

Translation of U.S. Educational Level Survey Questions into Spanish: Is Adaptation the Solution? ^{1,2}

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Abstract

The difficulty of translating country-specific program names for use in surveys has been well documented. Questions about educational attainment offer a good illustration of this difficulty, particularly amongst Spanish-speaking immigrants in the United States, who come from a variety of countries where education systems are different in both name and structure. This paper presents results from the cognitive testing of Spanish education level questions in the U.S. Census Bureau's American Community Survey. Two iterative rounds of cognitive testing were conducted with 46 Spanish-speaking respondents from 11 different countries. Respondents had differing interpretations of many of the education categories. For example, Mexican-origin respondents interpreted "*escuela secundaria*," or "high school," to correspond to nine years of schooling, while in the U.S. completing high school corresponds to 12 years of schooling. Similarly, the translation for "bachelor's degree" or "*bachiller universitario*," was interpreted by some respondents as the equivalent of either junior high or high school. These misinterpretations could result in upward biases in reports of educational levels. The paper discusses various approaches tested to deal with this type of response error and the extent to which they were successful.

Key Words: survey translation, cognitive interviewing, education level questions

1. Introduction

Various studies have shown the difficulty of translating concepts related to country-specific programs for use in surveys (Carrasco, 2003; Goerman et al., 2007; Schoua-Glusberg et al., 2008, Fernández, et al., 2009). Examples of concepts that are difficult to translate range from respondent participation in the U.S. foster care program to health insurance coverage. Educational level is a topic that has posed translation challenges to many agencies in the U.S. This is a concept that is very difficult to translate, particularly in the case of groups such as Spanish-speaking immigrants in the U.S. These respondents come from a variety of different countries, many of which have educational systems that are different not only from the U.S. system but from each other as well.

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In this paper we present results of two iterative rounds of cognitive testing on a series of American Community Survey (ACS) educational level questions with 46 Spanish-speaking respondents from 11 different countries. The educational level categories were initially translated in as direct a manner as possible. We found that Spanish speakers interpreted several of the categories differently from what was intended. Not only were some terms unfamiliar to respondents but in addition, respondents from different countries used some of the same terms to refer to different levels of education, using the educational system in their countries of origin as a reference. In some cases these mismatches in terminology resulted in upward biases in reports of educational levels.

This paper provides an overview of previous research on the translation of U.S.-specific programs. We then bring our focus to the translation of the American Community Survey (ACS) education questions into Spanish. Through this research, we developed and tested some strategies for improving the comparability of the education level terms across languages. The new strategies include grouping several different terms that would be meaningful to different respondents into one category, and using the original English wording in parenthesis as a part of the Spanish category. These approaches produced mixed results but none eliminated the problems completely. We also discuss the implications of having non-comparable measures of educational level across languages in a national survey. The paper concludes with a discussion of issues that remained unresolved, as well as recommendations for further research.

2. Review of the Literature on Survey Translation

A great deal of research across disciplines strives to compare and evaluate key indicators of socioeconomic status across different populations. When measuring across different cultural and linguistic groups, translation quality and methods are of key importance. Much of the translation literature in the field of survey methodology focuses on recommended steps in the development of a survey instrument and its translation(s) (Hinsdale et al., 2001; Harkness, 2003; Pan, 2009; Dean et al., 2004; Potaka et al., 2004).

Many researchers emphasize the importance of instrument adaptation, which includes tailoring instruments to fit culture-specific concepts in target populations, such as use of preferred terms, use of unambiguous concepts and use of culturally relevant examples. (Dean et al., 2004; Hunt et al., 2004; Harkness, 2003). There may be some terms or concepts that a survey asks about that do not exist in some respondents' countries of origin, and this possibility should be recognized and addressed during instrument development (Goerman, 2010; Schoua-Glusberg et al., 2008). Additional challenges arise when the adaptation of instruments must include several subpopulations that speak different dialects of the same language (Cortés-Martícorena et al., 2009; Domínguez et al., 2006).

