2 Academics

In an article for *Byte* magazine published in 1984, Ann Piestrup describes a new media category that she calls "graphics-based learning software." "Only recently are computer scientists and educators beginning to collaborate to create learning software that can fulfill the promise of the personal computer to transform education." She argues that unlike text-based computer-aided instruction approaches or entertainment titles that require little interaction on the part of the child, "powerful learning software programs, such as learning game sets and builders, use graphics to convey meaning, not to decorate the screen" (1984, 215). Her article reviews software titles produced at the company she founded in 1979, renamed The Learning Company (TLC) in 1983.

I met with Piestrup, who now goes by the name McCormick, in 2000, at Buck's Café in Woodside, California, at the peak of the dot-com deal making. She reflected on her experience in the 1980s and described the heady sense of excitement felt at the time in creating a new category of media and a new category of learning experience that differed, on one hand, from instructional software being used in schools and, on the other, hand, from video games. "We created a new category by working with an Atari game designer and educators that were serious. We weren't trying to mimic zooming video games, but we were mimicking real-time interactivity." Moreover, she said, "I didn't want to call it educational because to me that meant schooling, dusty, institutional. That's why I called [my company] The Learning Company not the Education Company." TLC went on to become one of the largest names in children's software and was sold to Mattel in 1998 for $3.8 billion. Although the company has weathered many ups and downs and has been bought and sold numerous times since then, it is still one of the leading brands in children's software.

Despite being burned numerous times in business dealings through the years, McCormick was in 2000 still an impassioned entrepreneur and spokesperson for the uses of computers to support learning. She showed me her new business proposal to create new learning environments that make use of the growing power of today's PCs and networking infrastructures. "I want every child in the world to be able to get the basic skills they need to function thoughtfully, with graceful feelings as well." A former nun, schoolteacher, and educational researcher, McCormick is an irrepressible missionary for the cause of computers in enhancing learning, particularly for disenfranchised populations: "We want to do lifelong learning for the whole world. And there is assessment going on constantly, and we make sure they [children] move all the way through the math, science, and readiness that they need. We think about the beauty of the structure . . . and not just the nuts and bolts." She sees her work as a quest for human equality, based on "a conviction that stems from my sense of human fairness that extends to all children." For her, literacy is a basic human right that ensures a voice in the social world.

McCormick embodies the passion and dedication of the early developers of learning software who felt that computers could enable child-centered, egalitarian, and engaged approaches to learning. Her challenges in realizing this vision in the commercial sector also point to the contradictions and tensions inherent in crossing the boundaries between school and home, education and entertainment, nonprofit and for-profit realms. This chapter explores the negotiations among educators such as McCormick, capitalist enterprise, and the changing structures of technology in the emergence of a category of software that came to be called *edutainment*. I use the historical backdrop of edutainment as a way of exploring the academic genre of children's software. Unlike the entertainment and construction genres, which I describe in chapters 3 and 4, the market category "edutainment" and the academic genre are firmly grounded in an educational imperative to instruct children in literacy skills and core academic content. Beginning with a discussion of historical roots, this chapter describes the cultural context and social distinctions related to this genre of software and how they manifested in everyday play in the 5thD during the period that I did my fieldwork.

The Historical Roots of Edutainment

Learning software for children is contextualized by discourses of childhood, learning, and play that framed earlier media such as children's literature and developmental toys. As with these earlier forms of children's culture, children's software was initially conceived of as an educational tool for children that wedded the virtues of play, learning, and literacy, and that drew from a growing twentieth-century belief within the middle-class American home that learning should be fun to be effective. Freed from the classroom's narrow curricular constraints that defined early drill-and-practice computer-aided instruction, the new commercial software was designed to be appealing and engaging for children and to compete with other leisure-time activities. This dynamic negotiation among schools' educational demands, parents' achievement concerns, and children's desires and pleasure has been a central one in the lives of U.S. children at least since the late nineteenth century, defining the ways in which children's media and toys have been produced and consumed. McCormick and other early innovators in children's software occupied a shape-shifting patch of turf in this contested terrain, where children's media was designed not only to be entertaining and engaging for children, but also to appeal to parental concerns about learning and achievement.

Educational children's products have sustained themselves in a variety of forms as a niche market for educationally minded families through the years. Before the advent of children's software, there was both a well-established discourse of educative play and a related market in children's media and toys. Although edutainment represented a new set of technologies and a new market niche, its success was highly contingent on the fact that earlier media such as public children's television and children's literature had established certain genres that families and educators recognized as both fun and educational. After the initial experimental period, the children's software industry also utilized distribution channels such as bookstores and toy stores that were already in play for reaching families who were likely to purchase educational media (Buckingham and Scanlon 2003).

In book publishing of the seventeenth and eighteenth centuries, children's content was initially characterized by highly didactic, moralistic, and religious tracts. The mid–nineteenth century was a turning point in

the production of media commodities directed at children, seeing the growth of fiction that was written to delight and engage children. Titles such as *Alice's Adventures in Wonderland* and *Fern's Hollow* were indicative of a freeing of children's literature from its religious and didactic roots toward a more playful and imaginative model. The next century saw a blossoming of children's fiction, the establishment of a related segment of the publishing industry, and the growth of a new genre of children's literature in the form of the comic book (Kline 1993, 89–97). In contrast to television and radio, books are considered a vehicle for achieving both basic and cultural literacy and thus have always been a preferred form of media for bourgeois sensibilities. Even without overtly didactic content, children's literature has occupied the privileged terrain of learning media, marketable as a highbrow commodity to educated families. Describing the current state of children's literature, Stephen Kline writes that the children's book industry in Canada and the United States is "a niche market, based on a narrow segment of the population buying a lot of books: mainly the wealthy and educated book-oriented segment of the market, people who still see books as vital tools of socialization" (1993, 96).

