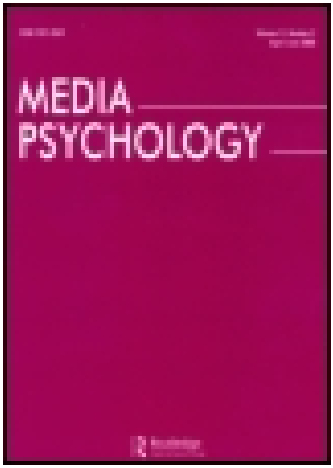

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Interaction and Participation for Young Hispanic and Caucasian Girls' and Boys' Learning of Media Content

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Interaction and Participation for Young Hispanic and Caucasian Girls' and Boys' Learning of Media Content

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Young Hispanic and Caucasian children viewed an animated educational television program in conditions that varied the level of interaction required. Girls and Caucasian children identified with the Hispanic female character more than boys and Hispanic children did. Children who actively responded to character prompts were more likely to understand the important program content than were those who simply observed it. Interaction was especially beneficial to Hispanic girls. The results suggest that programs designed to involve children in the content through participation or interaction provide unique opportunities for children to learn important educational media content, and that even very young children are sensitive to qualities of the symbolic role models who deliver those messages.

According to the 2000 U.S. census, Hispanics comprise 12.6% of the population and are one of the fastest growing minority groups in U.S. culture (U.S. Census Bureau, 2004). In spite of their growing presence in the U.S. population, Hispanic children have been virtually invisible in children's television programming (Borzekowski & Poussaint, 1998; Greenberg & Brand, 1993). For example, of the 185 characters featured in the top 30 programs viewed by preschoolers, only 6 characters were of Hispanic descent (Borzekowski & Poussaint, 1998). This lack of portrayals limits ethnic minority children's access to potential role models who are like them, who can guide their behaviors, and who can contribute to their developing sense of identity.

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Television has also been criticized for promoting passive, rather than active, engagement with content (Singer, 1980). Yet children learn a range of behaviors from observing televised content, including preacademic skills, prosocial behavior, and gender-related behaviors (Bandura, 1997; Calvert, 1999). One particular technique that helps young children become actively engaged with content is when television characters ask them to participate in learning activities (Anderson et al., 2000). Do unique benefits for learning occur when children are exposed to media models who are like them, or to interactive media that call upon them to become actively engaged with content rather than simply observe it? We explore those questions in this study.

GENDER AND ETHNICITY CONTRIBUTIONS TO EARLY IDENTITY DEVELOPMENT

From the beginnings of life, young children begin to separate self from other and to look for those who are similar to them (Katz, 1982). Media are an important source of information about self and other, particularly for those who do not have daily contact with those from a different ethnic background (Greenberg & Brand, 1993). Children find television characters that match their gender and ethnic background appealing (Fisch & Truglio, 2001), and many children identify with people who are similar to them (Calvert, 1999).

Being a boy or girl is an initial organizer of children's self-perceptions (Maccoby, 1998), which may then influence their early identification with other people. For this to occur, boys and girls must be able to label their own gender, an acquisition that occurs around age 2 (Kohlberg, 1966). Differential gender-based interests, as indicated by selecting certain television programs, occur during the preschool years for boys (Huston, Wright, Rice, Kerkman, & St. Peters, 1990). By age 7, boys attend differentially to male over female characters (Luecke-Aleska, Anderson, Collins & Schmitt, 1995). Young girls, by contrast, show less discrimination in their attention to male and female television characters (Luecke-Aleska et al., 1995), but it is certainly possible that a female character could positively influence their role model selections.

Racial and ethnicity preferences and identity emerge later than gender identity (Katz, 1982), appearing around ages 4 or 5 (Aboud, 1988). Caucasian children identify with and prefer White people before Hispanic children prefer and identify with Hispanic people (Aboud, 1988). Hispanic children's identification with Hispanic people does not fully emerge until around age 7 (Aboud, 1988), perhaps in part because color is salient to children and Hispanics have many different skin colors. Although there is considerable variability among subcultures of Hispanic descent, some of the more traditional Hispanic households value the machismo

male role more than the female role (Casas, Wagenhein, Banchero, & Mendoza-Romero, 1995). The implication is that Hispanic boys may not show early preferences for a Hispanic female television character because they focus on gender as an organizer of identity.