Cognitive testing is a pretesting method often used to study the response process. Careful analysis can identify questioning strategies that will yield more accurate answers; thus, reducing measurement error (Biemer et al., 1991). The method can also be used to test whether translated instruments measure the intended concepts. The technique involves face-to-face interviewing in which respondents are probed about their responses, interpretations and mental processes associated with the survey questions presented to them (Willis, 2005).

In measuring educational attainment across different populations in the U.S., survey instrument translation must include not only translation to other languages and cultures, but also the recognition that there are large differences in the way educational systems are structured in immigrants' countries of origin. Schoua-Glusberg et al.'s (2008) study of educational systems in Latin America found large variations in the number of educational categories used across countries to measure the highest level of education, from six categories in Costa Rica to 14 in Chile and Puerto Rico. The challenges of finding a common classification that will allow cross-country comparisons multiply when the U.S. education system is added to the comparisons. Adaptation of educational level categories to work across educational systems would be ideal. However, due to a lack of resources and mechanisms to examine the validity of major adaptations, this is often not possible in the context of large U.S. survey research organizations.

3. Background on the American Community Survey Cognitive Testing Project

The ACS is a monthly U.S. Census Bureau survey that samples about 3.5 million addresses each year and contains questions about households, such as the number of occupants and type of dwellings (house, apartment, etc.), and questions about each person living in the household, such as age, sex, race, education, and employment.

There are two slightly different versions of the Spanish-language questionnaire, one for use in the continental U.S. (the "stateside" version) and one for use in Puerto Rico. This situation makes it possible to tailor the Puerto Rican version to contain terms that are more familiar to Puerto Rican Spanish speakers. The ACS is a multi-mode survey, in which respondents are first contacted with an invitation to participate via the internet. They are then sent a follow-up paper questionnaire. Non-response to these modes is handled first through a telephone interviewing CATI operation and then by a face-to-face, CAPI operation. Even after the recent implementation of a Spanish internet option to the survey in 2013, response in Spanish is still overwhelmingly concentrated in the CATI and CAPI modes.

Over the past several years, the Census Bureau underwent a process of testing segments of the ACS Spanish CATI and CAPI instruments to verify that the same data was being collected in both the English and Spanish versions.

4. Methodology and Respondent Characteristics

Cognitive testing of the Spanish ACS instrument was carried out using semi-structured cognitive interviews, which focused on interpretation and comprehension of key words and phrases. With regard to the education level questions, respondents were first asked the series of questions without interruption. Interviewers then probed about the meaning of particular terms and questions. Two iterative rounds of testing were conducted (see Fernández et al., 2009, for a more detailed description of the methodology and results).

Twenty-three Spanish-speaking respondents and five English speakers were interviewed in each of the two rounds of testing. Testing of the questions with a small number of English-speakers was included to help assess whether the issues that arose in Spanish were due to translation problems or conceptual difficulties with the original English wording (see Goerman and Caspar, 2010). This method is often used when parallel development is not possible and the original English language version of the survey instrument is not open for revision at the time of translation development.

A more ideal method would have been the parallel development of the English and Spanish versions and more complete concurrent testing of the English with the Spanish version, including testing with non-native English speakers educated outside of the United States. However the current project focused only on testing and making revisions to the Spanish instrument. Because of time and resource constraints, the sponsor was only seeking ways to make minor revisions to the Spanish version that would not require large changes to the English in order to keep the two instruments parallel.

Respondents were recruited in two sites (Puerto Rico and North Carolina). This research is based on a non-random group of participants. Spanish-speaking respondents were recruited to represent the diversity of the U.S. Hispanic immigrant population. Respondents were people with limited or no English proficiency who had diverse educational attainment and who were from a variety of Spanish-speaking countries. About a quarter of the respondents (24 percent) had completed less than high school; 28 percent had a high school diploma; and the rest had at least some college or technical courses (48 percent).

Respondents were from Argentina, Colombia, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Peru, Puerto Rico, and Venezuela. About 44 percent of the respondents were ages 30 and younger; slightly over half (52 percent) were female; and most of the stateside respondents had lived in the U.S. for fewer than 10 years (77 percent). Consistent with the socioeconomic characteristics of U.S. immigrants from Latin America (Grieco et al., 2012), a higher proportion of respondents with low levels of education came from Mexico and Central America than from other regions. The Puerto Rican respondents were all born and residing in Puerto Rico.

