising. Choices about color, language, and visual organization work together to position readers to notice certain relationships and therefore draw particular conclusions in all multimodal texts—including graphs and charts (Whitin & Whitin, 2011a). Having the children construct graphs from their data gave us the opportunity to have them reflect on the effects of their authoring decisions while they composed (Janks, 2010). To

emphasize the point that effects are dependent on modal choices, we asked children to represent their findings using both bar graphs and pie charts. By comparing and contrasting the two representations, they were able to analyze what each visual display said or didn't say to the audience. This analysis informed later composing decisions when students developed their final PowerPoint report.

As the children worked with their data, they noted the high frequency of food advertisements. They talked about the relationship between unhealthy food and obesity, diabetes, and high blood pressure. With worried voices, several children described family members affected by such health issues. At this point we turned to an Internet resource that listed the sugar, sodium, and fiber content of cereals marketed to children (Boyles, 2008). Students expressed particular concern when they read that few of the cereals seen by their peers on TV were ranked as *very good*. Since the children had deep, personal experiences with family members coping with diseases associated with unhealthy eating, they

seemed eager to critically examine how marketers position consumers to make choices. Their concern convinced us to focus solely on the food advertisements and analyze results of that portion of the data. We believed that this decision would foster the children's "critical engagement" (Dockter et al., 2010, p. 418).

The children categorized the food-related ads from their television-viewing data sheets, making cereal a separate category because of the predominance of those ads. There were 13 ads for cereal, 9 for restaurants, 3 for candy, and 17 for groceries other than cereal, such as macaroni and cheese, soup, and cookies. Two children created a bar graph of these results, and another pair constructed a pie chart (Whitin & Whitin, 2011a). In both cases the children made strategic multimodal choices to effectively represent the points they wanted to make.

In their bar graph (see Figure 1), Terrell and Christian used color to represent levels of nutritional value of the foods. During their data analysis the boys had been