YOUNG CHILDREN'S EXPOSURE TO, AND LEARNING FROM, SCREEN MEDIA

Television is a ubiquitous presence in children's daily lives. Caucasian and Hispanic mothers report that their children spend similar amounts of time viewing television programs (Anand & Krosnick, 2004; Bickham et al., 2003). Hispanic mothers estimated that their 4-year-olds, our target age group, viewed about 2 hr of television per day (Borzekowski & Poussaint, 1998). However, Caucasian, more so than Hispanic, mothers reported that their young children interacted with computers, primarily because Hispanic families were less likely to own a computer or to have Internet access, regardless of family income (Calvert, Rideout, Woolard, Barr, & Strouse, 2005). If computers provide a stronger learning platform than television, then minority status may impede early exposure to interactive computer media, which in turn could put Hispanic children at a cognitive disadvantage. Are computers superior to television as a learning tool? The answer may lie in the concept of interactivity.

In Vygotsky's (1962) theory of cognitive development, a child learns cultural knowledge and tools for thinking through problem solving experiences shared with someone else, i.e., through interaction. More specifically, someone with superior skills can provide a scaffold for a less experienced learner to master content through turn-taking and contingent replies that build on previous exchanges. With the newer media, that responsive other person may be a virtual one, in the form of a computer program (Rafaeli, 1988). Hence, computers may be superior to television as a learning tool, because they provide opportunities for children to interact in a responsive environment with a more intelligent other.

Television also approximates interactivity by prompting viewer participation. Pauses are sometimes built into programs designed for young children, and the television host asks children to respond to queries (Anderson et al., 2000). Unlike computers, the child has a choice of responding, as the program continues regardless of a child's actions. Moreover, the program does not provide feedback about the correctness of particular responses. Even with these limitations, the program can prompt children to respond either physically or verbally at key program points. To the degree that children do so, they will be rehearsing important content in a motoric way that can provide an enactive form of representation (Calvert & Goodman, 1999) or in a linguistic way that can provide a verbal form of representation

(Friedrich & Stein, 1975). With repeated viewing, participatory prompts lead not only to active responding to a host's queries, but also to increases in cognitive skills such as creativity (Anderson et al., 2000). Thus, participation may provide a scaffold for eliciting important cognitive processing skills.

Observation of media content also allows a child to learn from television programs. Observational learning, based in social cognitive theory, depends on a child's skills to attend selectively to important content, to remember that information, and to translate what has been observed into behavior via imitation (Bandura, 1997). However, young viewers below the ages of 9 or 10 often experience difficulties in understanding television plots (Collins, 1970). Adult models that interact with children in their preschool environments have helped young children learn important television messages (e.g., Friedrich & Stein, 1975). Televised models that interact with their audience may provide similar assistance to young viewers (Anderson et al., 2000).

THIS STUDY

The purpose of this study was to examine how an educational television and computer program about a Hispanic child, *Dora the Explorer*, influences young Hispanic and Caucasian boys' and girls' identification with the main character, as well as their learning of the important story content. The main hypotheses of the study were as follows:

H1: Based on children's preferences for same-sex models (Maccoby, 1998), we expected girls, more than boys, to perceive the character Dora as more similar to them, to identify more with her, and to be more motivated and attentive to the program.

H2: Based on children's preferences for members from their own ethnic background (Greenberg & Brand, 1993), we expected Hispanic, more than Caucasian, children to perceive Dora as similar to them, to identity with her, and to be more motivated and attentive to the program.

H3: Based on the modeling literature (Bandura, 1997), we expected children who perceived themselves as similar to Dora and who identified with her to learn more of the important story content and to demonstrate more flexible thinking patterns because Dora uses flexible thinking skills in the target program.