Toy consumers, by contrast, have a more mixed demographic, and learning toys are only a small—albeit resilient—segment within the broader toy industry. Gary Cross describes the growth of an American toy industry infused by mass media in the 1930s with the advent of Mickey Mouse and Shirley Temple dolls. He also describes an alternative trend in toy production, however: "Not all parents in the 1930s bought their children Mickey Mouse hand cars and Shirley Temple dolls. While toymakers were selling Brownies and Kewpies, psychologists and teachers were promoting plain wooden blocks and pegboards as early learning tools" (1997, 121). According to Cross, significant growth occurred in the number of new parenting experts and manuals in the 1900s and in a rational approach to child rearing that he calls "scientific motherhood." Contemporary efforts to make learning enjoyable can be placed within an established educational tradition that includes Jean Piaget and Friedrich Froebel, who believed in the educational potential of play. As children were removed from the workforce, parents increasingly saw play as the core activity of childhood (Cross 1997, 123–4). Ellen Seiter analyzes advertisements in *Parents* magazine during this period of growth in the number of educational toys from the 1920s to the 1950s. "*Parents* continually repeated the

platitude that play was educationally valuable." "Toys could guarantee joy yet be instruments of hard work and achievement. What more could anyone ask from a commodity?" (1995, 66, 67). As Cross puts it, "Play had become the 'work' of children. And work required tools" (1997, 129). He describes how parents with more Victorian values were faced with the task of resisting a rising tide of children's consumer culture:

> To many middle-class parents that consumer culture seemed to express the narcissism and quest for immediate gratification that bourgeois Americans identified with the lower class. And it threatened to engulf their children as they went to the movies and ached for those flashy toys offered by Louis Marx. The ideals of self-directed play, with objects of simple design had nothing to do with the appeal of character toys. Educational playthings represented, to middle-class parents, a bulwark against the tide of commercialism and its threat to undermine parental authority and Victorian values. (1997, 134–135)

This bourgeois view of childhood play as a privileged and generative site for developing the agency of cultural producer or "worker" was established in opposition to a hedonistic, "consumptive," or "recreational" view of play that was associated with licensed products and children's "junk culture." This period saw the emergence of the contemporary cultural distinction between high and low children's culture and the integration of this distinction with processes of class distinction.

After the ascendancy of television in the 1950s, these cultural and social dynamics changed quite dramatically, and the Victorian parental orientation toward childhood discipline and intellectual development was overshadowed by the influence of a fast-paced, commercial, fantasy-based children's popular culture. Attitudes toward restraint and denial in children's consumption eroded in the face of television and the ubiquity of children's popular culture. Educational toys were marginalized in an era of novelty toys and discount toy retailers, though they were still an important niche market, particularly for preschoolers. As commercial children's culture has taken hold, however, many families have been part of a countervailing tide of resistance to commercial children's culture. A large volume of publications aimed at the educated middle-class argues against children's exposure to media and licensed commodities, ranging from conservative calls for a return to family values to left-wing attacks on negative stereotypes in commercial media. The market niche of educational children's products, ranging from wooden train sets to classic children's

books and Lego blocks is a source of cultural capital that unites the anti-commercial sentiments of certain sectors of both the conservative and the progressive middle class (Seiter 1995, 3–6).

In her study of the relationship between class identity and parenting, Annette Lareau (2003) describes how middle-class families engage in a process of "concerted cultivation," where parents manage and structure their children's time outside of school. Structured activities such as music lessons and organized sports are hallmarks of how middle-class families manage and "enrich" their children's lives. She contrasts these families to working-class families, in which parents see themselves as facilitators of "natural growth" and kids have more unstructured time to spend with friends in a way that is not managed and directed by adults. These differing orientations to child rearing are also reflecting in attitudes toward media, where middle-class families tend to set limits on unstructured recreation and screen time. Seiter has critiqued the stance of members of the educated middle-class who feel that management of their children's media environments is an indicator of superior parenting: "It is necessary continually to attack the smug self-satisfaction of educated middle-class people who believe themselves to be cleverer than those who do not attempt to monitor, mask, or deny their own television viewing, who believe that other people's children are already ruined by 'exposure' to television" (1995, 6).

Lareau and Seiter's work provides an important reminder that children's media consumption is inseparable from specific parenting approaches and that these approaches are in turn deeply implicated in the production of class identity. The development and marketing of children's software is likewise inseparable from these class dynamics and parenting attitudes and from a much longer cultural history of how middle-class families have valued educative forms of play. The dynamics are also clearly evident in the public scripts about regulating media in the home that were the subject of Hoover, Clark, and Alter's (2004) study. In these scripts, many parents referenced the notion that limiting media is a mark of good parenting, even while the actual practices in their households rarely conformed to these public scripts. Sonia Livingstone's study of families and new media adoption similarly indicates that the relationship between class and media consumption is not straightforward, but that middle-class parents tend to mobilize scripts that have to do with limiting media use, working to keep their children occupied with more "productive" activities (2002, 93–99).

Digital media entered into these existing social and cultural distinctions by introducing flashy new forms of entertainment media—video games and computer-based media—that held out educational promise. Creators of educational software incorporated the orientation to play and many of the visual elements of video games, but framed their products as being educational and enriching. Like the educational toys of the nineteenth century, educational software was and still is seen as a bulwark against video games and repetitive, hedonistic, and violent play. Software produced by companies such as TLC are played on computers rather than with game consoles, on the "good screens" in contrast to the "bad screens" of television (Seiter 1999, 247). Although mainstream commercial licenses are increasingly dominating children's software, companies such as TLC have tended to shy away from the commercialism implied in mass licensing, instead creating their own characters or linking up with Public Broadcasting System (PBS) content such as *Blue's Clues* and *Arthur.* They have worked to develop a genre of software that is fun and family friendly, but oriented toward concerted cultivation.