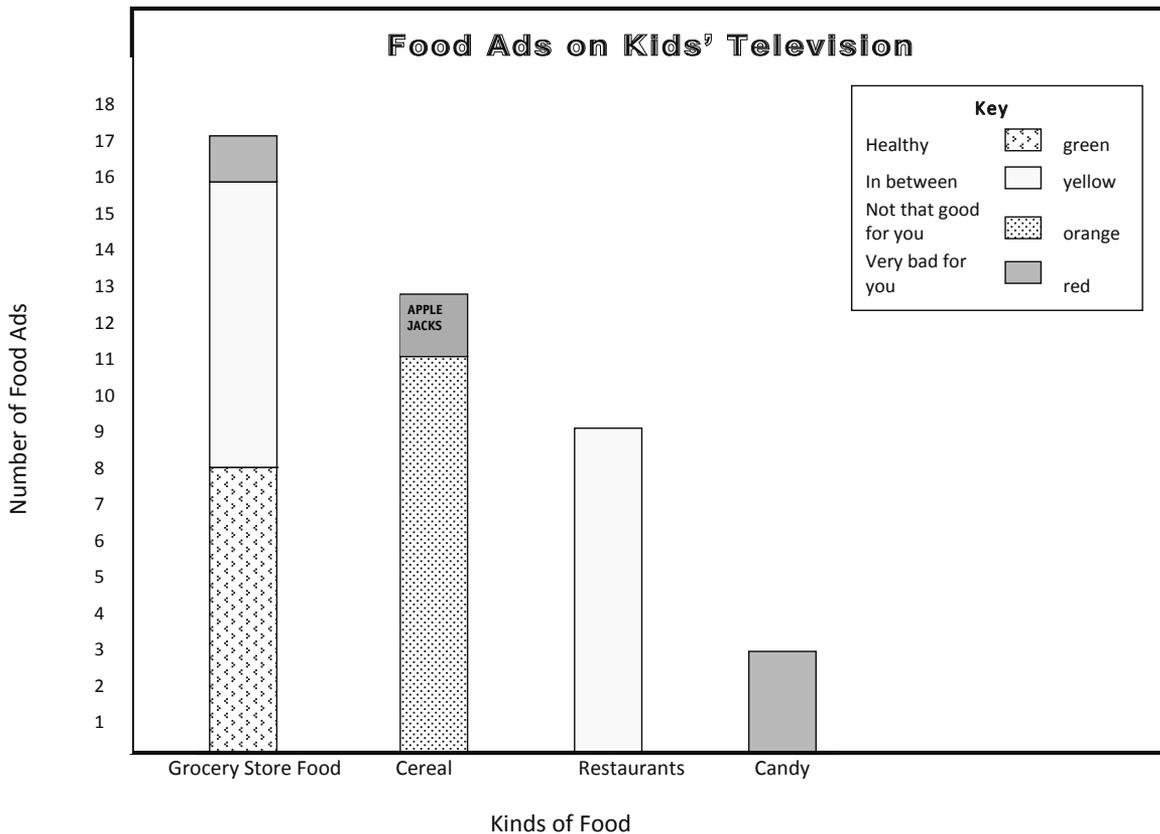


Figure 1. Bar Graph of Food Ads on TV. Terrell and Christian used a color-coded stacked bar graph to show the range of nutritional value in foods seen in ads on children's TV (copied from their original poster to show more clearly the divisions of each bar).

shocked at the high sugar content of so many cereals, and they wanted to emphasize this discovery in their graph. They chose a stacked bar graph so they could show the nutritional content within each of the four categories: grocery store food, cereal, restaurants, and candy. They also developed a key to represent the four gradations of nutritional value, from “healthy” to “very bad for you.” They selected red for the worst value, suggesting associations such as “danger,” “blood,” and “the Red Cross” to justify this color choice. They used red to represent the two tallies for Apple Jacks, a cereal they had learned from website research to be especially high in sugar. To further emphasize their point, they also labeled this portion of the bar with the product name. They chose orange for “bad, but not too bad,” for the remaining cereals. They color-coded the other bars into healthy/unhealthy subcategories, e.g. green for healthy foods, such as soup, associating green with “vegetables” and “nature.” They first considered, “Food Ads on TV,” as a title but Terrell revised *TV* to *television* because “*Television* is more at a 5th-grade level.” This justification suggested that the formal language choice would convey a professional tone to the audience.

Using a pie chart, Chelsea and Bethany represented the same data (see Figure 2). This choice enabled them to underscore a relationship they wanted to emphasize, i.e., that cereal comprised about one-third of the total food ads viewed. Their graph did not differentiate between healthy and unhealthy foods as the color-coded bar graph did. The

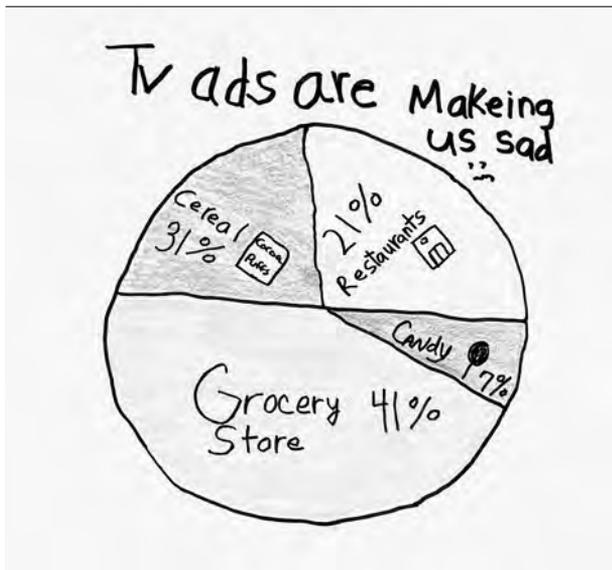


Figure 2. Pie Chart of Food Ads on TV. Bethany and Chelsea’s pie chart highlighted the high proportion of cereals marketed to children on TV.

girls partially compensated for this omission by drawing a box of Cocoa Puffs in the cereal section of the chart to suggest that advertised cereals were not necessarily healthy ones. They also chose an emotionally laden title, “TV Ads are Makeing Us Sad,” visually intensified with a frowny face.