H4: Based on the literature on the role that activity and interactivity play in learning (Vygotsky, 1962), we expected children who interact or participate with the content to become more engaged, and hence to learn more of the program content, than those who observe it.

METHOD

Participants

The sample consisted of 65 Caucasian children and 66 children of Hispanic descent ($N = 131$). There were 65 boys and 66 girls (M age = 4 years, 2 months, SD = 8.8 months). Children attended one of 8 childcare settings in a large metropolitan area. The Caucasian children were primarily from middle-class backgrounds, and the Hispanic children were primarily from Catholic early childcare settings, as well as Head Start Programs that serve children from lower-income families. Thus, ethnicity was confounded with socioeconomic status, an issue that was difficult to avoid given that 42% of Hispanic 2- to 5-year-olds live below the poverty line (Borzekowski & Poussaint, 1998). Within gender and ethnic groups, children were randomly assigned to one of four treatment conditions.

Stimulus Program and Treatment Conditions

The stimulus program was a 20-min educational animated episode of *Dora the Explorer* called *Sticky Tape*. Dora is a young girl who was designed to represent multiple Hispanic backgrounds; for example, Dora speaks Spanish at times, but she uses no words that represent one particular Hispanic subculture; similarly, the music played and the food eaten on the episodes are designed to be inclusive of children from a variety of Hispanic backgrounds (V. Lovelace, personal communication, March 3, 2006). These qualities may promote identification with Dora for children from diverse Hispanic backgrounds.

In this particular episode, Dora and her sidekick, a monkey named Boots, set out to save Benny the Bull, whose hot air balloon is losing altitude because it has a hole in it. As they chase Benny and the balloon with a roll of sticky tape to fix it, they encounter a number of obstacles that they must solve using sticky tape. These include (a) taping the holes in a sail so that a boat can transport them across the windy river, (b) using the sticky tape on their feet to get traction to climb over a slippery rock, and (c) using the sticky tape to fix Benny's balloon just before it falls into Crocodile Lake. In these tasks, Dora models divergent thinking, using the sticky tape in creative ways to solve problems. Throughout the episode, Benny calls out for help and Dora and Boots reply that they are coming. The characters also elicit participation and engagement by asking the audience for their help along the way. In this episode, the audience assistance typically involves helping with the sticky tape. For example, after the villain, Swiper the Fox, swipes the sticky tape and throws it into the forest, Dora asks the audience for their help in finding the tape. The episode ends as Benny is saved, and Dora thanks the audience for helping.

Four conditions were created from the original episode: control, observation, participation, and interaction. An adult sat beside the child in all conditions except the control, in which she sat in the back of the room and worked on papers. The original episode was named *participation* as Dora asked the audience to engage in program-related activities with her, and the adult coviewer participated at Dora's request. These invitations and requests were deleted to make the *observation* and *control* conditions. In the observation condition, the child viewed beside the adult. In the control condition, the child viewed with the adult in the back of the room. In this way, we controlled for possible modeling effects for looking at the screen. In the interaction condition, the program paused at nine targeted program points where Dora asked the child to participate with her. The child had to use a computer mouse and make correct decisions for the program to continue. For instance, when the character Swiper threw the sticky tape into the forest, the child had to click on the circular tape, partially hidden in a medley of forest shapes, for the program to resume.

Procedure

In a 45-min session, each child viewed their version of the program once on a laptop computer screen and then answered questions assessing prior exposure to the Dora series, perceived self-similarity to Dora, how much they wanted to be like Dora, their interest in the program, their memory of story content, and their divergent processing skills. Crayons and paper were available as a distracter task during viewing. Program sessions were videotaped so that we could later score program engagement and visual attention.

Dependent Measures

Perceived similarity and identification with Dora. Each child was asked "How much are you like Dora?" and "How much do you want to be like Dora?" Response options were *not at all* (coded as 0); *sort of* (coded as 1); and *a whole lot* (coded as 2).

Motivation. Each child was then asked "How much fun was it to watch *Dora the Explorer* today?" Response options were *not much fun* (coded as 0); *sort of fun* (coded as 1); and *lots of fun* (coded as 2). The fun index was used to represent child motivation.