5. Results

The ACS education level series begins with a question about recent school enrollment. The second question asks for details about the type of school (public, private or home school) and the level of education of those who were enrolled in school at any time in the last three months. Next, all respondents are asked, “What is the highest degree or level of school you have COMPLETED?” For respondents who answer that their completed education is between grade 11 and “some college no degree” (that is, grade 11, grade 12, high school, a GED³ or some college), there are several follow-up questions designed to obtain more detailed information. The purpose of these questions is to separate those who obtained a regular high school diploma from those who obtained a GED and those with neither, as well as to identify those with some college credits, and in particular people with one or more years of college credits but no degree. Finally, respondents who answer that they have completed a four-year college degree or higher education are asked about their main fields of study.

In this paper we focus on cognitive testing findings among Spanish speakers. Detailed results for English speakers, who generally had no difficulty with these questions, are reported elsewhere (Fernandez et al., 2009). We should note that all English speakers in our study were U.S. born and educated and all were native English speakers. It is likely

³ GED refers to General Educational Development tests. GED tests are a group of exams about different topic areas. They were designed by the American Council on Education to allow people to demonstrate that they have skills and knowledge equivalent to having completed a high school course of study.

that we would have observed more difficulties if we had included non-native English speakers and/or English speakers educated outside of the U.S.

The first round of Spanish cognitive interviews in this study revealed three types of response burden or error. First, respondents had difficulty understanding some questions due to their length and complexity. Secondly, some of the terms were confusing to Spanish speakers because they referred to concepts that do not exist in Latin American countries, such as “home schooling” or the “GED” (see footnote 3). Finally, Spanish speakers often found it difficult to select a response option from among the education levels listed because of the terms being used.

Overall, in the first round of testing we observed that complex and ambiguous Spanish question wording was not only imposing unnecessary cognitive burden on respondents but also potentially impacting data quality, as we observed some respondents choosing responses that did not correspond to the number of years of schooling they had actually completed. Below we discuss three types of observed response burden or error in greater detail.

5.1 Problem Type 1: Overly Complex Question Structure

One type of problem we identified through our testing was that some of the questions were overly long and complex. This issue was magnified in Spanish, since the translation was even longer than the original English. The first question in the education series is a good example of this. The original question wording in both languages was as follows:

Las siguientes preguntas son sobre instrucción y educación. En cualquier momento durante los últimos 3 meses, ¿asistió usted a una escuela o universidad? Incluya sólo guardería infantil o preescolar, kindergarten, escuela elemental, enseñanza en el hogar y escuela que conduce a un diploma de escuela secundaria o un título universitario.

The next questions are about schooling and education. At any time in the last 3 months, have you attended school or college? Include only nursery or preschool, kindergarten, elementary school, home school, and schooling that leads to a high school diploma or a college degree.

After hearing the question, over half of the Spanish-speakers asked for clarification before offering a ‘yes’ or ‘no’ answer, and two answered ‘yes’ incorrectly. The respondents’ requests for clarification suggested that they had difficulty keeping track of the multiple conditions in the question. Respondents asked things like: “... *in the last 3 months?*,” “*For me or a child?*,” and “*To study or to visit?*”

Compounding the issue of question length, there were also terms in the question that proved confusing. The term “asistió” (attended) was one such example. This term can mean both “attended” and “went to,” such as “asistió a una junta” (“attended” or “went to” a meeting). For some respondents, the term took on the less formal meaning of “went to,” particularly when it was combined in the same sentence with the examples “guardería infantil o preescolar, kindergarten” (nursery or preschool, kindergarten). Some respondents thought that the question was asking about “going to” any of these places for any purpose, including dropping off their child.

Other respondents heard the list of examples and thought it was meant to be exhaustive because of its length. This was evident in debriefing when some respondents pointed out that there were options “missing,” such as computer courses and English classes.

