
Children's Processing of Theatre as a Function of Verbal and Visual Recall

by
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To compare cognitive processing of theatre with what is known in television research, this study describes 32 5th graders' dramatic literacy. Children overwhelmingly processed information from within a production's confines rather than from their general world knowledge. Their heavy reliance on explicit visual modes hampered their use and integration of verbal modes to derive deeper psychological implications.

The Need for a Descriptive Study

Children's theatre artists and pedagogues suspect that television has critically altered and possibly impaired children's apprehension of live theatre. Yet the question is not "What has television done to children?" but "What do children do with television?"—or any given medium for that matter (Wartella and Reeves 1984, 25).

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In an effort to determine whether the represented medium is the encoded and stored message (McLuhan 1964), researchers have investigated the comparative influence of various media on children's story apprehension (e.g. Brown 1986). Unfortunately, live theatre has been neglected in the cognitive developmental research. Despite the past 25 years of television research with children and its potential analogies to the theatre listening and viewing experience, no children's theatre researchers have explored these media studies in depth for comparative purposes.

Whether stories are presented through television, radio, print, or theatre, children must process narrative content with "dramatic literacy," defined as "the ability to use drama (receptively and expressively) as a way of knowing—as a tool for gaining a better understanding of one's self and one's place in the world" (P. Collins 1985, 4). This cognitive process of explicit and implicit learning requires the ability to perceive, recognize, and interpret dramatic symbol systems at various intellectual levels (Rosenblatt 1984). At the most basic level, perception involves seeing visual actions and listening to dialogue. At higher levels of inferential thinking, audio-visual stimuli must be abstracted to discover and create personal and metaphoric connec-

tions both within and outside the given story and its medium. This entire cognitive process assumes a voluntary participation and interaction with the dramatic narrative process on the part of children.

Since "plays teach because an idea is embodied in an action" (Davis and Evans 1982, 114), children must interpret dramatic actions (i.e. what characters do or try to do) in order to conceptualize plays. Cognitive developmental research indicates that 10-year-old children are just beginning to connect character motives to dramatic actions in their inference-making endeavors and thereby retaining more central than incidental actions for overall comprehension (W. Collins 1983; cf. Landy 1977).

In televised story versions, children exhibit higher verbal recall of story actions than dialogue because moving pictures induce visual information processing. Children base their inferences regarding plot, setting, time, and character affect on such inside-story, visual cues as character facial expressions, costumes, and actions (Meringoff 1980; Vibbert and Meringoff 1981). On the whole, children attend to dialogue which discusses immediate and observable characters and events over dialogue which refers to information in another time and place (Anderson, et al. 1979). On the other hand, when abstract words are reinforced by imagery, children can better recall these linguistic notions by means of a "spread or depth of encoding" process (Craik and Tulving 1975). Therefore, explicit audio-visual information of dynamic dramatic action increases story apprehension for younger children, while the ability to make critical inferences from implied information increases with age as children grow better able to integrate verbal information into visual modes (Meringoff, et al. 1983).

In contrast, radio and storytelling versions with static illustrations, induce children to rely on verbal and aural processing and to draw upon their outside, general world knowledge. Children attend to such aural cues as character accents, vocal qualities, and sound effects to determine character attributes and settings, and they tend to ignore literal or non-literal descriptions of visual content (e.g. Vibbert and Meringoff 1981).

These findings highlight the striking power of visual imagery over aural and verbal modes. Although theatre has its early historical roots in myth and ritual framed by rhetorical and literary traditions, live theatre today remains a *visual* medium of spatial and temporal images. When children are faced with moving pictures, visual features, and dramatic actions in particular, become more important than words. Though theatre artists intend poetic language to affect aesthetic responses, children may very well be ignoring these

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qualities in favor of visual forms induced by theatrical images.

Media contexts and reality levels also affect visual dramatic learning. Children invest less mental effort in processing television content because they perceive television as more realistic and "easier" than print (Salomon 1984). In contrast, one study (Campbell and Campbell 1976, 204) suggests that live presentations may elicit greater attention and superior learning than recorded versions. Children also rely on photographic realism as a ready means for evaluating levels of fictional reality (Kelly 1981). In fact, when evaluating the visual arts, children apply "rules of realism" in both form and content as they develop aesthetic tastes and preferences (Parsons 1976; Parsons, et al. 1978).

"Are the visual or the aural aspects of the production more important in affecting the process of conceptualization?"

With these media studies in mind, several questions guided the design of this study. Do children voluntarily process theatre with dramatic literacy by inferring outside metaphoric connections? As Davis (1961, 274) asks, "Are the visual or the aural aspects of the production more important in affecting the process of conceptualization?" Which visual, aural, verbal and psychological features do children depend on to apprehend theatrical messages? How do these aspects differ, if at all, from what is known in the comparative media research? Essentially, what can theatre do for children that no other arts and entertainment medium can do?