Comparing and contrasting these two graphs gave the children the opportunity to analyze how a single graph cannot capture all possible relationships—an important insight for children to gain because it supports them in their right to ask, “What is missing? What is not shown?” Furthermore, discussing insights about the affordances and limitations of each graph helped the children understand how authors can craft mathematical representations to achieve specific purposes.

Becoming Strategic Composers of Multimodal Texts

In the following weeks, the children researched nutritional information about cereals and learned more about marketing strategies (Linn, 2004). They designed a survey, polled classes at several grade levels about television viewing and cereal-purchasing habits, and continued discussing and analyzing ads they saw on television. Finally, they created skits and an informational PowerPoint for fellow fifth graders. Students in both classes wrote persuasive letters to state representatives, cereal companies, and television networks.

Here, we describe several PowerPoint slides to further examine children’s learning as multimodal composers. We suggested that the children create a collaborative slide show since none of them had experience with this software. Individuals or pairs of children designed slides that related to topics that mattered to them (Dockett et al., 2010). We used the blank slide layout that suggested an open canvas, thus encouraging experimentation with placement of images and text. The wide range of animation options provided opportunities for the children to explore images and text moving in space or changing in size. Analysis of these slides alongside earlier work suggests that as the children learned to unpack implicit textual messages, they also enlarged their repertoire of representational resources (Kress, 2000) and further developed sensitivity to the effects of their own multimodal authoring decisions (Janks, 2010). Furthermore, making the slide show gave the children opportunities to create alternative texts to the ads by filling in what the commercials omitted.

Two teams developed the project over two days. We first showed a partially completed sample slide about marketing strategies. We used this slide to demonstrate possibilities for using animation, color, and placement in space to capture the audience’s attention and to convey information, e.g., green font for “cash cards” and clip art images entering from the four corners of the screen via animated effects similar to those seen on TV. We co-constructed the last part with the children as a way to invite them into the design process. With these possibilities in mind, the children drafted their ideas on paper and either worked with Phyllis to translate their ideas to the screen, or they revised slides that she made based on their drafts. We asked questions such as, “What do you want your audience to think?” and “Which option suits your purpose?” as they created and reviewed their slides.

Strategic Use of Space, Sequence, Images, and Language

Amber’s grandmother, who had high blood pressure, had taught Amber the importance of reading food labels for



Figure 4. Finished Slide: The Effects of Sodium on the Heart. Amber’s finished PowerPoint slide. Copyright 2011 from *Learning to Read the Numbers: Integrating Critical Literacy and Critical Numeracy in K-8 Classrooms* by David J. Whitin and Phyllis Whitin. Reproduced by permission of Taylor and Francis Group, LLC, a division of Informa plc.

sodium content. Eager to share her expertise, Amber composed a slide about the effects of sodium on the heart (see Figure 3). Her strategic choices of words, sentence types, images, and color worked together to create a tone of scientific authority. On her draft she noted the entrance order of her text, beginning with a question, “What happens when too much sodium enters your body?” and ending with an imperative, “Look at your labels on your cereal boxes!” In this way she emphasized her main point by capitalizing on the temporal affordance of animation to intensify her strategic syntactic and semantic decisions.

Amber used image to legitimize herself as a credible source of information. In the center of her draft she sketched a large heart with red and blue vessels and indicated that it should appear after the opening question. To make explicit her intention to use an anatomically correct image, she noted, “A real ♥.” When she translated her draft to the computer, Phyllis showed her several clip art images of hearts; Amber carefully selected the most detailed option (see Figure 4). Finally, she chose a black background and a white font so that the red heart stood out. The contrasting colors further enhanced her authoritative stance.

