

IMPROVING THE COVERAGE OF PRIVATE ELEMENTARY-SECONDARY SCHOOLS

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1. GENERAL

In September of 1986, members of the National Center for Education Statistics (NCES) along with Weststat and the Census Bureau met to discuss the formulation of a new survey to gather information, nationally, about public and private elementary and secondary schools in the United States. As a result the Schools and Staffing Survey was created. The Schools and Staffing Survey is a network of surveys that evolved from one survey. They include:

- Schools and Staffing Survey (SASS)
- Teacher Followup Survey (TFS)
- Private School Survey (PSS)

This paper attempts to address one component in updating the universe for the private school frame, the "List Frame".

Definition: Private schools in SASS are institutions which provide educational services for any of grades 1-12, have one or more teachers to give instruction, are not administered by a public agency and are not operated in a private home.

2. HISTORY

2.1 Private School Universe Creation

The Private School Universe was created in 1987 to select the private school sample for the Schools and Staffing Survey. The base for the private school universe is the Quality Education Data (QED) file. It is a commercial list of private schools compiled from handbooks, annual directories, and other materials which list private schools.

NCES purchased the file of private schools from the QED and provided it to the Census Bureau. In an attempt to improve coverage of private schools, the Census Bureau conducted two coverage improvement operations, (1) the "List Frame" consisting of contacting 17 national private school associations and obtaining from each a list of all schools affiliated with them; and (2) the "Area Search Frame" consisting of

selecting 75 Primary Sampling Units (PSUs) (consisting of 94 counties).

2.2 Update of the Private School Universe

List Frame

Definition: Affiliation Lists are lists of private schools on the rolls of a specific private school association. These schools are affiliated with that association.

Between 1987 and 1992 the Census Bureau conducted three List Frame operations to update the private school universe. The first "List Frame" operation began in January 1987. Its purpose was to provide further coverage for the private school frame for SASS. NCES provided the Census Bureau with 22 private school associations to contact and obtain lists of schools from them. The Census Bureau then contacted these private school associations and asked for lists of their schools. The Census Bureau sent an explanation letter for the survey to the associations along with the request for their lists. We received 17 of the 22 lists requested.

Once the lists were received, we clerically matched them to the private school universe (QED). The match was done on school name, address and telephone number. The 1987 PSS operation resulted in 1,437 adds to the private school universe.

2.3 1989-90 Private School Survey

The Private School Survey (PSS) is a CENSUS of private elementary and secondary schools in the country. The purpose of the survey is to:

- build a universe frame of private schools that is of sufficient accuracy and completeness to serve as a sampling frame for other NCES private school surveys
- to generate bi-annual data on the total number of private schools, teachers and students.

The survey is conducted bi-annually. There were approximately 25,000 private schools contacted in the first PSS. Schools must be privately administered and contain at least a grade between 1 and 12 in the school to be classified as a private school in PSS or

SASS (see definition of private school on page 1). All schools are sent a questionnaire obtaining information about number of teachers, students, religious orientation, and association.

The first PSS was conducted in 1989-90. To prepare for the survey, we conducted a second coverage improvement operation on the private school universe. This consisted of a List Frame operation and an Area Search Frame operation, as was done for the 1988 SASS.

1989 List Frame Operation

The second List Frame operation for updating the private school universe began in March of 1989. Twenty-three affiliations were contacted to determine how many schools were associated with them. Due to budget constraints not all of the 23 affiliation lists were requested. We only requested affiliation lists from 12 of the associations. Eight of the 12 affiliations selected had sent lists in the first List Frame in 1987. Four affiliations sent lists for the first time. QED sent an updated list.

Our decision on which lists to request was based on the size of the lists. We chose association lists that were not too large because matching and unduplication are expensive. The largest list that we obtained contained about 2000 schools. Affiliations such as "Accelerated Christian Education" who reported 5000 schools were not requested to send a list.

