

## I. Introduction

The School Breakfast Program (SBP) administered by the United States Department of Agriculture (USDA) provides breakfasts in school to more than 7 million students each school day. The SBP began as a pilot program in 1966 and was permanently authorized by Congress in 1975. It has grown steadily over time, and the number of participating schools has nearly doubled during the past 12 years. The SBP has always served mainly low-income children, with about 84 percent of current program participants receiving free or reduced-price meals. As the program has expanded, however, it has become available to increasingly large numbers of higher income children. Between 1997–1998 and 1998–1999, higher income children—that is, those not certified for free or reduced-price meals—accounted for two-thirds of the *growth* in SBP participation (Food Research and Action Center, 1999).

Many believe that eating breakfast helps children do better in school. In fact, research shows that eating breakfast improves performance on short-run cognitive tests (see Chapter II; and Briefel et al., 1999). Previous research also has found that SBP participation increases the intake of selected vitamins and minerals, and that it improves school attendance (Devaney and Fraker, 1989; and Murphy et al., 1998a and 1998b). These findings suggest that eating a school breakfast may have a positive influence on student learning; however, the results of studies that have directly estimated this relationship have been inconclusive.

Understanding the true nature of the relationship between SBP participation and cognitive performance is an issue of concern to policymakers, as shown in a Senate hearing on Child Nutrition Authorization (U.S. Senate, 1998). An understanding of this relationship would be useful for school administrators and policymakers for two reasons. First, although school participation in the program has been growing, with about 70 percent of schools that serve lunches currently serving breakfasts, many schools still do not offer the SBP.

A better understanding of the effects of the program would help school administrators in nonparticipating schools decide whether to offer breakfasts. This information would also help policymakers decide whether and how to promote school participation in the program. Second, policymakers currently are debating the merits of a universal-free school breakfast program (USBP). Although a separate evaluation of the USBP is underway, additional information about the effects of the regular SBP on student learning might help policymakers determine the appropriate direction for USBP policy.

This report is a compilation of the work completed for the Economic Research Service (ERS), USDA, by Mathematica Policy Research, Inc. (MPR) for the project Design an Evaluation of the Impact of the School Breakfast Program on Learning. The purpose of this report is to review the relevant literature on the connection between SBP participation and learning, describe four alternative designs for studying this relationship, and outline one of the four designs in detail. The design outlined in detail represents the design we believe to be the most feasible and the most likely to yield useful information about the relationship between SBP participation and learning, describe four alternative designs for studying this relationship, and outline one of the four designs in detail. The design outlined in detail represents

the design we believe to be the most feasible and the one best able to measure the true relationship between school breakfast participation and learning.

The remainder of the report is organized as follows. Chapter II reviews the existing literature on the relationship between nutrition and learning. It is a revised and updated version of the literature review memorandum submitted to ERS in March 2000. Chapter III describes and assesses the four alternative designs; it is based on the Alternative Designs Report submitted in December 2000. Finally, Chapter IV outlines the design selected as the best of the four alternatives; it is a revised version of the New Study Design Report submitted in January 2001. one best able to measure the true relationship between school breakfast participation and learning.