Byron focused his attention on word choice as he considered a title for his slide on favorite cereals named by survey responders. His initial title was “What TV Cereals Do Kids at [school name] Eat?” However, he revised it to “What 3 Top Picks Did [school name] Students Choose

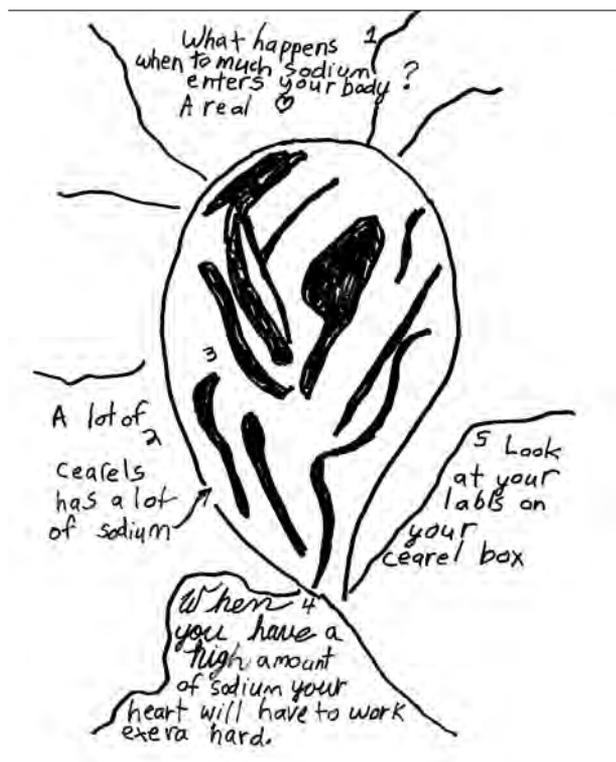


Figure 3. Rough Draft: The Effects of Sodium on the Heart. Amber sketched an anatomically detailed image of a heart on the draft of her slide to convey a tone of scientific authority.

as Favorite Cereals?” We suspect that he used the phrase *top picks* because it was familiar to his audience from such contexts as sports drafts and might capture their interest.

Using Multimodal Affordances to Convey Numerical Information

As the children incorporated numerical information into their drafts, they made visual design choices to meet their unique purposes. Aaliyah based her slide on her group’s research about Reduced Sugar Frosted Flakes: “When you hear the words ‘reduced sugar’ on television, the sugar is reduced, but the company does not tell you that the sodium has increased and the [good] fiber also is reduced.” She drew a bar graph to show these measurable differences. To intensify her central message about this nutritional manipulation, Phyllis suggested using the *dissolve* option to animate the bars. On her finished slide, a portion of the bar representing the sugar dissolved to show the reduced content, while the bar representing sodium simultaneously grew in height.

Jade and Jelani’s slide featured numerical information, but they strategically chose not to use a graphic format (see Figure 5). They were responsible for communicating results from the survey question, “Who picks out cereal in your family?”— a question included because students had learned that marketers take advantage of psychologists’ expertise to design ads that encourage children to pressure parents to buy their products (Linn, 2004). They wanted to know if the effects of these tactics were reflected in their school. Of those surveyed about cereal selection in their family, 25% responded *me*; 48%, *me and an adult*; 14%, *a brother*

or *sister*, and the remaining 13% chose *an adult*. When the children were analyzing the data, David asked them, “How many of the categories included kids in some way?” They saw that since three of the categories involved kids, they could add these percentages together (25%, 48%, and 14%) to make an aggregated total of 87%. They then could use this higher total percentage to more effectively bolster their argument that children play a major role in deciding which cereals their families purchase.

When designing their slide, the girls purposely centered this aggregated total at the top of their draft, stating in large orange print, “87% of kids have the say-so on which cereal they eat.” Below, in slightly smaller and softer turquoise, they wrote, “13% of adults have a say-so on which cereal their kids eat.” Since they wanted their audience to have access to the full data set, they placed the disaggregated categories in the four corners. Spatial arrangement and a smaller font size gave this information secondary importance.

Orchestrating Multiple Modes to Build an Argument

Working on their slide inspired Jade and Jelani to compose a second slide to emphasize the serious implications of the survey findings. The children used color, size, sequence, and animation to persuade their audience to take action. Their composing decisions paralleled those of the marketers they had analyzed earlier. Their example also influenced Byron to make visual revisions to his own slide.

