

## A Review of Validation Studies of the Edmark Reading Program.

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### Introduction:

The Edmark Reading Program was initially developed over a 15-year period between 1960 and 1975. With funding from the National Institute of Mental Health (NIMH), a series of studies were conducted at the Rainier School in Buckley, Wa., by researchers from the University of Washington led by Sidney Bijou, Ph.D. to apply the principals of behavioral psychology to the education of children with mild and moderate levels of mental retardation. Dr. Bijou had just completed a sabbatical year of study with B.F. Skinner at Harvard University, and sought to apply what he had learned there to the educational process for children previously thought unable to acquire reading skills (Skinner, 1961; Bijou, 1965; Birnbrauer, Bijou, Wolf, and Kidder, 1965). A series of instructional programs were developed and tested over the next five years (Greene, 1966; Birnbrauer et. al 1964). The basic principals involved were errorless discrimination (Sidman and Cresson, 1973), response shaping (Birnbrauer, Wolf, Kidder, and Tague, 1965), selective reinforcement (Birnbrauer and Lawler, 1964), and the principals of direct instruction (Becker, 1992). The program was built around the assumption that these students would learn best with very low levels of error, thus requiring very small steps to teach each word. The further assumption was that generalization of newly learned behavior (words) would not occur unless specifically taught within the program. These concepts were considered somewhat revolutionary at the time, but are now generally accepted throughout special education (Edgar and Sulzbacher, 1992).

### Initial Validation by the researchers who developed the Edmark Reading Program:

It took several years for the program to evolve to its present form. The early published research by the developers of the program **separately validated** the effectiveness of component parts of what was then called the Rainier Reading Program, and it was not until 1968 that the success of the program as a whole was considered sufficiently researched for the authors to begin thinking of publishing it as educational curriculum. The early validation studies of the program are summarized in Bijou, Birnbrauer, Kidder, and Tague (1966), Greene, 1966; and Birnbrauer, Kidder and Tague (1965). There were 52 students involved in these studies and their success was compared to 30 cohorts at the same institution.

### Replication of the initial success at another site:

A program is not considered successfully validated until its effects have been replicated by others. The first such replication was conducted by Lent (1968) at the University of Kansas.

### Validation by comparison with other curricula by independent researchers:

Level 1 of the Edmark Reading Program was published in 1971. The first and most persuasive of the research studies conducted by independent investigators of its effectiveness was that of Vandever, Maggart, and Nasser (1967). In that study, **15 classrooms (total N = 107)** for children with mental retardation were assigned randomly to 3 initial reading teaching approaches. Using objective measures, these researchers concluded that the Edmark Reading Program produced significantly greater academic achievement than the other two commercially-available programs. Subsequently, Walsh and Lamberts (1979) compared Edmark to a third popular reading program, and again found Edmark to be superior in producing academic gains in a study with 30 moderately mentally retarded students. A subsequent study by Vandever and Stubbs (1977) continued Vandever's earlier research by demonstrating longer term retention of skills learned with the Edmark Program after one year, and demonstrated that the students who successfully completed the program had also learned to generalize their reading ability to previously untaught words.

### **Studies demonstrating Edmark's effectiveness when administered by peers tutors and paraprofessionals:**

VanEtten and VanEtten (1976) and Barrier (1981) further validated the effectiveness of the program in other settings with similar students with mental retardation. Barrier's study was the first to demonstrate the effectiveness of the program when used with peer tutors. Barrier's study was conducted at the Pennsylvania State University. Another independent study by B.L. Andersen (1979) also demonstrated the superiority of the Edmark Reading Program to other approaches when taught by paraprofessional reading tutors.

In summary, all of these independent research studies found the Edmark Reading Program to be the most effective tool for use with mildly and moderately retarded students. These studies were conducted at various institutions across the nation by researchers who were independent of the Edmark Corporation.

### **Long term followup studies:**

Two researchers associated with Edmark (Sulzbacher and Kidder, 1975; 1979) studied the effectiveness of the reading program by conducting a long-term (10 years) follow-up of the students who had participated in the initial research with the Edmark Reading Program. It was demonstrated that these students went on to maintain and build upon the academic skills they learned from the program. At the time of that followup study, 68.5% of the students had left the institution and 13% were living independently and fully employed.

### **Research with typically developing preschoolers:**

In a study funded by the U.S. Department of Education, Narodick, et al. (1991), demonstrated the applicability of components of the Edmark Reading Program presented by computer with the Touchwindow interface. This was an initial pilot demonstration with 60 preschoolers, demonstrating that reliable responding to the prereading components of Edmark could be obtained and that children as young as 3 could be productively engaged. It was found that the interest of very few 2 year olds tested could be maintained. Edmark is currently conducting validation studies with older preschoolers (see below).

An additional study with 40 preschoolers looked at other parameters of the Edmark reading program, such as its advantage for students with cerebral palsy or other motor handicaps (Battenberg, 1989) because of the program's compatibility with single switch technology like Edmark's touch window.

### **Prospective Validation Studies:**

At present, the Edmark Corporation is working with researchers at the University of Washington and elsewhere to further validate the usefulness of the Edmark approach with other populations, such as preschoolers and with students who have autism or related pervasive developmental disorders. Anecdotal reports received over the years by Edmark indicate its effectiveness with certain other categories of learning disabilities, particularly when other programs had failed.

The impetus for our current emphasis on further validation studies of the Edmark Reading approach is the recent release (July, 2001) of a revised version of the reading programs for use on PC and Mac computer platforms. The fundamental instructional content of the program has remained unaltered, but current computer capabilities have enabled enhancements in making the lessons somewhat more attractive with computer graphics. Today, we are in the process of establishing that the current computer versions of the program are equally, or more, effective with a broader range of students. This builds on over 30 years of successful

application of this program. Its success in the field is validated by the year-to-year increase in sales of the program, an index of its acceptance by the special education community. Nevertheless, Edmark remains committed to carefully controlled scientific studies in its ongoing research program to demonstrate its usefulness. The studies referenced in this report are all data based scientific research; there is also an extensive literature of published reviews and teacher reports supporting the effectiveness of the Edmark Programs.