The list frame was conducted similar to the one in 1987 with some minor changes. For the 8 affiliations that provided lists in 1987, we asked for updates (births and deaths) to those lists. If that was not possible, we took the complete list. We clerically matched the schools on the lists to the current private school universe. Non-matched schools to the universe were keyed to a separate file. After some editing was conducted, the file was merged with the universe.

2.4 1991-92 Private School Survey

The second PSS was conducted starting in 1991-1992. To prepare for it we updated the private school universe again. In the spring of 1991, we conducted a third List Frame operation.

1991 List Frame

The 1991 List Frame operation was more extensive than the first two. In 1991 we contacted 26 private school associations, the 50 states and the

District of Columbia, QED and a private vender "Jostens" to obtain lists of private schools.

This time the budget was not a problem so we could do a matching and unduplicating operation on all 26 association lists and the lists from the 50 states and the District of Columbia as well as QED and Jostens.

Some state lists were on electronic files while others were in the form of books. Jostens sent a printout of their schools.

3. GOALS/OVERVIEW OF THE 1991 LIST FRAME UPDATING ANALYSIS

We will determine the characteristics of the list frame by religious orientation (Catholic, other Religious, Nonsectarian), school level (elementary, secondary, combined) and total student enrollment. We will be able to describe a typical list frame add.

Also, we will determine the characteristics of the list frame adds by cross-tabulating school characteristics (i.e., religious orientation by school level) and total student enrollment.

Finally, we will determine the effect of the list frame adds on private school characteristics as well as for cross-tabulations of school characteristics. The statistic of interest in this analysis is the percentage of the list frame universe estimate of each characteristic that is represented by the list frame adds (i.e., the numerator will be the list frame adds estimate of the characteristic and the denominator will be the list frame universe (original universe plus adds) estimate of the characteristic). We will show how the universe benefits from the list frame adds in general and by school characteristic.

4. ANALYSIS OF LIST SOURCES FOR ADDITIONS TO THE PRIVATE UNIVERSE

There are four main sources of lists that we contact when it is time to update the private school universe. These sources are the states (i.e. each of the fifty states plus the District of Columbia), the associations, Josten Education Data, and QED. We want to identify which sources of lists provided us with the most up-to-date and complete information about the types of school births we need. Our goal will be accomplished by answering the following questions.

- Which source provided the largest quantity of eligible or in-scope additions to the private universe?
- Which source provided the eligible or in-scope additions with the highest interview rate?

- Which source provided the largest quantity of ineligible or out-of-scope additions?
- Which source had the highest out-of-scope rates?

NOTE: If a school was found on more than one list then it was counted in the table for each list. In other words, if a school was found on a State list and on the Jostens list, that school was counted twice.

4.1 Highlights

- Evidence indicates that the lists from the states and the associations provide the highest quality and the largest quantity of additions to the universe for PSS than either the Quality Education Data or Josten Education Data lists.
- The fifty states and D.C. provided 8 out of 10 total additions to the private universe during the 1991 update. Among the individual state lists 7 out of 10 state additions came from California, Pennsylvania, New York, Florida, Illinois, New Jersey, Michigan, North Carolina, Indiana, Virginia, Georgia, and Wisconsin. These states were the heaviest providers of eligible schools.
- Twenty out of the forty-four association lists requested provided additions to the private universe. Their contribution to the private universe is on a smaller scale than the state lists. They have the highest out-of-scope rate but requesting the lists is good for public relations.
- The Quality Education Data and Josten Education Data lists make a minimal contribution to the private universe because most of their schools show up on either the state or association lists. Despite their small numbers, they have good in-scope school rates and good interview rates.

4.2 State Lists

Looking at the effect of state lists at the national level of in-scope, out-of-scope, and interview rates, roughly 84.2% of the 4,915 in-scope cases came from the State lists. The percentage of the 2,637 out-of-scope cases from this source is similar to the in-scope percentage given above. The top three out-of-scope reasons for State lists (excluding the "Other" category) is "School Closed" at 28% followed by "Duplicate" at 16.7% and "Private Home" at 10.7%. The interview rates for the in-scope additions coming from the various state lists was 95.7%.