One obvious recommendation that came from the testing was to shorten the question or divide it into multiple questions. However, due to the fact that the English-language instrument was not open for edits and the survey sponsor did not want the question length and structure to diverge across languages, we were only able to test rather minor terminology modifications in the second round, such as changing the term “asistió” (attended) to “estudió” (studied).

All of the minor terminology changes we tested were successful in improving question administration and we found that fewer respondents asked for clarification when they heard the revised question. We continued to see issues related to the long length of the question, however. In the second round of testing we found that respondents were having difficulty remembering the reference period. In fact, seven out of 18 Spanish-speaking respondents (39 percent) did not notice or remember the phrase ‘durante los últimos 3 meses’ (in the last 3 months). Moreover, two of the four respondents who answered ‘yes’ to this question had actually not been studying in the last three months.

Ultimately we found that the issue with the question being overly long and complex could not be resolved in the translated version alone. This issue would require joint research and testing of the original English and translated versions together.

5.2 Problem Type 2: Conceptual Mismatch Across Cultures

Another issue identified with the education questions was that respondents were not familiar with some types of U.S. education or diplomas, such as “home schooling,” and the “GED or alternative credential.” These are programs that do not exist in many Latin American countries. Therefore, respondents interpreted the terms within their own cultural contexts.

Example 1: Home Schooling, “Enseñanza en el hogar”

All 23 respondents in the first round of cognitive testing were probed about their interpretation of the question below, even if they said they were not attending school in the last three months:

¿Fue esa una escuela o universidad pública, una escuela o universidad privada o era enseñanza en el hogar?

Was that a public school or college, a private school or college, or home school?

Although Puerto Rican respondents did not immediately recognize the phrase “enseñanza en el hogar,” we found that many of them were familiar with the English phrase “home school,” perhaps because of their familiarity with the mainland U.S. educational system.⁴ In fact, the educational system in Puerto Rico is structured in a similar way to the U.S. mainland, with three levels: primary or elementary school (grades 1-6); “intermediate” or

⁴ Puerto Rico is an unincorporated territory of the United States. As such Puerto Rican people are U.S. citizens by birth and many U.S. programs, English language terms and concepts are common and/or familiar to people living in Puerto Rico.

junior high school (grades 7-9); high school (grades 10-12); and college or higher education. In addition, home schooling is an educational option in Puerto Rico.

Other Spanish speakers, however, were not familiar with the concept of “home school” and they interpreted the common terms in the phrase “enseñanza en el hogar” as less formal concepts such as online classes, bible school, and lessons taught by parents related to culture, table manners, and moral principles.

To address this issue, we proposed different modifications to the two Spanish versions of the ACS. In the Puerto Rican version, we recommended the addition of the English term (home school) at the end of the question. We initially recommended an adaptation to resolve the stateside issue: the use of an altogether different example in the Spanish instrument. Project guidelines did not allow for this type of deviation, however, so our next recommendation was to include a short definition of home school. We based the definition on the wording used by the National Household Education Surveys Program (NHES, 2007). In English, the definition reads: “Home schooling is when parents decide to educate their children at home instead of sending them to school.”⁵ The English “home school” was added in parenthesis to the Puerto Rican version of the question and both the Puerto Rican and stateside versions were tested including the new definition. However, both versions maintained the original home school translation “enseñanza en el hogar.”

Round 2 testing revealed that many Puerto Rican respondents (six of the eight people) did recognize the term “home school” in English. Among the other Spanish speakers, only one person (a Guatemalan) understood the unchanged term “enseñanza en el hogar” as intended. The other respondents, with diverse educational levels and national origins, heard both the Spanish term *and* the definition in Spanish, and still interpreted “enseñanza en el hogar” to mean learning on one’s own such as from videos, TV or internet, with the help of friends, or by distance learning. Some respondents also thought that it could mean receiving tutoring at home.

In sum, adding the term in English in parenthesis and a short definition for home school appeared to work well for Puerto Rican respondents, many of whom were already familiar with the concept. However, the inclusion of just a definition did not work for other Spanish speakers.