This empirical study is limited to children's recall of a given theatre production rather than their initial affective responses. Conclusions inevitably reflect individual preferences and aptitudes with regard to a specific performance rather than to any speculations about the population at large or the theatre medium per se.

A Study of Children's Interactions with Theatre

Theatre Performance

A production of Arthur Fauquez' *Don Quixote of La Mancha* (1986) was chosen for its high artistic standards of a classic literary tale. As media researchers have demonstrated, the explicit and implied means of presenting textual material in actual performance conditions must be critically analyzed in order to compare artistic intentions against audience responses. Therefore, the plot structure, characterizations, dialogue, staging and acting choices, and design elements were assessed by interviewing the director, the lead actor and designers (Klein 1987, 45-67).

Subjects

Two 5th grade classrooms were randomly selected from the regional area. Fifteen girls and seventeen boys (mean age 10:7) participated in the study for a total of 32 children.

Procedure

Children were bussed from their schools to the auditorium (seating 1,188) for matinee performances

on two different days. One classroom sat in the first two rows of the center front orchestra about 25 feet from the proscenium line, and the other classroom sat in the center front mezzanine about 50 feet away.

Individual 15 minute interviews were conducted the following days at the respective schools in quiet rooms. An additional interviewer and two assistants were fully trained during pilot tests conducted after dress rehearsals. Each interview was tape recorded for later scoring purposes.

Scoring and Data Analysis

Descriptive analysis was the primary method used based upon children's most frequent responses to open-ended questions. Quantitative scores were accumulated for forced choice answers. A coding system developed by Meringoff (1980, 244; Vibbert and Meringoff 1981, 20-21; Banker and Meringoff 1982, 51-52) was adapted for scoring inference substantiations and free recall responses. An independent rater assisted in scoring with interrater agreement ranging from 85% to 100%. A displacement scoring method was used for the seriation task with 21 as the highest possible score. Simple correlations were run on all independent variables before collapsing them into more general indices.

Response Measures, Results, and Discussion

Familiarity, Enjoyment, Entertainment and Educational Purposes, Difficulty, and Attribution. None of the 32 children was previously familiar with the story. To compare pedagogic intentions, children were asked whether this play was fun and whether or not it was meant to teach children their age. While 78% enjoyed the production "a little bit" and only 22% like it "a lot," 68% agreed that the play was fun, while 16% disagreed, and 16% judged it "in between." Opinions were evenly divided as to the production's entertainment and educational purposes. The majority (66%) found the play "sort of hard" to understand, while 53% of this group attributed this difficulty to the play itself ($r = .67, p \leq .00$) and 13% admitted metacognitive factors.

Free Recall. Children were asked to recall what they remembered best from the performance. At least one central action was recalled by 75% of the children, while 72% remembered at least one, if not more, incidental activities. These free responses largely reflected visual attention to central (40%) and incidental actions (37%), characterizations (11%), or spectacle elements (12%). Dialogue and aural details were recalled only 7% of the time.

Plot Sequencing Task. Rather than have children rely solely on verbal responses as a recall index, a seriation task provided an "analogous" processing of the play through visual (color photographs) or verbal (type written dialogue) means. Children were asked to sequence 7 central and then 7 incidental randomly-ordered dramatic actions. Given both verbal and visual conditions, they had the choice of turning the cards over at any time, while an assistant recorded their turns for each card.

Results from this task reflected children's diminishing attention from the beginning of the play and their ability to store and integrate each successive central action

to comprehend the entire plotline. Children were only 40% successful in correctly sequencing all scenes combined, yet strong primacy and recency effects held constant for both conditions. Despite the high perceptual salience of one central scene in the middle of the play, this card required the greatest number of turns with the least successful results in both conditions.

Visual processing (mean score 17.14) proved more successful than verbal processing (mean score 14.46). Central actions, including 5 fight scenes, were recognized only slightly better (mean score 16.65) than incidental actions (mean score 14.56) in all but the verbal condition, especially for boys ($r = .37, p \leq .039$). Those children who essentially switched from verbal to visual condition processed central actions like the visual condition children (mean score 17.4), but they processed the incidental actions like the verbal condition (mean score 14.8). This finding suggests that dialogue was necessary to integrate more fully these incidental actions within the plot, and that the central actions were already sufficiently communicated and integrated by visual means. Four children correctly ordered the 4 individual arrays--all using photographs.

Children turned to the photographs 3 times more than to the dialogue, and they turned the central action cards over nearly twice as much as incidental cards ($r = -.37, p \leq .035$). This finding suggests that children recognized the critical importance of these central actions, and they, therefore, worked harder and received more information by turning the central cards more frequently. These results also strongly confirm the hypothesis that theatrical images, like television, induce visual processing, and that children even prefer to process their stories more quickly and efficiently through pictures.