At the state level, the contributions made to the update differed by state. When we rank the states from largest to smallest contributors of additions, we

find the following results. The top sixteen states listed are heavy contributors providing an above average number of schools (at least 121 schools) to the total state additions. After the lists were clerically matched to the current private universe, the top sixteen states account for 73% of the state additions. Approximately 2/3 or more of each of these 16 state's additions were eligible or in-scope with two exceptions: Arizona at 31% and Maryland at 52%. Of the schools in-scope, each state had at least a 90% interview rate. Thus, in general these heavy contributing states provided quality additions as well as a large quantity of additions.

For the remaining 35 states, their contribution was lighter to the overall total of state additions. Alaska, Maine, and North Dakota still had more than 50% of their lists remaining after unduplication with the universe, demonstrating the undercoverage we had in these states. Unfortunately, we found after interviewing that Alaska's and North Dakota's in-scope rates (15.2% and 19% respectively) were the lowest of all 50 states and District of Columbia. For the majority of light contributor states the in-scope rates and the interview rates were comparable to the heavier contributors mentioned above.

4.3 Association Lists

At the national level the percentage of the 4,915 in-scope cases coming from associations was 11.4%. The percentage breakdown of the 2,637 out-of-scope cases is roughly 15%. But 4 out of 10 schools contributed by the Association lists turned out to be out-of-scope after interviewing. Among the out-of-scope reasons for associations lists, "school closed" at 28.5% was number one (excluding other) but "Duplicate" has become a close second at 27.7% and "Private Home" at 4.8% as number three. The interview rates for the in-scope additions among the association lists was 95.7% (tied with state lists).

We ordered the 20 association lists that provided any additions from biggest to smallest provider.

The first eight association lists are the heavy contributors; providing an above average number of school (at least 48 schools) to the total association additions. These associations were:

- National Catholic Education
- National Association of Episcopal Schools
- General Conference of Seventh-Day Adventists
- National Independent Private School Association
- American Montessori Association
- National Center for Neighborhood Enterprise

- National Society for Hebrew Day Schools
- American Association for Christian Schools

They alone account for 76% of the association additions. The lists from these associations provided good quality additions as well as a large quantity. The impact of the list additions on the universe total for the majority of the associations was between 13-35 percent with one association at 92% (the National Center for Neighborhood Enterprises). The biggest contributor, National Catholic Education Association, has the smallest percentage of list additions on the universe at 2%.

The remaining twelve association lists were fairly light in the contribution to the total association additions as well as to their associations' total on the universe. New list additions as a percentage of the universe ranged from 4-16 percent with one exception at 100% the General Council Agudath Israel of America (probably the first time this list has been provided to us). This range is lower than the majority of heavier contributor's percentages (13-35). Yet all are larger than the impact percentage for the heaviest contributor; the National Catholic Education Association. For these smaller providers, the importance of these lists to these associations outweighs the fact that they provided only a small quantity of additions.

The in-scope rates (50%-100%) and interview rates (80%-100%) were similar for the heavy and light contributors with two exceptions. The National Association of Episcopal Schools (in-scope rate of 12.5%) and the National Center for Neighborhood Enterprise (in-scope rate of 28%), are among the top eight contributors with the smallest in-scope rates. However, at least 30% of the schools on the universe for these associations came from the list updating operation.

Requesting these lists may do more than just update the universe. List requests from associations may promote good public relations with the association heads and they in turn may encourage participation among their member schools.

4.4 Josten and Quality Education Data Lists

The Quality Education Data (QED) and the Josten lists are relatively small in term of the impact on the overall number of new list frame additions. The original QED list provided 49 school births. Only 20 were left after clerical unduplication with the existing universe. The Josten list provided 431 school births. Three hundred and six births were left after clerical unduplication with the existing universe.