The fact that home schooling does not exist in many Latin American countries makes it challenging to explain the concept in a simple sentence. Of course, we have no way of knowing whether or what proportion of Spanish speakers would answer in the negative when they hear a question involving an unfamiliar term. In this case, however, the terms used in the translation sounded familiar to respondents and they had a particular meaning in their cultural context. The risk in maintaining this wording is that respondents may confuse ‘enseñanza en el hogar’ (home school) with online learning or private tutoring and this would cause responses error in the form of an inaccurate ‘yes’ response, with negative effects on data quality.

⁵ Due to the fact that the English language instrument was not open for edits, thereby restricting major restructuring to the Spanish instrument, the definition was under consideration only as possible optional help text to be added to the interviewer instructions in the instrument.

In the absence of the requirement to maintain consistency with the English version, our recommendation would have been to drop and/or replace the home schooling example on the stateside Spanish version of the question. Further research into whether an adaptation could collect parallel data across languages is warranted.

Example 2: GED or alternative credential, “GED o credencial alternativa”

The concept of a diploma equivalent to high school but awarded to adults through another program, the GED (General Educational Development, see footnote 3) was not familiar to some Spanish-speaking respondents in our study. This term appears in the context of a follow-up question for respondents who answer that they have completed ‘Grado 11’ (Grade 11), ‘Grado 12, sin diploma’ (Grade 12, no diploma) or ‘Diploma de escuela secundaria’ (Regular high school diploma). The intent of the question is to separate those who have received a regular high school diploma from those who have obtained an alternative/equivalent diploma or no diploma. The question reads:

¿Recibió usted un diploma de escuela secundaria, un GED o credencial alternativa?

Did you receive a high school diploma, a GED or alternative credential?

In many Latin American countries, there is no program equivalent to the GED. The initial translation does not provide a translation or explanation of the concept; it simply lists the English language acronym, “GED.” In the first round of interviews, we found that most Spanish speakers had some understanding that a GED is an examination for adults that serves as the equivalent to a high school diploma. We found that most people thought of the GED as some type of adult education but they were not clear about what it entailed.

Respondents described a GED as “a high school diploma or university degree,” a way for immigrants to revalidate a high school diploma in the U.S. (which may be true though it is not an official definition of the program), or similar to high school but “with less intense classes.” One respondent confused the GED with the GRE (Graduate Record Examination), an exam used for admission to graduate schools.

Only one respondent (a college-educated Colombian) knew that it was an exam taken to obtain a diploma equivalent to high school. In addition, in the first round of testing we observed that respondents did not understand the term “credencial alternativa” (alternative credential).⁶ One problem is that the word “credencial” does not translate literally into “credencial” in Spanish since this latter term is often used to mean an identification or membership card, e.g., “credencial escolar” (school identification card).

In the second round of testing, we tested the simplified wording: “un examen equivalente (por ejemplo GED)” (an equivalent exam (for example GED)). Findings from the second round of testing showed that this wording substantially improved respondents’ understanding of the question by expressing both the idea that there are multiple types of

⁶ The term ‘alternative credentials’ is used because the U.S. education system provides other alternatives in addition to the GED, that result in an educational credential equivalent to a high school diploma. For example, the HSED (High School Equivalent Diploma) is awarded to students who, in addition to completing a GED, meet further requirements of taking courses in health, civic literacy and employability skills. There are a number of other programs as well.

alternative “exams” and by conveying the idea that the GED is an exam that is equivalent to high school.

5.3 Problem Type 3: Ambiguous Terms Used in Translation

The first and primary question in the education level series is the same for Puerto Rican and other Spanish speakers. The question stem reads:

¿Cuál es el título o nivel escolar más alto que usted ha COMPLETADO?

What is the highest degree or level of school you have COMPLETED?

In administering this question in the field, CAPI interviewers use a show card containing a long list of response options and CATI interviewers read from the same list of options with the instruction to stop when the respondent interrupts with an answer. In the cognitive testing, roughly half of respondents were interviewed simulating the CAPI mode and saw the options listed on a show card. The other half were interviewed simulating the CATI mode and they heard the interviewer read the list of options. A number of terms were found to be ambiguous and in all of these cases some respondents over-reported their educational levels, an issue with strong implications for data quality.