The ways in which early developers of children's software grappled with defining new media genres is a lesson in the domestication of technology—how existing social groups struggle to appropriate and position the meaning and value of new forms of media. These developers redefined video games into genres that were closer to educational and highbrow media, but they also appealed to childhood play in order to create a consumer product for home use. Even before the advent of children's software, the term *literacy* was attached to the use of computers, a cultural marking that differentiated it as a highbrow and "difficult" media form, structurally set off from "illiterate" and developmentally regressive forms of media such as television and video games. Gaining technical literacy through computer use is often associated with gaining traditional literacy through books. Children's software, packaged to be played on computers rather than on game consoles, incorporated these educational valences as well as content that was explicitly tied to traditional literacy and academics.

For early developers such as McCormick, the goal was to put technical tools in the hands of the disenfranchised and to alleviate the oppressiveness of dominant notions of education. Efforts toward technological empowerment can cut both ways, however, particularly when they are contingent on expensive consumer products such as computers and

software that are available only to the wealthy. Unless reform efforts address marketing and distribution issues, technical literacy simply becomes one more element of cultural and material capital that reproduces class differences. As Hervé Varenne and Ray McDermott (1998) have argued in their description of "successful failure," constructions of intelligence and learning inevitably invite constructions of failure and social distinction, often thwarting educators' and reformers' best intentions. On occasions when new educational technologies have entered the scene, reformers have hoped to transform some of the underlying social dynamics that have alienated some children from academic achievement. More often than not, however, these efforts have tended to favor already privileged children (Seiter 2005, 2007; Warschauer 2003). These existing conditions structuring parenting, cultural capital, and children's play set the stage for the emergence of the new media genre of edutainment.

From Education to Learning and Back Again

At the same time that McCormick was producing software titles such as *Gertrude's Puzzles, Rocky's Boots,* and *Reader Rabbit,* other educational researchers at the University of Minnesota were beginning to commercialize products such as *Oregon Trail* and *Number Munchers*. The Minnesota Educational Computing Corporation (MECC) was originally funded by the State of Minnesota in 1973 and became a public corporation in 1985, riding the successes of these software titles. Jan Davidson, a former teacher, started her company Davidson & Associates in 1983, developing titles such as *Math Blaster,* which in its various incarnations has been the best-selling piece of math software through the years. These software titles, all originally produced for the Apple II, became the pioneers in the new market for educational software for home use. Although growing out of school-based uses of computers, these new products were designed for the home user and the consumer market. They departed from the strictly curricular and instructional goals of the majority of school-based software by incorporating visual and narrative elements from popular culture. For example, *Math Blaster* took a standard drill-and-practice instructional mechanism but embedded it in a shooter-game idiom.

The late 1970s and the 1980s saw the founding of experimental efforts such as the 5thD, Apple Classrooms of Tomorrow, the Vivarium project at

the Open School in Los Angeles, and programs at the Bank Street College of Education, which piloted these new technologies in experimental educational settings. User communities and development communities were in close contact during the Apple II and early multimedia era of educational software. Bank Street developed its own software and operated an alternative school. Alan Kay, one of the developers of the Macintosh, participated in launching an educational technology program at the Open School in Los Angeles (Kay 1991). Seymour Papert, who developed the LOGO programming language at MIT, also ran educational programs in various schools with his technology (Papert 1980). Apple had a large education division that worked with the Apple Classrooms schools in developing curriculum and providing computers. And its research divisions were incubating the multimedia products that were to become the next wave of learning software. Although consumer products were being developed at this time, they were oriented to a small market of like-minded educators and parents. Because of Apple II's minimalist platform, development costs were low enough that extensive sales were not required to support development. Graphics were simple, but still managed to convey basic educational principles such as the logic of circuitry in *Rocky's Boots* (figure 2.1).

Most of the early innovators in educational software had backgrounds in formal education before turning to commercial efforts. These early

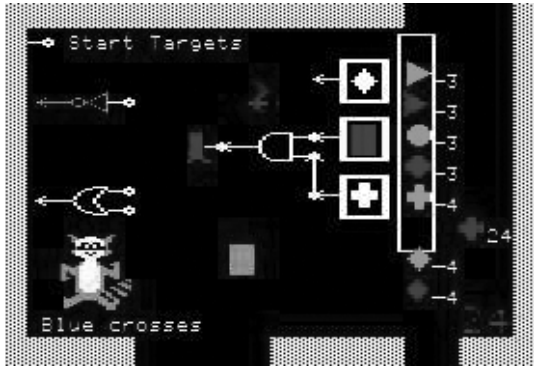

Figure 2.1
Screen shot from *Rocky's Boots*. Reproduced with permission from The Learning Company, Inc.

groundbreaking years in the industry were characterized by a sense of optimism and social mission. Ann Piestrup (McCormick), quoted in a Harvard Business School case study, described this sense of mission, tying together the heady promise of personal computing that was budding in the early 1980s with the educational mission of promoting active, engaged, and entertaining learning for children:

> Our core values here involve our desire to prepare children for the computer age. We want to do that with technical excellence in computing. We want to use the very best mass market micros to do that, to do it playfully, engage the kids, involve them, get them excited about learning, give them an active goal so it's not a sugar-coated pill where there's some dinky reward or something. It's really involving children in a way that they become totally excited about learning and forget that it's a task. Using TLC programs is like building something with an erector set where you get totally lost in the process. So our goal is to offer that kind of learning on the computer specifically for skills that are needed in the future. No one is quite doing that, building thinking skills, ability to analyze, to construct, to approach things from different angles, to think flexibly, to reason carefully, and to do that in a way that you're building something, not destroying it. A real explicit value is: we don't accept software that blows things up. We don't like blowing things up because they are aliens. We like finding out about aliens! There's a lot of belief about our work being good for people and that really drives us. It isn't just selling soap. (Unpublished case study, 1984)

Jan Davidson, in an interview with *Children's Software Review,* echoed a similar sense of mission that was primarily educational rather than business oriented: "When we started the company [Davidson & Associates], I remember first having to make a big decision—'Am I going to be a teacher or a business person?' That was very hard. . . . I always thought of myself as a teacher and felt that I was betraying my goals by leaving the profession" ("A Conversation" 1997, 25).