At the center of the draft they wrote “WARNING!!!!” in large red letters encircled by a black oval, labeled with “#1” for the entrance order. They wanted to animate this word for emphasis and indicated this choice with the notation, “Pop out” (see Figure 6). Below the oval and also in capitals, they wrote: “ADVERTISERS ARE GETTING THEY’REWAY AT OUR SCHOOL! (#2),” and above it in upper and lower case, “This is why advertisers are advertising on kids TV shows! (#3).” When they transferred the draft to the computer, they chose a red background to further signify danger. Phyllis showed them several gradations of the “magnify” animation effect. The girls opted for the greatest level, so that the “WARNING” oval filled the entire screen as it entered. Taken together, the bold and contrasting colors, word choice, exclamatory sentences, and animation worked to command the audience’s attention. This experience with Jelani and Jade highlighted for us the important role that teachers play in providing representational resources at the point of need (Kalantzis & Cope, 2000).

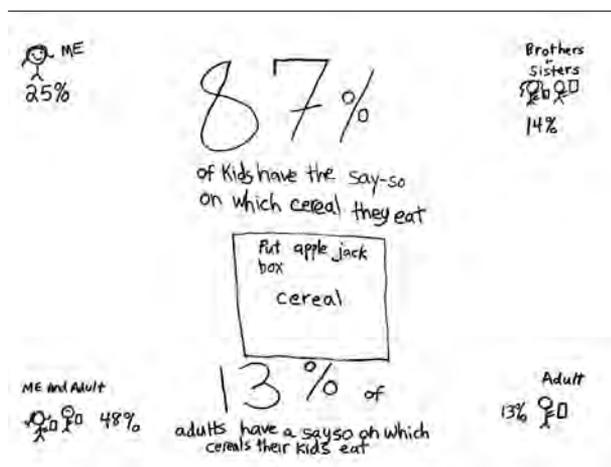


Figure 5. Rough Draft: Who Picks Out Cereals? Jade and Jelani strategically used aggregated data to highlight the role children play in their families’ cereal purchasing decisions.

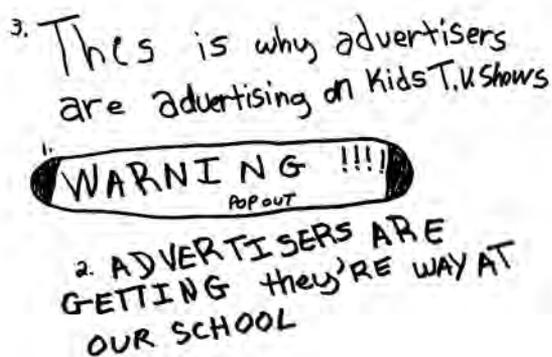


Figure 6. Rough Draft: Call for Action. The draft of Jade and Jelan’s second slide shows their intent to use font size, sequence, and animation to convince their peers of the dangerous effects of cereal advertising aimed toward children.

When Byron, who was working on his “top picks” slide, saw the “WARNING” animation, he decided to add single words “BAD!” and “WOW!” next to the facts he presented about cereals’ nutritional content. He chose bold, black letters framed by red rectangles and he animated them with a spin-in entrance effect. For instance, the word “bad” entered immediately after “12 grams of sugar” and “the fiber is almost 0!” The children were teaching each other how to orchestrate different design elements in order to intensify their messages.

Implications from the Study

These stories suggest that pairing children’s experiences as readers and as composers of multimodal texts supported their growing understanding of principles of multimodality and critical construction/production of texts. As readers, the children learned ways that modes work together to expand meaning. As composers, they capitalized on this same potential in their slides.

This study highlights ways that teachers can incorporate a critique of numerical information into their work on multimodal literacies. Children develop a critical stance by first recognizing numerical information as products of human construction and then exploring how the choices made in designing multimodal representations of data position audiences to interpret texts in particular ways. For this reason, children need regular opportunities to examine how numbers work together with language and graphic design elements to render an integrated, intensified message. These fifth graders demonstrated this multimodal potential as they

constructed their graphs and PowerPoint slides. For instance, in their stacked-bar graph the children intentionally used color with a range of emotive associations (from red as “danger” to green as “healthy”) to enhance the impact of their numerical results.