Example 1: Regular high school diploma (Diploma de escuela secundaria)

In the first round of testing both Puerto Rican respondents and those from Nicaragua, Peru and Venezuela understood the response option “diploma de escuela secundaria” to mean high school, or 12 years of schooling, as intended. This was because those countries all had similarly structured education systems to the U.S. However, despite the fact that they understood the original wording, Puerto Rican respondents expressed a preference for the phrase “diploma de escuela *superior*” for high school.

Mexicans and Colombians, on the other hand, understood “diploma de escuela secundaria” as a diploma earned after nine years of schooling, not twelve. In their countries, “preparatoria” or “bachillerato” are the terms used for 12 years of schooling.

Based on these observations, we tested two different Spanish versions in the second round of interviews. The original wording “diploma de escuela secundaria” (regular high school diploma), was modified for Puerto Rico to read “diploma de escuela superior (high school).” We also included the English term (high school) in parenthesis to take advantage of the familiarity of Puerto Ricans with the U.S. mainland educational system. In the second round of testing, we confirmed that Puerto Ricans had no difficulty recognizing the phrase: “diploma de escuela superior (high school),” to mean the diploma obtained after 12 years of schooling.

Choosing revised terms for the stateside Spanish instrument was more difficult since the target population is made up of Spanish speakers from many different countries. Our recommendation was to change the translation for “Regular high school diploma” to “Grado 12, CON DIPLOMA (high school)” (Grade 12, WITH DIPLOMA (high school)) since the response option comes right after another reading “Grado 12, sin diploma” (Grade 12, no diploma). This was deemed too great a deviation from the English to be made based on cognitive testing alone.

Instead, we decided to test the strategy of grouping terms that would be meaningful to different national origin respondents together in the same category. We tested the phrase “diploma de escuela secundaria o preparatoria (high school).” The hope was that respondents might recognize at least one of these terms as the equivalent of high school and report their education level accurately. In addition, we added the English-language term in parenthesis since the respondents are living in the U.S. and they or their children may have completed schooling there, thereby familiarizing them with the English terms.

Results showed that changes to the stateside Spanish version were not as successful as the Puerto Rican changes. Mexican respondents reported being confused by the use of the terms “escuela secundaria o preparatoria (high school)” grouped together because both terms are used in their educational system and they mean different levels of education. In fact, because they now interpreted the response option to be asking if they had either 9 or 12 years of schooling, respondents from Mexico who had less than a high school education still mistakenly chose this option instead of choosing “Grado 9” (Grade 9). The reason for this is that in Mexico the term “secundaria” is commonly used to refer to 9 years of schooling. Moreover, other respondents from Mexico specifically suggested that because “secundaria” and “preparatoria” are very different levels of schooling, they should not be grouped in the same category.

The term “high school” in parenthesis appeared to be of limited help since some respondents did not know how many years it takes in the U.S. to complete high school. Part of the explanation for this may be that the test respondents, although living in the U.S., were still culturally oriented to their countries of origin. Our recruitment criteria for this project included that participants speak very little English (i.e., recent immigrants or those relatively isolated from mainstream U.S. interactions) since ultimately this group makes up a large portion of the target population for the Spanish version of the ACS. Based on findings from the second round of testing, we recommended that the changes we had tested not be made to the stateside Spanish version. There was a need for further research into whether an adaption that would enable the collection of parallel data across languages could be identified and validated.

Example 2: Bachelor’s degree, (Título de bachiller universitario)

Another translation that was problematic for many non-Puerto Rican Spanish-speakers was the one meant to capture a four-year college education or bachelor’s degree. In the first round of testing we confirmed that Puerto Rican respondents understood “Título de bachillerato universitario” as a 4-year college degree as intended. However, this was not the case for respondents from many Latin American countries, particularly Mexico.