Enthusiasm and active program engagement. Viewer engagement assessed how much physical and verbal involvement children demonstrated as they viewed the program. Using the videotapes, raters scored how much enthusiasm children demonstrated during 21 program points where Dora asked viewers to par-

ticipate with her. In the observation and control condition, we selected these same program points, even though there was no participation prompt. The 4 point rating scale included *no engagement* (coded as 0); *low level engagement*, where there was low energy expenditure and sometimes mumbling (coded as 1); *average engagement*, coded as responding to and participating with the television character prompts (coded as 2); and *enthusiastic engagement*, in which children sometimes jumped up and down, shouted, and pointed at the screen (coded as 3). Interrater reliability, calculated as 2 times the number of agreements divided by the total number of scores, was 82%.

Attention. Using the videotapes, we scored visual attention as *on* when a child looked at the screen, the adult, and the computer mouse; attention was scored *off* when he or she looked away. These scores were summed across these categories to create an overall attention index. Interobserver reliability was computed for 20% of the sessions. Interobserver reliability, computed as the percent of overlap between Observer 1 and Observer 2, was .94 for eyes on screen, .95 for eyes on adult, and .99 for eyes on mouse.

Learning of content. After exposure, each child answered a short questionnaire to assess his or her learning of the program content. The adult read each question and circled each child's responses on an answer sheet. This measure consisted of items measuring (a) learning of central, plot-relevant program material; and (b) divergent processing of content.

The 11 questions that assessed children's learning of central plot-relevant content were created following procedures originally developed by Collins (1970). Initially, a small group of adult judges viewed the program episode and rated the content as central, plot-relevant material or as incidental material that was irrelevant to the plot. Questions with a minimum centrality rating of 70% were retained. A sample central item is "How did Dora and Boots fix the sailboat?" The response choices were (a) they patch the holes with sticky tape; (b) they sew the holes up with a needle and thread; or (c) they use a blanket for a sail.

We then asked each child to tell us all the other activities they could do with sticky tape. The number of unique, original responses given was coded as the divergent processing score.

RESULTS

Overview

Because session lengths were variable, due mainly to different conditions, visual attention scores were converted into percentages. Perceived similarity scores,

identification scores, motivation scores, attention scores, central comprehension scores, divergent processing scores, and engagement scores, were analyzed, in turn, in a 2 (ethnicity) × 2 (gender) × 4 (condition) analysis of variance design. We also examined prior exposure to the Dora series in a 2 (ethnicity) × 2 (gender) ANOVA to control for a possible familiarity effect for subgroups of children. In regression analyses, engagement scores were used to predict learning, and perceived similarity and identification scores were used to predict divergent processing scores.

Prior Exposure

The 2 factor ANOVA computed on prior exposure (0 = *no* and 1 = *yes*) to the *Dora* series yielded no significant effects. As expected, children from both genders and ethnic groups were equally likely to have viewed Dora in the past.

Dora as Being "Like Me" and as a Role Model

The 3 factor ANOVA computed on perceived similarity to Dora (i.e., being "like me") yielded main effects of gender, $F(1, 114) = 7.863$, $p = .006$, and ethnicity, $F(1, 114) = 16.455$, $p < .001$, which were qualified by a gender by ethnicity trend, $F(1, 114) = 3.478$, $p = .065$. Consistent with our predictions, girls, more so than boys, perceived themselves as being like Dora ($M = 1.818$, $SE = .077$ vs. $M = 1.511$, $SE = .078$). Contrary to prediction, however, Caucasian, more so than Hispanic, children were likely to perceive Dora as being like them ($M = 1.886$, SE = .078 vs. $M = 1.443$, $SE = .077$). The statistically marginal interaction revealed that Hispanic boys tended to see themselves as least similar to Dora (Hispanic boys: $M = 1.188$, $SE = .11$ vs. Hispanic girls: $M = 1.698$, $SE = .11$; Caucasian boys: $M = 1.835$, $SE = .11$; and Caucasian girls: $M = 1.938$, $SE = .11$).