This study also underscores the importance of children having regular opportunities to raise such critical questions as, “What is missing? What is not said? What is minimized?” The children raised these questions in multiple contexts. For instance, they noted that (1) advertisers’ use of comparative language, such as “better tasting,” did not say exactly what was being compared; (2) when marketers touted “reduced sugar” in Frosted Flakes, they did not say that the sodium had increased and the fiber had decreased; (3) their own pie chart did not show how healthy the food was under the categories of cereal, grocery stores, and restaurants. These examples demonstrate how children grow in confidence and competence by interrogating texts that omit or minimize certain information.

The children were able to grow in these ways despite limited access to technology. We attribute this outcome in part to the decisions to tie the investigation to children’s lives and to give them a voice in the investigation’s development over time (Dockter, et al., 2010). Creating a collaborative PowerPoint presentation allowed children to take ownership of personally meaningful aspects of the study, thus enhancing their emotional investment in the process. It was also possible in this context to teach grade level skills and concepts from a critical multimodal perspective, such as comparative language and aggregating categories of data. This orientation helps learners to view these skills in context as strategic tools for building arguments and promoting agendas. Investigations like these can work to promote a new “default position” of multimodal critique (Janks, 2010, p. 103) for learners in 21st century classrooms. ●

Works Cited

- Best, J. (2004). *More damned lies and statistics*. Berkeley, CA: University of California Press.
- Boyles, S. (2008, Oct. 1). Kids’ cereals: Some are 50% sugar. Retrieved from <http://www.webmd.com>.
- Dockter, J., Haug, D., & Lewis, C. (2010). Redefining rigor: Critical engagement, digital media, and the new English/language arts. *Journal of Adolescent & Adult Literacy*, 53(5), 418–420.

- Gainer, J. S., Valdez-Gainer, N., & Kinard, T. (2009). The elementary bubble project: Exploring critical media literacy in a fourth grade classroom. *The Reading Teacher*, 62(8), 674–683.
- Gee, J. (1996). *Social linguistics and literacies: Ideology in discourses* (2nd ed.). London: Taylor & Francis.
- Harste, J. (2003). What do we mean by literacy now? *Voices in the Middle*, 10(3), 8–12.
- Harste, J. (2010). Multimodality. In P. Albers & J. Sanders (Eds.), *Literacies, the arts, and multimodality* (pp. 27–43). Urbana, IL: National Council of Teachers of English.
- Janks, H. (2010). *Literacy and power*. New York: Routledge.
- Kalantzis, M., & Cope, B. (2000). A multiliteracies pedagogy: A pedagogical supplement. In B. Cope & M. Kalantzis (Eds.), *Multiliteracies: Learning literacy and the design of social futures* (pp. 239–250). New York: Routledge.
- Kress, G. (2000). Multimodality. In B. Cope & M. Kalantzis, (Eds.), *Multiliteracies: Learning literacy and the design of social futures* (pp.182–202). New York: Routledge.
- Kress, G. (2003). *Literacy in the new media age*. New York: Routledge.
- Lewis, M., Leland, C., & Harste, J. C. (2008). *Creating critical classrooms: K–8 reading and writing with an edge*. New York: Erlbaum.
- Linn, S. (2004). *Consuming kids: Protecting our children from the onslaught of marketing and advertising*. New York: Anchor.
- Strauss, A., & Corbin, J. (1990). *Basics of qualitative research: Grounded theory procedures and techniques*. Newbury Park, CA: Sage.
- Vasquez, V. (2004). *Negotiating critical literacies with young children*. New York: Routledge.
- Whitin, D. J., & Whitin, P. (2011a). *Learning to read the numbers: Integrating critical literacy and critical numeracy in K–8 classrooms*. New York: Routledge.
- Whitin, P., & Whitin, D. J. (2011b). Investigating critical numeracy within a critical numeracy framework. *Language Arts Journal of Michigan*, 27(1), 38–42.

Phyllis Whitin and **David J. Whitin** are professors of elementary education at Wayne State University, Detroit, MI. They can be reached at phyllis.whitin@wayne.edu and david.whitin@wayne.edu.