For example, a Mexican respondent with a high school education incorrectly selected “Título de bachiller universitario” (bachelor’s degree) from the list of options because he thought it meant “bachillerato” (a way of referring to high school in Mexico). Two other respondents with a bachelor’s degree selected “Título asociado” (Associate’s degree) and “Título profesional más allá de un título de bachiller” (professional degree beyond a bachelor’s degree) because they also understood the term “bachiller” to refer to high school in their countries (Mexico and Colombia). Another college-educated Mexican respondent said that she was able to finally select the right answer after reading the list of

options *three times* when she noticed “BA” and “BS” as examples under the Bachelor’s degree category.⁷ This respondent had some familiarity with the U.S. educational system.

Moreover, college-educated Spanish speakers from Nicaragua and Mexico thought that “bachiller universitario,” referred to a “technician with a specialty,” and that the degree was “equivalent to high school.” The terms seemed contradictory to them since it included “bachiller” (high school) and “universitario” (university level) together in the same category. In all, using the term “bachiller” for bachelor’s degree had the effect of pushing some of our respondents to overstate their educational level since those with a high school degree tended to choose the option without realizing that it refers to a college degree; and those with a bachelor’s degree tended to select options pertaining to higher levels of education in their efforts to convey that they had studied beyond high school.

We tested new terms for a bachelor’s degree for the stateside Spanish version in the second round of interviews. Through the round 1 testing and reviews of other research we identified a number of new wording options that we expected to work better than “Título de bachiller universitario.” One example was “Título de licenciatura.” Other variations recognizable in Latin American countries are “Título de licenciatura universitaria” (bachelor’s degree), “Título de carrera universitaria” (akin to university-level studies), or a combination of both, “Carrera universitaria completa, Licenciatura” (University-level degree, bachelor’s) (as recommended by Schoua-Glusberg et al., 2008). Because “licenciatura” is specific to a four or five-year university degree, we selected it over “carrera universitaria” which has a broader connotation. However, while the new term was accepted for testing, the term ‘bachillerato’ was also kept in this category because of the survey sponsors’ concerns that some respondents may look for a term that looks similar to the English “bachelor’s degree.”

The main observation from the second round of interviews was that college-educated Spanish speakers from some countries (Colombia, Nicaragua and Mexico) had difficulty understanding the new terms for bachelor’s degree, “Título de licenciatura o bachillerato universitario (por ejemplo: BA, BS)” (Bachelor’s degree (for example: BA, BS)) as intended. These respondents said that they would interpret the phrase “título de licenciatura universitaria” to mean a bachelor’s degree; but, they said that adding the term “bachillerato” changes the meaning and is “like going backwards” because it refers to a two-year technical degree or one that can be earned in high school. Moreover, a college-educated Mexican respondent said that the terms “bachillerato” and “universitario” should not go together because the first one requires only 12 years of schooling and the second requires 5 more years of education in a university. Based on these findings the term “bachillerato” was ultimately dropped from the stateside Spanish version.

With only two rounds of cognitive interviewing, the limitation that the Spanish instrument needed to be similar to the English, and the fact that changes to the English version were not possible at the time of this research, our ability to make changes in wording was very limited, and several issues remained unresolved. At the same time, we did identify strategies that enabled us to address several issues successfully. These strategies, which we discuss in the next section, could be applied in other projects where there is more flexibility to make changes to a translation.

⁷ BA stands for Bachelor of Arts, and BS for Bachelor of Science. Both are often used as abbreviations to refer to four-year college degrees in the U.S.

6. Discussion and Recommendations

This paper contributes to the literature on translating survey questions across cultural groups and languages with the ultimate goal of reducing measurement error. The measurement of educational level in countries with high rates of immigration, such as the U.S., can introduce response error in survey data for a number of reasons. In particular, the educational systems in respondents' home countries differ not only from the U.S. system but from each other as well. As our findings show, in some cases there is no easy solution that will apply to respondents of all national origins. However, our research provides some translation strategies that can be used when developing questions for use with culturally diverse populations.

In this study, we observed many differences in the terms preferred by different cultural and national origin groups. The strategies we used to deal with this included tailoring the wording to just one group; grouping multiple terms or synonyms that would be meaningful to respondents with different backgrounds together; the inclusion of English terms in parenthesis to assist respondents who are more acculturated or who have some English-speaking ability; and the use of optional help text to explain confusing terms.

