PROJECT REPORT

Farming Practices as *Funds of Knowledge*

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Abstract

This study examines farming practices across regions as *funds of knowledge* that may be integrated into K–12 curricula and instruction. *Funds of knowledge*, as conceptualized by Moll, Amanti, Neff, and González (1992), include the knowledge students bring from their families and home communities to the classroom, and serve as resources to enhance curricular relevancy, concept and skill development, learner and family engagement, and a positive learning environment. Examples of funds of knowledge include. *Funds of knowledge* include home language use, family values and traditions, caregiving practices, family roles and responsibilities, and professional knowledge, among other factors identified by González, Moll, and Amanti (2005). This qualitative study interviews four participants with U.S. and international farming experience to invite reflection on practices across cultures and regions. Constant comparative analyses of interviews (Merriam & Tisdell, 2015) highlight ways culture and farming are connected and present farming practices as important funds of knowledge. This inquiry offers valuable implications for elementary curricula and instruction.

Introduction

This study examines farming practices as funds of knowledge that may be integrated into K–12 curricula and instruction. *Funds of knowledge*, as conceptualized by Moll, Amanti, Neff, and González (1992), include the knowledge students bring from their families and home communities to the classroom, and serve as resources

to enhance curricular relevancy, concept and skill development, learner and family engagement, and a positive learning environment. *Funds of knowledge* include home language use, family values and traditions, caregiving practices, family roles and responsibilities, and professional knowledge, among other factors identified by González, Moll, and Amanti (2005). This research has sought to develop theory and practical approaches for educators to learn about the funds of knowledge of language learner families, and all learner families, in their school communities and to "re-present them on the bases of the knowledge, resources, and strengths they possess, thus challenging deficit orientations that are so dominant, in particular, in the education of working-class children" (Moll, 2019, p. 131). Collaborations among teachers, parents, and students are needed.

Historically, U.S. public schools have not acknowledged the "strategic and cultural resources" or "funds of knowledge" that U.S.-Mexican multilingual learners have brought to the classroom from their home environments (Velez-Ibenez & Greenburg, 1992). Research offers creative approaches for integrating learner *funds of knowledge* into curricula and instruction. Alvarez (2018) invited bilingual first graders to author autobiographical stories sharing about life in a town on the Mexican-American border. Stories demonstrated self-perceptions as adding to family well-being. *Humanizing pedagogies* have drawn on students' *politicized funds of knowledge* to support critical thinking, literacy skills, and political participation in achieving social equity for all by connecting their lived experiences to school curricula (Gallo & Link, 2015). This study builds on previous research demonstrating family farming experience as valuable student knowledge to engage in elementary science classrooms (e.g., Harper, 2016). Moll (2019) includes farming as one of the careers in the primary and secondary sectors of the economy that learners may bring to the classroom from marginalized working-class homes, and he encourages educators to create opportunity for learners of all backgrounds, including farming families, to "display, elaborate, and share" their experiences as a learning resource and rich knowledge base (p. 131).

Need for the Research

In Fall 2017, 10.1% of students in U.S. public school K–12 classrooms were identified as English Language Learners (ELLs), an increase from 8.1% in 2000 (U.S. Department of Education, 2017–18). These statistics also reflect the population of ELLs in a sample Midwest county, indicating that diversity of student populations exists not only on the borders and coasts, but is integral to the nation. In the Bartholomew County School Corporation in South Central Indiana, of approximately 1,200 students, just over 10% of the K–12 school population identified as English Language Learners (ELLs) (Johannesen, 2019). Of multilingual families in the U.S., about 77% reported speaking Spanish at home, with other common home languages including Arabic, Chinese, and Vietnamese (Bialik, Scheller, & Walker, 2018). Migrant language learning families make up a significant percentage of U.S. agricultural workers. In an article on immigration and farming, Kurn (2018) reflected that "immigrants are deeply involved in this complex journey from seed to plate … an indelible part of rural America, contributing to the economic and cultural fabric of these communities" (para. 2). Farmworkers Justice found that around 70–80% of farmworkers are immigrants, while the United States Department of Agricultural (USDA) found that 60% of all agricultural workers are immigrants (Kurn, 2018, para. 4). The above statistics demonstrate the need to prepare teachers and teacher candidates to support ELLs, farming and migrant families in U.S. schools. Classrooms need curricula and instruction that affirm and engage student backgrounds and knowledge as resources for all in the classroom, including farming knowledge. Moreover, teacher preparation programs need to prepare teacher candidates with curricular resources and instructional capacities for this.