The 3-factor ANOVA computed on children's choice of Dora as a role model (i.e., "How much do you want to be like Dora?") yielded a main effect of gender, $F(1,113) = 20.034$, $p < .001$. As expected, girls, more so than boys, wanted to be like Dora ($M = 1.780$, $SE = .096$ vs. $M = 1.174$, $SE = .096$). Contrary to prediction, there were no effects favoring Hispanic over Caucasian children's identification with a Hispanic role model.

Motivation

We expected children in the interaction and, to a lesser extent, the participation conditions, to be more motivated about the Dora program than were those in the other conditions. This hypothesis was based on the premise that interactivity fosters interest in activities. These predictions were partially supported by the data.

The 3-factor ANOVA computed on motivation scores yielded a main effect of gender, $F(1, 115) = 4.982$, $p = .028$, favoring girls over boys ($M = 1.908$, $SE = .06$ vs. $M = 1.719$, $SE = .06$), and a trend for condition, $F(1,115) = 2.549$, $p = .059$. As expected, children in the interaction condition were more motivated than were those in the observation condition ($M = 1.938$, $SE = .08$ vs. $M = 1.625$, $SE = .086$, $p = .01$). Contrary to prediction, children in the participation condition ($M = 1.813$, $SE = .086$) did not differ in motivation from any of the other groups. Children in the control condition ($M = 1.878$, $SE = .084$) were more motivated than children in the observation condition, $p = .037$. Put simply, children were more motivated in the interaction and control conditions than in the observation condition.

Attention

The 3-factor ANOVA computed on the composite visual attention index yielded no significant effects. Across conditions, children attended 90% of the time. When examining subcomponents of attention, a main effect for condition $F(3, 115) = 3.482$, $p = .018$ emerged for visual attention to the screen. Children in the observation condition ($M = 92\%$, $SE = .026$), where the adult modeled attentive viewing, looked at the screen more than children in the control ($M = 82\%$, $SE = .026$) or interaction conditions ($M = 82\%$, $SE = .025$). Children in the participation condition ($M = 86\%$, $SE = .026$) did not differ from the other conditions in the percent of attention paid to the program. For attention to the adult experimenter, there were no significant effects. For attention to the computer mouse, the expected main effect of condition emerged, $F(1,111) = 15.169$, $p < .001$, favoring children in the interaction ($M = 1.5\%$, $SE = .002$) over the participation ($M = 0$, $SE = .002$), control ($M = 0$, $SE = .002$), and observation conditions ($M = 0$, $SE = .002$). Put another way, children in the interaction condition attended more to the computer mouse and those in the observation condition attended more to the program, but all conditions were still statistically comparable in overall levels of attention.

Memory of Central Content

The 3-factor ANOVA computed on children's comprehension of central items yielded a main effect of ethnicity, $F(1, 115) = 5.496$, $p = .021$, favoring Caucasian over Hispanic children ($M = 8.96$, $SE = .29$ vs. $M = 7.99$, $SE = .29$, respectively). This main effect was qualified by a gender by ethnicity by condition interaction $F(3, 115) = 2.888$, $p = .039$. As seen in Figure 1, Hispanic girls in the interaction condition answered more questions correctly than those in the observation ($p = .01$) or the control conditions ($p = .057$). Contrary to expectation, the regression analysis yielded no significant effects on comprehension of the central story content for child perceptions of being similar to Dora, identifying with her, or attending to the screen.