Titles such as *Math Blaster, Reader Rabbit,* and *Oregon Trail* are considered classics and are still on the market today. Many of the products created for the Apple II are still considered among the best children's software; they have been upgraded and updated with newer graphics and sounds, but they still retain the same content and play dynamics. Elizabeth Russell, who was at TLC when I interviewed her in 1998, described her view of these "evergreen" titles: "One of the evergreen products here is the *Oregon Trail*. It's one of the oldest pieces of educational software, and it's still one of the best. It's twenty-six or twenty-seven years old, and teachers will still

talk about this as the ideal of what a good piece of software is because kids apply math skills and thinking skills to real-world problems. And then they face the consequences. Those kinds of things make a program good."

In addition to producing classics such as *Oregon Trail,* this period of innovation saw the establishment of the basic formulas and genres of children's software that continue to be reproduced and repackaged today in a variety of titles. *Oregon Trail* originated the genre of educational travel adventure, where kids have to calculate their rations and supplies as they travel through a simulation of a historical journey. Similar titles such as *Amazon Trail* have followed in *Oregon Trail*'s footsteps. *Math Blaster* represents a more behaviorist but entertaining drill-and-practice model where kids are given rewards for completing math problems: bullets that they can use to play shooting games. It is a more literal hybridization of the educational (drill-and-practice) and entertainment (shooting-game) idioms.

Although products such as *Oregon Trail* continue to be popular, the learning-software industry currently sustains itself on adventure games. Games in the *Math Blaster, Jump Start,* and *Reader Rabbit* series embed academic problems and tasks within an adventure-game format. This strand of software development has increasingly come to focus on curricular content rather than on open-ended game play and defines what I call the academic genre. The most typical design relies on academic minigames embedded in a role-playing scenario. Along the way to completing some kind of mission, the player encounters various problems or puzzles related to academic subject matter. These puzzles may be math problems, science questions, or reading games, but in general their content is unrelated to the role-playing fantasy narrative. Although these games do not take a narrow drill-and-practice approach, the educational philosophy behind them might broadly be associated with a behaviorist approach, where children are given external rewards (action games, eye candy, points, etc.) for completion of academic tasks. These games also generally keep close track of scores that are usually tabulated in a passport or report card format.

Although the earliest versions of these kinds of games were not produced to correspond to specific subjects for particular grades (fourth-grade math, second-grade reading, and so on), the later versions were, and the packaging features checklists of particular topics. The genre standardized around

this form of game design and streamlined development around a successful formula. Companies committed to an underlying game engine into which different forms of academic content and minigames could be plugged, thus lowering the costs of development. Further, this approach meant that the relation between the more entertainment-oriented fantasy scenario and the academic minigames was incidental, so there didn't need to be intensive design or curricular work to integrate the meta-activity with the academic tasks. The educational and entertainment genres were thus hybridized, but in a way that kept them essentially separate domains of activity.

As the educational software industry matured through the 1990s, the groundbreaking approaches of educators such as McCormick and Davidson were converted into an industry model that is more formulaic than revolutionary. Both McCormick and Davidson left the companies they helped create, and both cited differences with executives who came to run these companies and who focused on short-term corporate earnings. The design of games was systematized into a formula and established a market niche called *edutainment,* a label that McCormick "abhors." Davidson explained that she and her husband "had differences of opinion with the new owners over matters of company goals and values." Prompted further, she explained: "Companies need to be purpose-oriented as well as profit-oriented. Many media companies that create movies, television programming and software are saying that you just can't run a business without compromising on standards, but I don't agree" ("A Conversation" 1997, 25). In my interview with McCormick, she was even more direct, having been forced out of TLC early in its history.

> I sold every share of stock. I wanted nothing to do with it. I sold all my stock for a dollar a share. When it went to sixty-five, I lost thirty million dollars making that decision. And I don't regret it. . . . They made it impossible to transform education alongside making huge profits by doing the same little programs over and over. Eventually that led to the industry crumbling because it didn't deliver on the promise of creating a resource that assures all children can learn what they need. TLC didn't make any transformative products after that, even though technology capabilities leaped forward.

Market demands converted McCormick's constructivist educational philosophy and egalitarian goals of reaching the technologically disenfranchised into a way of profitably delivering curricular content to middle-class

families. This transformation is an indicator of how media content is inseparable from the economic conditions in which it is produced and circulates. Even when products are designed with the hope of transforming socioeconomic relations, market responsiveness means that these products often succumb to the inertia of established cultural categories, market segments, and social distinctions.

In the 1980s, educators with high ideals founded new companies, and these companies distributed new technology and products to a small market of like-minded educators and computer aficionados. The 1990s saw the proliferation of PCs, the consolidation of software industries, and the emergence of a consumer market in family-oriented software. Instead of being sold at specialty computer and hobby shops, most children's software was being sold at superstores such as Cosco, Walmart, CompUSA, Toys 'R' Us, and Office Depot. Career CEOs pushed aside company founders, and by the end of the 1990s, the children's software industry had largely consolidated under two conglomerates, one headed by Mattel and the other by media industry giant Cendant. Only a year after Mattel bought TLC for $3.5 billion, it sold the company to a turnaround specialist, Gores Technology Group, for $27.3 million. The latter in turn sold TLC to Riverdeep for $60 million in 2002 (Pham 2002). In 1999, Leapfrog Enterprises introduced a new hit product, the LeapPad, a platform that integrated physical books with digital interactivity (Helft 2008). Although the LeapPad and subsequent LeapFrog products in some ways injected new life into the software market for young children, the innovations were largely in hardware rather than in educational content. The market for children's software was increasingly pushed into a narrow niche of basic literacy and early childhood education, with elementary-age kids quickly moving on to the more compelling offerings presented by video games and free content on the Internet. The market for PC-based educational software plummeted from a high of $498 million in 2000 to $152 million in 2004 (Richtel 2005).