The percentage breakdown of the 4,915 in-scope cases by these sources are QED at 0.3% and Josten's at 4%. The percentage breakdown of the 2,637 out-of-scope cases for these source is similar to the in-scope breakdown given above. The out-of-scope reasons most prevalent (excluding the "Other" category) are "school closed" and "duplicate". The interview rates for the in-scope additions among the two sources are QED list at 100% and Josten's list at 91.9%.

These lists come from professional list builders who supposedly use many of the resources we use. Since our resources are similar, overlap or duplication between them and the state/association lists becomes common. Refer to the next section for details.

4.5 List Overlap

Of the 20 schools obtained from QED, 14 were also on one of the state and/or association lists. Of the 6 schools found only on the QED list, 5 were out-of-scope leaving only one original QED school eligible for PSS.

Of the 306 schools obtained from Josten's, 72 were also on one of the state and/or association lists. Of the 234 schools found only on the Jostens list, 103 were out-of-scope.

The association list's overlap with the states' lists is about 30% of the total additions from the association lists. Why is it not higher? States have different criteria for licensing their private schools. Some states may exempt schools associated with churches to be licensed. Some states may list only a central administrative office, where the association lists would offer each site location associated with the administrative office. Both types of lists are needed to ensure coverage.

5. ANALYSIS OF THE CHARACTERISTICS OF ADDS AND THEIR IMPACT

5.1 Highlights

- Other Religious adds make up the largest percentage of adds for all variables (schools, students, teachers, graduates, and projected graduates) across all religious orientation categories.
- Combined school adds make up the largest percentage of adds for all variables (schools, students, teachers, graduates, and projected graduates) across all school levels.
- Updating had a big impact on Nonsectarian and Other Religious schools, but very little impact on

Catholic schools.

- Updating had the biggest impact on elementary schools although the impact on combined and secondary schools was significant as well.
- Updating had the biggest impact on the smallest schools. The impact decreased as the size of the school increased.

5.2 Goals

- Describe a typical list frame add.
- Show how the universe benefits from the list frame adds in general and by school characteristics.

5.3 Characteristics of Adds

Small schools contribute more significantly to the list frame adds than the larger ones. The overall percent contributions for schools for each of the size categories for the list frame adds schools are as follows: 0-75 students: 67%, 76-150 students: 18%, 151-225 students: 6%, 226 + students: 8%.

In general these percents hold true (in magnitude and direction) for each religious orientation and school level. The exception is the Catholic schools -- where the larger schools contribute more significantly (0-75 students: 20%, 76-150 students: 19%, 151-225 students: 19%, 226 + students: 40%).

The overall pattern for students, teachers, graduates, and projected graduates in the various size categories is similar to that of Catholic schools. It shows that the larger schools contribute a greater number of adds.

Graduates are defined as students who have already received a regular high school diploma. Projected graduates are defined as students who are expected to receive a regular high school diploma.

In general, the same size pattern as seen for Catholic schools holds for students, teachers, graduates, and projected graduates in the different size categories across religious orientation and school level. The exceptions are the following: students in Nonsectarian and elementary schools, and teachers in Other Religious, Nonsectarian, elementary, and secondary schools. Here the pattern is similar of the overall pattern for schools in the different size categories.

Other Religious adds contributed 2,688 schools (62%) of all school adds in the 1991 PSS list frame updating operation. This was followed by 1,430 Nonsectarian school adds (33%) and then 215 Catholic school adds (5%).

The pattern for schools across religious orientation is similar for the other four variables

(students, teachers, graduates, and projected graduates).

Combined school adds contributed 2,926 schools (67%) of all school adds in the 1991 PSS list frame updating operation. This was followed by 1,107 elementary school adds (25%) and then 323 secondary school adds (7%).

These patterns are similar for the other four variables (students, teachers, graduates (when valid), and projected graduates (when valid)).

In general, the patterns mentioned earlier for the different religious orientation and school level subgroups across all five variables (schools, students, teachers, graduates, and projected graduates) are the same when these variables are cross-tabbed. The exception is when the Catholic subgroup is cross-tabbed with school level. For this subgroup, Catholic secondary schools contribute more significantly than Catholic elementary schools.