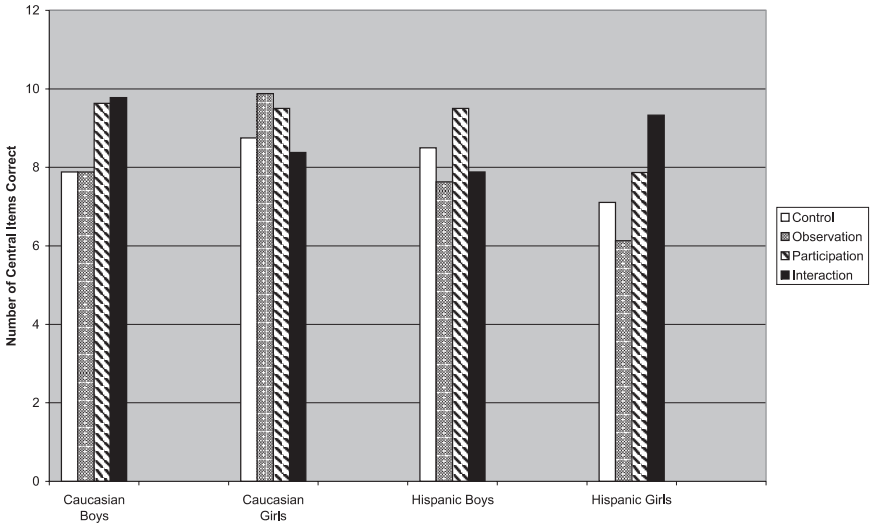

FIGURE 1 Number of central items correct by ethnicity, gender, and condition.

Divergent Processing

Because Dora models divergent thinking, we used a regression model to examine if Dora influences children's use of divergent processes. As expected, children who perceived themselves as similar to Dora made more total divergent responses for the use of sticky tape, $F(1,128) = 8.165$, $p < .005$. Perceived similarity was significant at $t = 2.857$, $p < .005$, $B = .252$, $SE = .088$, $\beta = .245$, $r^2 = 6\%$. However, identifying with Dora was not significantly related to total divergent responses.

Enthusiasm and Active Program Engagement for Learning

We were especially interested in the role that active engagement, as measured by enthusiasm in responding to Dora's queries, played in children's learning from the program. To compare all children, we eliminated the program points where the interaction condition had to use the computer mouse to continue the program and, hence, were required to be actively involved in the program. As expected, the 3-factor ANOVA revealed that children in the participation and interaction conditions were more engaged with the content than those in the control or observation conditions, $F(3, 114) = 33.478$, $p < .001$ (Participation: $M = 20.406$, $SE = 1.648$; Interaction: $M = 11.628$, $SE = 1.624$; Observation: $M = .594$, $SE = 1.648$; Control: $M = .969$, $SE = 1.624$). Children in the participation condition were also significantly more engaged with the program than those in the interaction condition.

We then conducted a regression analysis using engagement scores as a predictor of central program content comprehension. As predicted, children who were more engaged, as measured by physically or verbally acting on the content, were most likely to understand the content, $F(1,128) = 16.648$, $p < .001$. The engagement variable was significant at $t = 4.080$, $p < .001$, $B = .068$, SE = .017, $\beta = .339$, $r^2 = 12\%$.

Summary

Identification with Dora, perceiving Dora as similar to oneself, and feeling motivated about Dora were primarily associated with being a girl rather than a boy. Being a Hispanic child did not predict identification with Dora. In fact, Caucasian children perceived themselves as similar to Dora more than Hispanic children did, particularly the Hispanic boys. Children who verbally or physically responded to Dora's invitations (i.e., who were more likely to be in the participation or interaction condition) were more likely to understand the central story content than those in the observation or control conditions.

DISCUSSION

The purpose of this study was to examine the role that interactivity and identity play in young Hispanic and Caucasian children's learning from an educational television program. As early as the preschool years, gender was used by children to define how similar they were to media characters and how much they wanted to be like them. In particular, girls chose Dora as a role model and as someone who was like them more than boys did. Girls were also more motivated than boys, as indexed by how much fun they had viewing Dora. These findings are particularly striking because gender constancy, the knowledge that being a boy or girl is unchangeable, does not emerge until about age 7 (Kohlberg, 1966). The findings suggest that the simple knowledge that one is a boy or girl may be sufficient for young children to select certain characters over others as their role models. The findings are consistent with gender schema theory in that belonging to a particular gender group was sufficient for children to be more interested in a character who shared that attribute (Martin & Halverson, 1981).