The 1980s and 1990s saw the networks of technology, people, and capital for children's software extend far beyond the boundaries of the original small-scale market made up of progressive intellectuals and technologists. A larger market, mainstream retail, and more resource-intensive forms of technology ironically led to the demise of what many have felt to be quality products. The greater production expenses associated with cutting-

edge technology and graphics also means that there are higher economic barriers to innovation, lending more inertia to the conservative tendency. In contrast to the early experimental years, companies are now focused on upgrading graphics and sound and on developing content in established formulas rather than on developing new models for interaction or game design. The development process has shifted from a reformist educational impulse to a more market-driven emphasis. One developer described to me the climate in the early 2000s. Unlike for the early TLC products, she said, "the impetus for these games comes from marketing. This is retail marketing, not school marketing." She described how the results of market surveys and shopping-mall intercepts define the initial parameters for a new product, and then designers are given a budget, time frame, and schedule. "The budgets have been shrinking. The calendars have been growing shorter, so there's a lot of pressure to turn things out quickly." Explaining how these market pressures limit content development, she commented, "It's been quite honestly very frustrating to people in this company to have smaller budgets, less time. There has been a very great emphasis on reusing assets. Some of this makes good sense and some of it is jut cost cutting and corner cutting. " But, she continued, "I'm amazed at what our learning specialists and producers can do with shorter time and shorter budgets. They still turn out good products. But the market pressures are there—for example, for these grade-based products. Well, if you're going to do something for fifth grade, and you're going to cover the major content areas, you're not going to do any of them in any kind of depth."

The content of educational software has over the years reflected these shifts in marketing and distribution. Although the look and feel of learning software have benefited from higher-end graphics and more sophisticated multimedia PCs, the content has grown increasingly systematic, and marketing is based on brand recognition and achievement anxiety rather than on innovation in design and depth in content. This retrenchment ironically began to happen at a time when the technology was starting to achieve the potential to support much richer forms of content than those available in the early years, and video games were capitalizing on these new capabilities. Products with easily represented marketing "hooks"—such as a licensed character, an established brand, or the claim to transmit strategic cultural capital—became easier to disseminate in a consumer

market than products with more open-ended, complex, and multireferential goals. These shifts in orientation also related to the quickening climate of the "new economy" of the late 1990s, where notions of competitive success were intimately tied to efficient new technologies that amp up performance. The products left standing in the academic genre play on parental anxiety about whether their children are "competitive" not only in terms of acquiring the cultural capital of school subjects, but also in terms of having an achiever's identity and a competitive stance. This orientation feeds into a structure of participation with new media that focuses on academic success and competitiveness.

An early product, *Oregon Trail,* placed academic knowledge in a meaningful context of historical simulation in a way that departed from the standardized curriculum and testing demands of most schools. As children consider how best to manage rations and supplies and to proceed along a simulated journey with real-world referents, academically relevant content is mobilized as one relevant component of decision making. There is no hierarchical assessment of achievement based on realization of a single correct outcome. The products that became dominant in the 1990s, by contrast, put social distinction and assessment back in, which was key to their marketing success. In efforts to create the self-esteem and identity of an academic achiever in players, such products repetitively applaud children for getting the "right answer" to academic problems that are unrelated to the fantasy adventure scenario that is presumably the "fun" part of the activity. These successes are framed and tallied like grades in school. In marketing materials, parents are told that these products will ensure that their children will internalize the dispositions and cultural capital necessary for competitive academic success. Contrary to McCormick's efforts to focus on learning rather than on education, one sector of the industry has found that achievement, in the form of school success, is the most easily marketable package for academic learning software.

Consuming Achievement

Grade-based educational software appeals to parents' desires for wholesome, creative, and interactive play for their children that will give them a leg up on subjects covered in school. These products appeal to the

middle-class parenting approach that Lareau (2003) describes as "concerted cultivation," in which children's time outside of school is occupied with "productive" forms of play. Unlike entertainment-oriented games, which are marketed directly at children on television and in gaming magazines, educational software is marketed toward parents. Ads for children's software ran in *Family PC* until it became defunct in 2002, providing us with a window into how these products were marketed. One ad for Knowledge Adventure's *JumpStart* software series (figure 2.2), running in the December 2000 edition of *Family PC*, sets up an unambiguous relation between the products and academic achievement. Still wearing her backpack, a blond, school-age girl dressed neatly in white knee-high socks, Mary Janes, and a red skirt stands with her back to you (your child here) and clutches a school worksheet. The sanitized space of the large kitchen and the girl's appearance code the home as white, suburban, conservative, and middle class. The girl faces a refrigerator covered with assignments red inked with gushing teacher notes: stars, "Good Work!" and "Excellent!" The backpack, the school assignments, and the voice of assessment are represented in a central role in the intimate sphere of the home. A drawing of Mom, posted in the visually prominent area at the top left, hails the parent in charge of children-related purchases. She is a smiling mother with curly blond hair and rosy cheeks.

The ad copy describes the current concern with self-esteem and identity in promoting academic achievement. "When kids succeed, they feel confident. When they feel confident, they succeed. This is how *JumpStart* works. And why so many parents think it's the best learning software you can buy." In contrast to the other ads in this campaign, this one features a girl and has ad copy that specifically poses self-esteem issues. Together with the girl's assertive posture—hands on her hips, head tilted upwards—the ad's text implies that the software will address confidence issues that plague girls in academic achievement. The software claims to provide a jump start for children stalled in the academic rat race, mobilizing the metaphor of "education as a race" that dominates the culture of competition in U.S. schools (Varenne, Goldman, and McDermott 1998, 106–115). The ad campaign's tagline, "She's a JumpStart Kid, all right," is subtly crafted to imply a status distinction from other kids, the perpetually stalled failures who don't use this software. The phrase *all right* is a reassuring confirmation of parents' conviction that their child is inherently smart