Inference-making. To test children's dramatic literacy further, several broad questions focused on the protagonist's superobjective, motives, affective disposition, consequential death, and the overall point or concept of the play.

Generally speaking, 91% of the children interpreted Don Quixote's superobjective primarily as wanting "to be a knight" in keeping with the actor's self-actualizing intentions, even though they were asked what he wanted to *do* throughout the play. In regard to his motives, 22% cited altruistic reasons, 31% involved personal gain or ambition, 16% cited personal pleasure from an egocentric viewpoint, 16% repeated motives already cited in previous superobjective responses, and 16% did not know.

When asked whether Quixote was crazy or heroic "at the very end of the play," 44% found him more heroic, 28% thought him more crazy, and the remaining 28% argued for both affective dispositions. As indications of plot integration, opinions were largely based on Quixote's actions (46%) throughout the play (34%), rather than solely on the last scene (25%) or earlier scenes (25%). In general, Quixote was stereotypically heroic because he fought bravely and returned to "normalcy" at the play's end. In regard to his death, 66% admitted some degree of sadness, while 19% had mixed emotions. These results confirm this age group's

search for personal relevance and their difficulty in inferring idealistic character motives.

When asked to conceptualize the entire point of the play, 44% reported inference⁵ based upon inside-story information or previously raised issues. An additional 31% created metaphoric connections beyond the givens of the play revealing higher levels of dramatic literacy. For example, several children realized that if you get involved in books too much, as Quijano did with his chivalric romances, "you might go cuckoo." The remaining 25% did not know the point of the play, at least insofar as they were able to express themselves verbally.

Visual, Verbal/Aural, Psychological, and General Knowledge Bases for Inferences. To determine the bases of evidence used to substantiate inferences, children were asked "How do you know?" after four inference responses. In addition, two other questions further validated other measures. An overwhelming 88% could not identify Dulcinea, an offstage character, even though her identity was explicitly described and mentioned 24 times in the text. When asked whether Quixote knew that the Knight of the White Moon was really Carrasco in disguise, the temporal distance between the play's climax (i.e. the joust) and resolution hindered integrative processing as reported in other television studies (e.g. W. Collins 1983, 138). Children ignored both aural inflections in implied dialogue as well as implied visual actions in the final scene. Without explicit dialogue or visual clues in the climactic scene, children could not grasp Quixote's sophisticated motives and subtle acting behavior. The implausibility of his true intentions and the theatrical convention of costume disguises also impinged upon responses.

Like television, theatre is processed by children visually half of the time.

When summarizing the 21 sub-categories used in coding inferential bases, results indicated that children overwhelmingly processed information from within the confines of the play (99%) much like the results reported in television research. (Only 16% ever drew from their general world knowledge.) Children primarily depended upon Don Quixote's visualized dramatic actions (34%) far more than his dialogue (9%) or his motives (6%) when answering all probes combined.

Like television, theatre is processed by children visually over half of the time (63%) by relying primarily on characters' dramatic actions (44%) more than on characters' acting behaviors (8%) or their costumes and props (11%). In fact, visual aspects were depended upon over twice as much as verbal/aural (15%) and psychological means (21%). What characters said (13%) also appeared to be more important than how they said it (1%). Overall, these 5th graders tended to process the play largely through their sensory perceptions (i.e. sight and hearing) 78% of the time rather than by interpreting implications at deeper psychological levels (22%) (cf. Goldberg 1989). At this cognitive developmental level then, these children still depend

upon literal, physical characteristics over the psychological domain (cf. Gardner 1982, 166).

On the whole, 69% of the children used visual modes 7 to 13 times. In contrast, 81% and 66% used verbal and psychological modes respectively 1 to 4 times. Yet visual, verbal, and psychological modes did interact significantly in overall levels of processing. The more children used visual modes, the more they also tended to use verbal and aural modes ($r = .37, p \leq .038$) and psychological modes ($r = .36, p \leq .043$) as well. An even greater significance arose when children integrated verbal modes to use deeper psychological means ($r = .52, p \leq .002$). In addition, the more children used all modes combined, the easier they found their understanding of the entire play ($r = -.35, p \leq .048$).

Unlike television research, the children in this study never derived story information from facial expressions, probably because they could not see facial details in this auditorium setting. Without this vital, emotion-filled, visual clue to assist in inferring psychological states, reliance upon dramatic actions seemed to make up for this deficiency. Without the facial closeups which television provides, children at this age level depend more so upon what a protagonist does or tries to do (34%) than what that character says (9%) to comprehend stories.