It is interesting that Caucasian children were more likely than Hispanic children to perceive themselves as similar to Dora. This finding is surprising because Dora is a Hispanic girl, designed to appeal to Hispanic children. A marginal interaction of ethnicity and gender suggests that it is Hispanic boys who do not perceive Dora as like them. Given the gender stereotyped machismo role of certain Hispanic subcultures (Casas et al., 1995), young Hispanic boys may be under even greater pressure to adhere to traditional gender-stereotyped roles than are young Caucasian

boys. It may also be that young Hispanic children do not yet have a firmly established understanding of their ethnic identity (Aboud, 1988). The results are promising in that Caucasian children perceive themselves as similar to a Hispanic child, an effect that could foster pro-Hispanic attitudes by them and be especially beneficial to those in the viewing audience who live in areas of the country where there is less access to the Hispanic population (Greenberg & Brand, 1993). The popularity of *Dora the Explorer* can bring a Hispanic girl into their homes on a daily basis, on their television sets.

Consistent with prior research that linked creativity to repeated participation with children's educational television characters (Anderson et al., 2000), we found that the children who identified with Dora were more successful on the divergent processing task after only one exposure. However, those who identified with Dora were not more attentive to the program, nor did they understand the central, plot-relevant story content any better. In this study, we believe that the presence of the adult who modeled attentive viewing elevated children's visual attention to the program in the observation condition, but without enhancing their actual interest in, or their learning of, the story material. Attention during the Dora program was also high, averaging 90% across the four conditions, which is a sufficient amount of time for learning to take place for all children, and which also created a ceiling effect.

Although identification with Dora did not predict story comprehension, active engagement with the content did. More specifically, engagement with the program content, which was higher in the participation and interaction conditions than in the control or observation conditions, predicted children's learning of the central story material. In particular, those children who actively responded to Dora's actions, be it verbal (e.g., by saying "Swiper" when they saw this character on the screen trying to swipe the sticky tape) or physical (e.g., pretending to climb the ladder to fix the balloon), were more likely to understand the central story content. For Hispanic girls, interaction with the program content via a computer interface was especially likely to enhance their learning of central story material when compared to observing it. The findings are consistent with previous studies (e.g., Calvert & Goodman, 1999; Friedich & Stein, 1975) in which young children who act on content are more likely to learn central story material. Taken together, the findings support the thesis that physical or verbal activity generates symbolic processes that can support children's learning (Vygotsky, 1962) and that computers can serve as a responsive other who can interact with young children in ways that advance learning (Rafaeli, 1988).

A caveat of our findings is that ethnicity was confounded with social class. We had difficulty locating Hispanic children, and some of those Hispanic children came from Head Start programs that serve low-income families. Caucasian children may perceive themselves as more similar to Dora than Hispanic children, and hence remember more information about her because of their social class. For example, chil-

dren from middle-class homes remembered information about people who were similar to them in social class rather than race (Newcomb & Collins, 1979). Dora also spoke much more English than Spanish during the program. To the extent that language is comprehensible and perceived as a marker of a shared cultural identity, Caucasian children may find her more similar to them than Hispanic children do. A third possibility consistent with the literature is that 4-year-old Hispanic children have not yet developed a Hispanic identity, yet Caucasian children are already looking for those with white skins (Aboud, 1988). In short, children may decide that someone is like them for many different reasons. Ethnicity may not be as important as socioeconomic status, language, or gender for young children's decisions about perceived similarity. Future research should revisit some of these issues, particularly with older children who have a well-established ethnic identity.

In conclusion, television serves an important socialization role in minority children's development with young Hispanic children spending an average of 2 hr per day watching television (Borzekowski & Poussaint, 1998). Although young children may be looking for role models who are like them, our data suggest that these decisions are based on being the same gender more than on being from the same ethnic background. It is clear, however, that a program featuring a Hispanic character can have strong appeal to children of various ethnic backgrounds, suggesting the ongoing use of minority characters in children's programs. The key to learning at young ages involves practices that engage children directly in the content, either by participating with the characters or by interacting with the content via a computer mouse. The implication is that the creators of children's educational programs should be encouraged to use program techniques that directly address and actively engage young children with program content, as these techniques provide measurable increases in young children's learning.

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