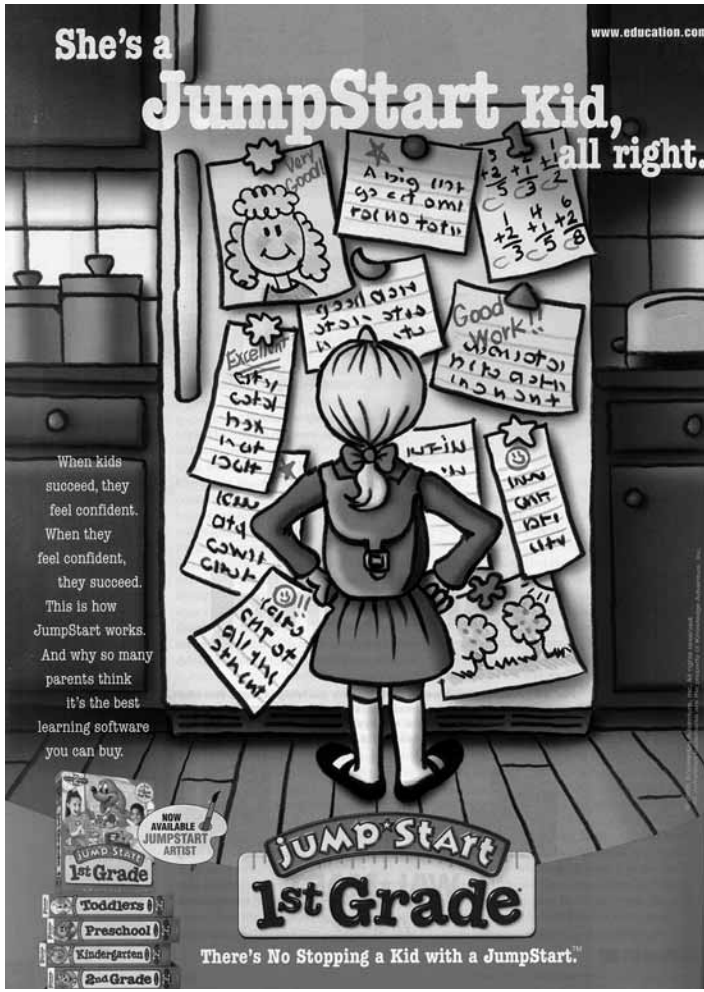

Figure 2.2

Advertisement for *JumpStart 1st Grade*. Reproduced with permission from Knowledge Adventure, Inc. JumpStart is a trademark or registered trademark of Knowledge Adventure, Inc.

and deserving of this status. Your child, too, may be deserving of greater recognition of success than she is currently receiving.

The ads for toddler and preschool software titles target increasingly younger children and promise to fill a child's "leisure" time with the competitive logic of academics. Another ad in this campaign features a smiling, sleeping boy in a bed covered in books with titles such as *Ships, Vikings,* and *The Stars*. The books are even tucked into his bedsheets, replacing the stuffed animal so iconic of childhood attachments and imaginings. The boy is presumably integrating academic content into his dreams. In yet another ad, a *JumpStart* kid, again with a backpack on and lunchbox in hand, is waking up a bleary-eyed father at the crack of dawn. These kids have internalized the disciplines of schooling and are thus reluctant to take their backpacks off and eager to get them back on. They are represented as identifying deeply not only with academic content, but with the aggressive, forward, and upwardly competitive stance of academic success.

Corporations market software to parents as a vehicle for academic success, and parents in turn market academics to their kids as an entertainment activity. Parents can mitigate their sense of being pushy in their achievement orientation with the reassurance that their kids are having fun. Academic content gets integrated into children's self-identities and pleasures. The ads for the *Math Blaster* series feature children in moments of ecstatic play, swimming or playing superheroes, with thought balloons describing the mathematical significance of their play (figure 2.3). A tiny caped crusader speculates, "If I fly 90 miles an hour and the earth is 24,902 miles around, can I still get back home for breakfast?" "Must be the Math Blaster®," suggests the ad copy below the picture. "Software that gets your kids into math. And math into them." As Loyd Rieber, Nancy Luke, and Jan Smith argue in their review of learning-game design philosophies, this approach looks at "fun" as an extrinsic motivator of learning, rather than working to support learning that is intrinsically motivated. The focus on entertainment as a motivator tends to "designate the role of games as a form of educational 'sugar-coating'—making the hard work of mathematics or language arts easier to 'swallow' " (1998, 5). This approach toward extrinsic motivation relies on a behaviorist model of learning (Engenfeldt-Nielsen 2006).

It is not sufficient for children to perform well academically; learning needs to be fun, and children need to *love* it. "I Love Reading!" "I Love

Figure 2.3
Advertisement for *Math Blaster.* Reproduced with permission from Knowledge Adventure, Inc. Math Blaster is a trademark or registered trademark of Knowledge Adventure, Inc.

Spelling!" trumpet the titles of a learning series from Interactive Learning, the ads for them adorned with the faces of wide-eyed, smiling children. Learning for pleasure must infuse kids out-of-school lives. Like children's literature and educational toys, educational software holds forth the promise of learning that is tied to school success, yet is freed from the dusty, boring school atmosphere—learning that promises joy, delight, engagement, and identification. A token African American child graces the cover of one of these titles, surrounded by a sea of white faces. The white, middle-class marking of these ads and the hefty prices of the products and computers indicate that the market is for families that are seeking to maintain middle-class status or are aspiring to upper-class status, not for the racially diverse and disenfranchised populations that were the target of McCormick's efforts. The progressive philosophy of "learning through play" has been transformed into a more conservative agenda of "achievement through play," an important shift in these products' orientation.