Purpose

This study seeks to "re-present" (Moll, 2019, p. 131) farming knowledge across cultures and regions as *funds of knowledge*. To do this, the study examines connections between culture and farming practices, including similarities and differences across the U.S. and international regions. This study further considers how these farming practices as *funds of knowledge* may be integrated

into elementary curricula and instruction and in teacher preparation contexts seeking to prepare teachers to support multicultural, multilingual learners. A model lesson plan (Appendix A), developed in a teacher preparation course for integrating *funds of knowledge* into curricula and instruction, is shared.

Methods

This qualitative study engaged constant comparative analysis (Merriam & Tisdell, 2015) to examine similarities and differences across farming practices and consider how culture and farming shape one another, from the perspectives of participants who have farming experience in the U.S. and in one or more international regions. Collected data included 30–45-minute interviews with four participants identified through a purposive selection process (Merriam & Tisdell, 2015) that involved asking the county's soil and water conservation district for suggested participants. The first three participants were identified through this route. The fourth participant was identified by inviting volunteers through a social media outreach posted by one of the two researchers conducting the study. All four participants were selected to participate in the study because they had farming knowledge and experience in a U.S. region and in an international region culturally, ecologically, and politically distinct from their own. In the interviews participants were asked to consider how culture *shapes* and *is shaped by* farming practices in the U.S. and in international regions where they farmed. The interview protocol is included in Appendix B. Constant comparative analysis was used to identify themes and sub-themes that emerged from the interview data; the themes were not predetermined. This analysis process involved recording participants' responses to each of the five interview questions, then coding responses focused on the U.S. context or the international context, to identify similarities and differences. The next layer of analysis involved reviewing this chart for key themes that emerged, including theme-based comparisons the participants made about the U.S. and international contexts in which they farmed. Finally, thematic findings were considered for how farming practices as regionally and culturally distinct *funds of knowledge* might inform and be integrated into K–12 curricula and instruction, and how this integration might play a role in supporting multicultural, multilingual learners and in meeting Teaching English to Speakers of Other Languages (TESOL) Teacher Preparation Standards.

Findings: Farming Practices as *Funds of Knowledge*

The findings from this qualitative study build on previous research by suggesting that culture *shapes* and *is shaped by* farming practices, and demonstrate specific ways in which U.S. farming practices contrast with farming practices in international settings. Analyses of participant interviews resulted in findings highlighting the following themes: *automated vs. manual labor, individual vs. social farming, climate impact on food cultivation, institutionalized vs. personalized practices,* and the *politics of land ownership*. Each of these themes highlights how farming involves *funds of knowledge* embedded in the communities and cultures of practice.

Automated vs. Manual Labor

Across interviews, participants emphasized distinctions observed in automated farming in the U.S. and manual farming practices in international developing regions, specifically the Philippines, Bolivia, Peru, and Ecuador. One participant reflected on the necessity to be well versed in technology to farm in the U.S.: "Here in the U.S. we are so reliant on technology and the data it gives us" (Peru-Ecuador-U.S. Farming Participant). She noted the similar use of automated practices in Canada, the Netherlands, and England. In contrast, she reflected on practices in Ecuador, where farming was "super hands-on" and where farmers had the opportunity to obtain technology, "but they choose not to, and would rather have their cows they know personally, and 20 cows they milk every day" and yet "here in the U.S. we might have 10,000 cows on a big farm" (Peru-Ecuador-U.S. Farming Participant).

Individual vs. Social Farming

Another theme that surfaced across interviews is the noted distinction between individual and social farming practices. The participant with experience in the Philippines described farming there as a social enterprise that brought together family and community members. In contrast, he reflected that much of the farming that took

place in the U.S. tended to be individually experienced. He noted that in the Philippines, there were "family groups working together in the gardens and fields" and that farming was "part of their social life, so there was a connection there with the culture" that "happens a lot less in the farms here" because "we are just more spread out" (Philippines-U.S. Farming Participant). Another participant, who had farming experience in Bolivia, reflected on his family's difficult transition to farming abroad but said that their intentional development of friendships resulted in their "farm not walking away on them," or having items taken. This farmer described his transformation in discovering the importance of community to support one another. He emphasized near the end of the interview, "Get to know your neighbors and the services they can offer for free. That is priceless" (Bolivia-U.S. Farmer Participant), and he encouraged this practice across professional fields and across international regions—in the U.S. as much as in Bolivia.