Tailoring translations to use terms specific to a country's educational system, such as in the case of Puerto Rico, appeared to be a successful adaptation strategy. The fact that we had a separate Spanish instrument for use in Puerto Rico made this possible, and may substantially reduce the potential for biased data from Puerto Rican respondents.

A second strategy that we tried was the grouping of multiple terms or synonyms together in one category. The strength of this strategy is that when terms from different countries are grouped together, respondents should be able to recognize at least one of them; however, in this case the fact that the same educational terms are used with different meanings in different countries made the strategy unsuccessful.

Thirdly, our respondents' lack of familiarity with the U.S. educational system and English language limited the usefulness of English terms in parenthesis in this study. However, monolingual Spanish speakers are not the only respondents who use Spanish survey instruments. It may be that this strategy would work well for Spanish speakers who know some English but who choose to complete a survey in Spanish.

A final strategy we attempted was the inclusion of a definition or optional help text when we could not find a way to better translate a concept or program (i.e., home schooling) that does not exist in respondents' countries of origin. In our study, including a short definition of home schooling did not improve respondent comprehension. Even if the definition had been helpful there would be no guarantee that it would be read regularly to respondents in the field. The ideal solution in this type of situation is probably to use a different, more culturally relevant, example just in the Spanish version, creating an adaptation of the questionnaire content.

Our inability to include and validate adaptations at the time of this study prevented us from resolving several issues identified in the Spanish ACS questionnaire. One such issue was how to translate terms in the case where Spanish-speaking respondents from different countries use the *same* terms to refer to *different* concepts, such as levels of education. In this type of case, it may be that a search for "terms" is not the most productive avenue. Instead, a strategy that might prove fruitful is obtaining information

about the *number* of years of education completed *in addition to* the names of specific degrees. There is previous research showing that number of years of schooling alone can be misclassified as a degree earned (Kominski and Siegel, 1993). Reporting of degrees earned provides more information about educational attainment, such as the ability to differentiate between technical and academic tracks (Kominski and Siegel, 1993; Schneider, 2007).

Given our findings, however, asking a follow-up question to Spanish speakers who report that their level of school completed is “diploma de escuela secundaria o preparatoria (high school)” (regular high school diploma) may help to separate those who have completed the equivalent of high school from those who have completed less than high school. The follow-up question could be along the lines of, “*En total, ¿cuántos años de escuela ha completado sin contar kinder?*” (In total, how many years of school have you completed excluding kindergarten?).

This would represent a departure from the wording in the English version, i.e., an adaptation. However, when the goal is to collect parallel data from different cultural and linguistic groups there are some cases where adaptation maybe the only viable solution. Validation testing could be employed to ensure that parallel data are being collected with the different question wording. Ideally, during questionnaire development both the source and translation(s) should be open to revisions, changes, joint testing and cultural adaptations. The goal should be to develop instruments that can collect parallel data without having to be identical in structure and/or content.

7. Areas for Future Research

This study suggests three areas for future research. First of all, there is a possibility of tailoring survey questions to national origin groups given CAPI/CATI, internet and new mobile technologies. In theory, an automated instrument could contain a screening question asking in what country a respondent had completed his or her highest level of schooling. The respondent could then be sent down a survey path that contains educational level questions specific to the system in that country. This solution is currently not an option in the ACS survey because the survey is also administered through paper questionnaires and it would not be possible to send out different paper versions based on respondent national origin. However, this may be a future solution for automated surveys.

Further research is also needed to understand how translations and/or adaptations affect data quality. We can use this knowledge to construct new techniques to translate questions involving unfamiliar concepts among specific populations, such as recent immigrants and respondents with limited English proficiency.

This paper has focused on several possible solutions to the problem of how to best translate survey questions about country specific programs. We have discussed a number of possible solutions to add to researchers’ “tool kits” of translation techniques. While we hope that some of these techniques would be useful with country specific programs aside from education, we advise that any of these possible solutions be tested with respondents of various backgrounds to be sure that they will work in a given context.

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