If parents pick up a software box at Cosco, Toys 'R' Us or Comp USA, they can learn a bit more about the software contents. Most software boxes feature a front flap that can be opened, revealing content domains and providing screen shots of different games screens. For example, the *Jump Start 2nd Grade* box cover features the product's key elements: the title, the green frog character that guides the adventure, the company name, the target age, the tagline "There's No Stopping a Kid with a JumpStart!" and, crucially, a seal attesting that *JumpStart* is "#1," with more than three million copies sold (figure 2.4). Successful products such as *JumpStart* push their brand as a central marketing vehicle. Parents are enlisted as believers in the "JumpStart family" of products that range from titles for toddlers to titles for children in the upper elementary years. At the top of the box, the company, Knowledge Adventure, is associated with the tagline "Discover. Learn. Excel," tracing a three-point progression from the child-centered ideal of discovery and exploration to learning and identification and finally to competitive success. As a visual genre, these boxes draw from the representational styles of children's picture books and the parent-friendly animation of the nonviolent PBS variety: bright colors and cute, wide-eyed, anthropomorphized animal characters with big smiles and big heads. Although not visually central, certain elements in the cover serve as code for "school": the ruler notches in the title bar, numbers, a plus

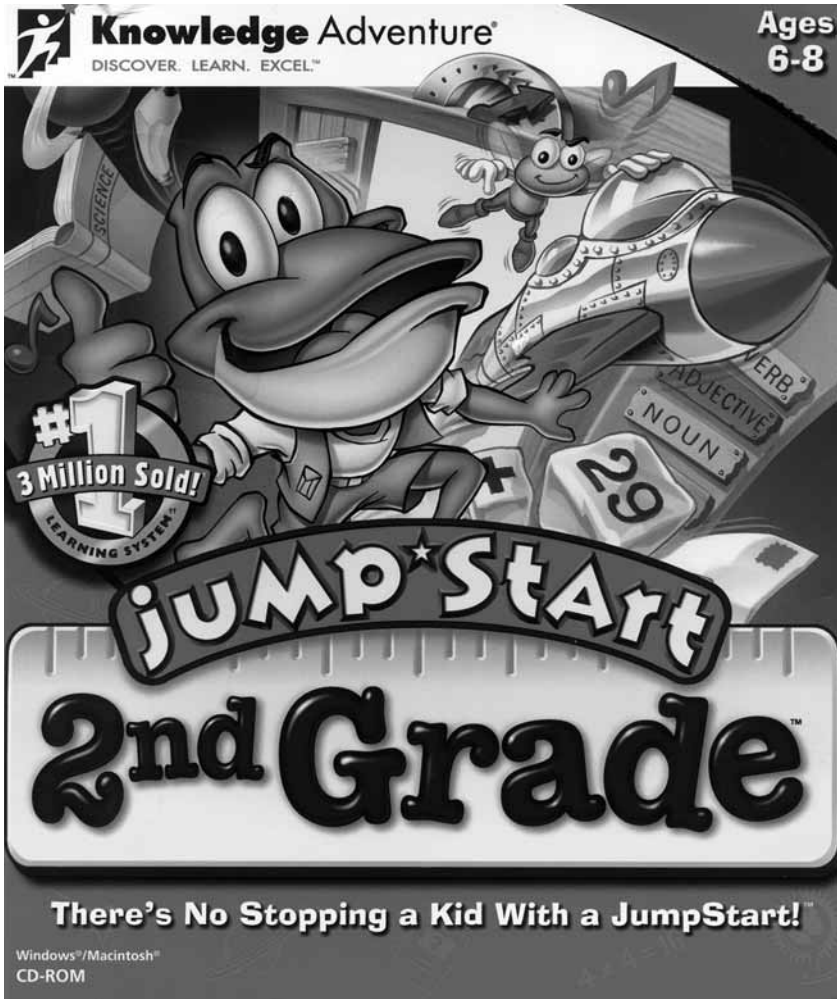

Figure 2.4
Box cover for *JumpStart 2nd Grade*. Reproduced with permission from Knowledge Adventure, Inc. Jump Start is a trademark or registered trademark of Knowledge Adventure, Inc.

sign, and the words *noun* and *verb* as part of the background scene. The box translates curricular content into the aesthetically pleasing vernacular of children's edutainment, much as we find alphabets and numbers adorning infants' bedding and toys.

Opening the front flap, a parent sees the claim emblazoned across the top: "A Full Year of 2nd Grade in an Exciting Adventure!" Below that are screen shots of each activity, describing the academic content involved (figure 2.5). For example, "Ice Cavern Math" teaches multiplication tables, and "Save Our Universe" teaches about the solar system. The back of the box gives a list of what "kids learn" and a checklist of "what you get": "Over 80 Skills Taught," including "Simple Multiplication" and "Social Sciences"—in other words, "a complete 2nd Grade curriculum." This "grade-based system that grows with your child" packages learning as the ability to progress along an atomized set of tasks as defined by the basic components of a school curriculum. A small girl is pictured sitting on the progressive steps of this "learning system." There is also a photo of this same smiling blond child, accompanied by parental testimony regarding how "Amanda" is making so much progress in her schooling. The software's technical features outlined on the back of the box center on parental control and guidance in the context of a wide-ranging set of skills and activities (figure 2.6). The game has "adjustable difficulty levels" and offers a "parent's progress report." In contrast to other forms of technical engagement that stress the empowerment of the child, this product highlights the function of technology to structure and monitor behavior.