These significant findings hint at the possibility that live theatre may, indeed, induce greater amounts of invested mental effort and deeper levels of emotional involvement over the television medium.

Preference for Theatre or Television. Finally, children were asked their medium preferences and the differential reasons for such. Here, 78% preferred theatre over television for its live values, its greater visual size, clarity, and "unedited" focus while sitting in the dark, and its greater sense of "closeness" or immediacy. In fact, children who preferred theatre were more likely to cite theatre's live quality more frequently ($r = .44, p \leq .012$) and to feel greater degree of sadness over Quixote's death ($r = .49, p \leq .009$) than those who preferred television. They were also more likely to perceive an educational purpose to play ($r = .38, p \leq .033$) and to make outside metaphoric connections when inferring the overall concept of the play ($r = .48, p \leq .016$). These significant findings *hint* at the possibility that live theatre may, indeed, induce greater amounts of invested mental effort and deeper levels of emotional involvement over the television medium.

The remaining 22% preferred television over theatre primarily for reasons of greater viewer control and home comfort ($r = -.61, p \leq .00$). While some theatre children thought the stage picture was "more real," television children preferred television's level of reality. Interestingly enough, these children tended to achieve higher scores in the incidental action sequencing task than the central task ($r = -.37, p \leq .036$), in part because theatre seemed less fun and exciting ($r = -.40, p \leq .023$). Perhaps this finding indicates

their preference for visual bits of stimulation over deeper levels of processing where verbal modes must be integrated with visual modes.

Implications of the Results

This initial descriptive study confirms that 5th grade children process theatre visually from within the given circumstances of a performance rather than from their outside general world knowledge, much like television at this cognitive developmental level. Contrary to artistic intentions, most children (69%) failed to automatically abstract deeper, metaphoric connections and conceptual ideas. In terms of dramatic literacy, what they knew was what they literally saw and heard in the performance.

Children's heavy reliance upon the literal and physical circumstances of the production primarily through visual and verbal means (78%) hampered their overall recognition and interpretation of the protagonist's psychological state. Quixote's dramatic actions did, indeed, teach children the major thrust of the play's message, yet his social deviations smacked up against children's "neoclassic" ideals of character decorum and plausibility. Because appreciation of Quixote's actions depended on understanding his highly moral motives, most 5th graders failed to grasp fully the value of his superobjective and the spine of the play.

Applications for Future Research

This initial study obviously raises more questions than it answers. Duplications and adaptations of the testing instruments used here are needed with other plays, productions, age groups, and environmental settings to verify or dispute the results obtained here. In order to discover the critical differences between children's processing of the theatre and television, a comparative study with analogous story versions might focus on possible key differences in children's emotional involvement and their amount of invested mental effort both with and without instructions to watch for learning purposes. (cf. Meringoff, et al. 1983; Salomon and Leigh, 1984).

The value of separating form from content raises new insights and directions when seeking to compare children's interactive experiences with theatre against television. Rather than trying to compete against television by mimicking its "hype" with frenetic stage activity and dazzling special effects, directors might stage productions with greater confidence in the ability of live performers to communicate deeper human values through verbal means fully manifested and integrated into visual modes. If theatre artists desire to give children a "crystallizing experience" they will never forget, then exploiting the theatre medium's distinctiveness to its limits holds great promise for the development of present and future audiences. ■

NOTES

¹ The seriation task was scored on the basis of the number of correct cards placed in front of each card. For example, if cards were ordered 1, 2, 3, 5, 6, 4, 7, the scoring would be as follows:

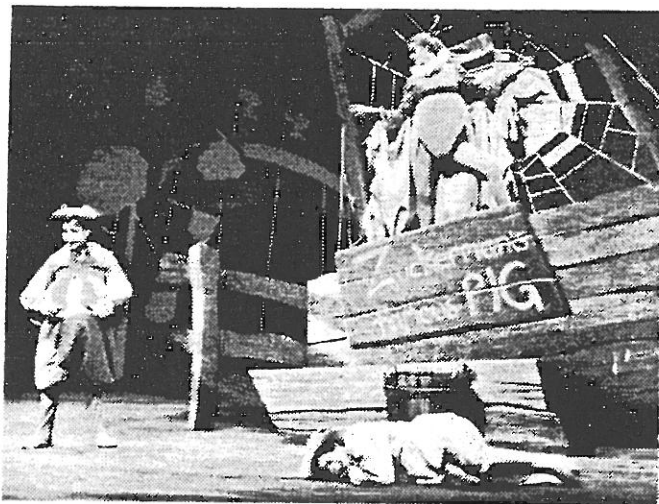
Card 7 - 6 points
Card 4 - 3 points (because 5 and 6 come after)
Card 6 - 4 points
Card 5 - 3 points
Card 3 - 2 points
Card 2 - 1 point

19 points

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