Also, when religious orientation and school level are crosstabbed, the general trend by size of school (i.e., the smaller list frame schools contribute more significantly than the larger ones) is not as strong as before.

5.4 Impact of Adds on Private School Characteristics

The list frame adds represented 18% of schools, 8% of students, 11% of teachers, and 6% of both graduates and projected graduates. These percentages varied considerably for religious orientation and showed that this updating had a substantial impact on improving coverage of Nonsectarian and Other Religious schools and very little impact for Catholic schools. Nonsectarian led the way with 31% for schools, followed closely by Other Religious at 26%, and Catholic's considerably smaller 3%. These percentages were reduced somewhat for each religious orientation when you look at students, teachers, graduates and projected graduates. However, the general relationship seen for schools still held up in that the percentages for Nonsectarian and Other Religious were very close and significantly outdistanced the very small Catholic percentages. These percentages ranged from 11% to 18% for Other Religious, 10% to 17% for Nonsectarian and 2% for Catholic.

The previously-described relationship among religious orientation for schools, students, teachers, graduates and projected graduates generally held up within each school level as well with just a few exceptions. One exception was for combined students where the Nonsectarian percentage (37%) was

substantially larger than the 14% for Other Religious students. The other exceptions were for combined graduates and projected graduates where the 6% and 7% for Catholic was much closer to the corresponding percentages for the other religious orientation categories (13% for Other Religious and 9%-10% for Nonsectarian).

The school level percentages showed less variation and indicated that the list frame updating had a substantial impact on improving the coverage for all three school levels. Elementary schools lead the way with 26% for schools, followed by 17% for combined schools and 14% for secondary schools. As was seen for religious orientation, these percentages were reduced somewhat when looking at the other statistics (i.e., students, teachers, graduates and projected graduates) but this relationship seen for schools held up for all the other statistics. These percentages ranged from 17% to 19% for elementary, 8% to 11% for combined, and 3% to 6% for secondary.

The previously-described relationships among school levels for schools, students, teachers, graduates and projected graduates were generally seen within each religious orientation as well with just a few notable exceptions. One exception was for Nonsectarian students where the combined percentage (37%) was larger than the 28% for elementary and 11% for secondary. The other exceptions were for graduates and projected graduates for both Other Religious and Nonsectarian where the percentages for secondary and combined were much closer than those over all religion orientation categories.

The enrollment percentages showed considerable variation and reflected a very strong inverse relationship between the size of the school and the impact of this updating on improving the coverage. The smallest schools (0-75 students) led the way at 38% for schools indicating the updating had a very substantial effect on the coverage of these small schools. The second smallest schools (76-150 students) had the next largest percentage (16%), followed by 7% for 151-225 student schools and 5% for the largest schools (226 + students).

Unlike what had been seen for religious orientation and school level, the enrollment percentages for students, teachers, graduates, and projected graduates were similar to those for schools. This very high percentage for the smallest schools and the very strong inverse relationship between enrollment and the impact percentages also existed within each of the religious orientation and school level categories except the percentages for the smallest Catholic school were not very high. This enrollment relationship was also true within each of the school

level categories for Nonsectarian and Other Religious schools. However, the inverse relationship was not always as strong and the percentages were not always as high for the Catholic school level categories.

VI. CONCLUSION

Evidence indicates that the state and association lists contributed more significantly to the quality and quantity of the universe for PSS than either the QED or Jostens list.

We should continue to collect lists of private schools from all the states in the future. We should give high priority to the lists from California, Pennsylvania, New York, Florida, Illinois, New Jersey, Michigan, North Carolina, Indiana, Virginia, Georgia, and Wisconsin who are heavy contributors of quality list adds.

We should also continue to collect lists of private schools from the associations in the future. The association lists do contribute to the universe on a smaller scale than the state lists. Requesting these lists may do more than just update the universe. List requests from associations may promote good public relations with the association heads and they in turn may encourage participation among their member schools.