The defining characteristic of the academic genre is that titles are age graded, relying on an "ages and stages" approach to development, oriented toward maturation along adult-defined measures. Cute, innocent characters, primary colors, and content tied to school grades marks this product as one that kids older than ten will not identify with. Marketing is directed at parents who want their children to succeed at school. Efforts are made to include girls in the framing and marketing, but the racial and class markings emerge as white and middle class, muted somewhat by the use of animal characters. Distribution is through mainstream mass retailing that touts the product's "number one" popularity. These characteristics define the academic genre of software at the level of design, marketing, and distribution. A specific case study of the content of one game typifying this genre shows

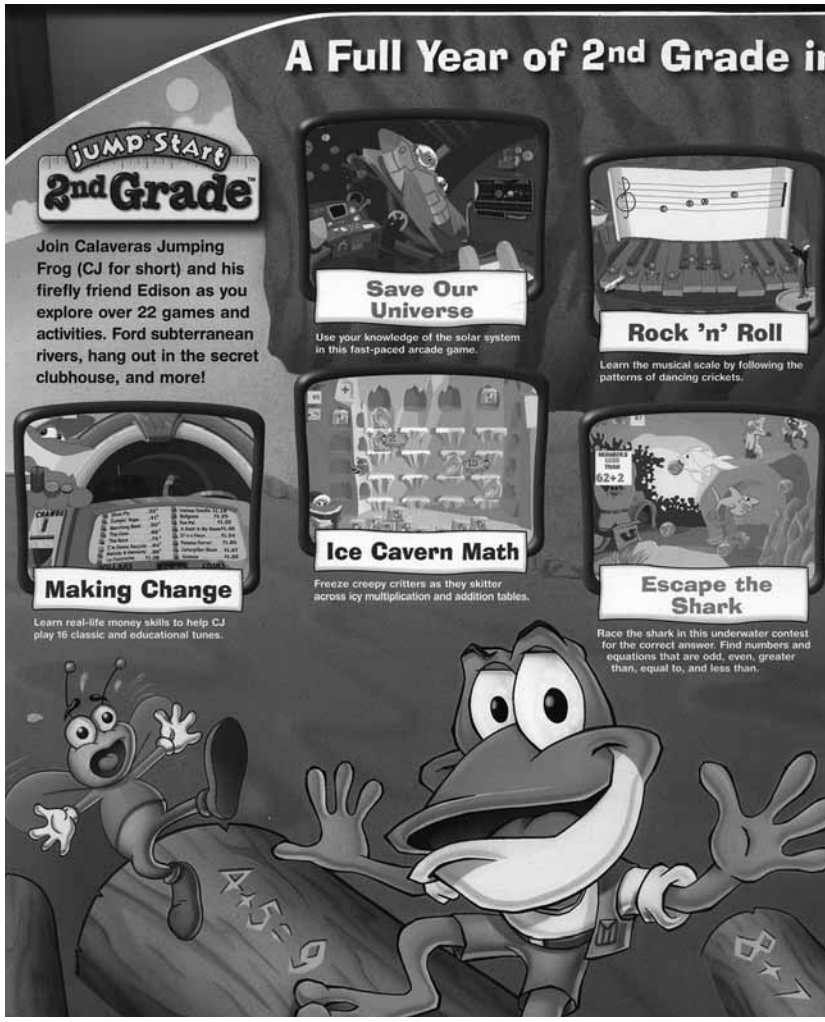

Figure 2.5

Inside the box of *JumpStart 2nd Grade*. Reproduced with permission from Knowledge Adventure, Inc. Jump Start is a trademark or registered trademark of Knowledge Adventure, Inc.

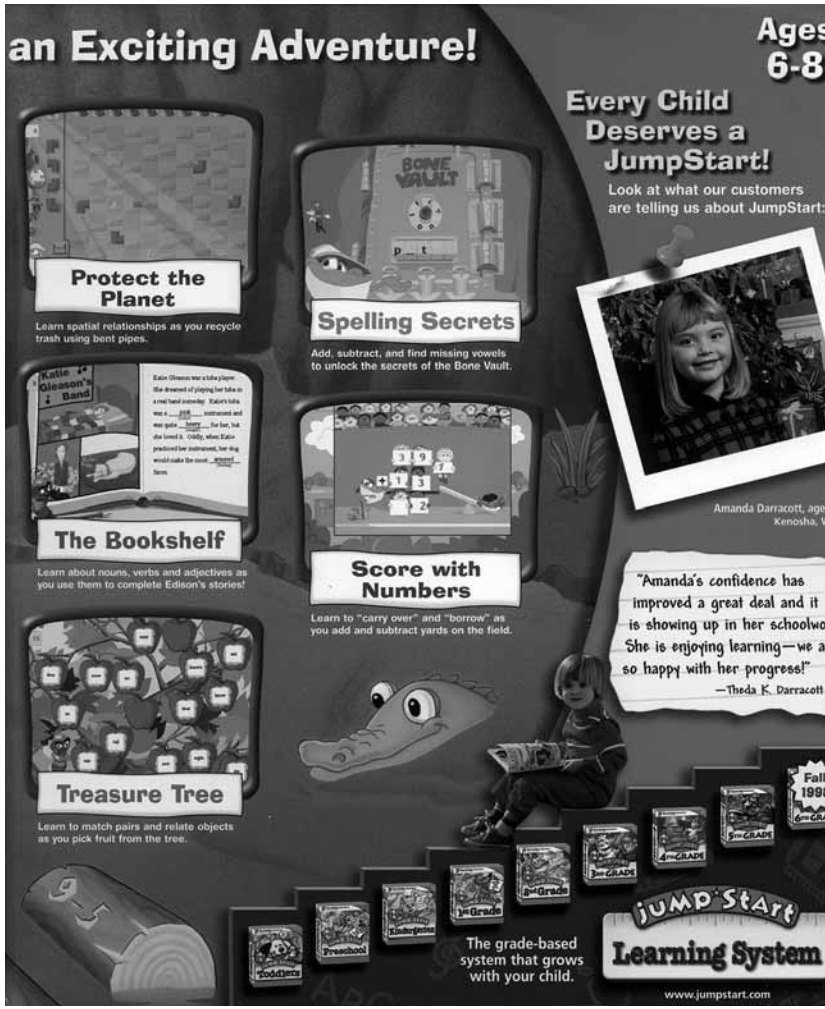

Figure 2.5
(Continued)

Figure 2.6

Back cover of box for *JumpStart 2nd Grade*. Reproduced with permission from Knowledge Adventure, Inc. Jump Start is a trademark or registered trademark of Knowledge Adventure, Inc.