Climate Impact on Food Cultivation

Only one participant emphasized the importance of climate in shaping agriculture and the kinds of foods that can be cultivated, and thus the kinds of foods that are enjoyed most often by the local culture. This farmer referenced his experience in the Philippines to highlight that "where we live determines the climate and what is possible to grow" (Philippines-U.S. Farming Participant). This then influences the kinds of foods that are enjoyed at family and community gatherings, holidays, and other cultural celebrations.

Institutionalized vs. Personalized Practices

All participants described distinctions between institutionalized farming practices in the U.S. and more personalized farming practices in international regions, particularly the Philippines, Peru, and Ecuador. The participant with experience in Ecuador and Peru described the value farmers hold there for knowing "each cow, personally," in contrast to her experience in the U.S. She reflected, "In America we are taught *Go big and do what makes it easier*, but in Peru [the focus is] *take care of yourself, take care of the land, take care of others*" (Peru-Ecuador-U.S. Farming Participant). She said that in Peru there are more "diverse, small field" crops and that farmers "care more about their native plants and what they can grow well," but in the U.S., there are "mass farming or commercial farms that plant all the same crop … 100 acres of potatoes and they are exported" (Ecuador-Peru Farming Participant). This participant felt there was more "pride in what [Ecuadorians and Peruvians] grow because they know it is feeding their neighbors and the community," while in America, it just seems more of an industry" (Peru-Ecuador-U.S. Farming Participant). This participant referenced her observations of farming practices in Canada, the Netherlands, and the United Kingdom that minimized "Go big or go home" practices putting smaller farms out of business. For example, a quota system in Canada requires farmers to purchase rights to the amount of milk a farm will produce—aside from the cost involved in producing that milk. Thus, bigger farms have greater incentive to veer from large-scale farm development. This middle ground seemed ideal to her, as Ecuador's system led to underproduction of milk for the people, yet America's big farm efficiency led to 100 family farms closing their doors in one year. One of the participants with experience in Bolivia emphasized the political challenges they faced in accessing the resources they needed to sustain their living situation. He felt similar challenges will be faced in the U.S. if big business farming pushes out smaller farms, leading to lease farming, and minimizing a farmer's ability to understand and respect the land being cultivated. Likewise, another participant noted that most U.S. farm families are "looking for the next generation to farm that same ground," so it is "critical to preserve that land, so their kids and grandkids can make a living from the land" (Philippines-U.S. Farming Participant). Without personal connection to the land, the process of land ownership can become complex, both financially and politically driven.

The Politics of Land Ownership

The two participants with farming experience in Bolivia continued to emphasize throughout the joint 1.5-hour interview the complex politics involved in land ownership in Bolivia and increasingly in the U.S. One of these participants reflected on observing land permit applications being stacked in one pile for those with "the right connections" and in another pile for those without such connections. He relayed the fear expressed by American Mennonite farmers in Bolivia when a new political leader

entered office, and the negative consequences this would have for their ability to access the resources needed to farm and make any profit on their produce. This participant reflected, "governments and institutions are just a way for whoever has control to have legitimacy to look the other way on the people who they want to get ahead" (Bolivia-U.S. Farming Participant). The same farmer expressed concern over the rising trend in big business farming in the U.S., leading to land rentals and pushing smaller generational family farms out of business.

Discussion and Implications

This study offers insights into important connections between culture and farming practices, and demonstrates ways that farming practices are *funds of knowledge* integral to communities and their cultures. These findings are important for teachers seeking to support multicultural, multilingual learners who may immigrate to a new region and bring a farming background with them, and learners who might gain new knowledge from classmates with a farming background. This study recognizes farming practices as meaningful *funds of knowledge* that learners and their families may bring to K–12 classrooms, as emphasized by Harper (2016). This study also recognizes that student familiarity with farming will vary based on the family, school, district, and region, and teachers will need to adjust accordingly. More broadly, this study builds connections across local and international cultures to promote glocalization as a valuable societal aim for K–12 schools and society, as supported by Patel and Lynch's research (2013). This study reveals specific connections across culture and farming practices regarding the use of *automated vs. manual labor, individual vs. social farming, the impact of climate on food cultivation, institutionalized vs. personalized farming*, and the *politics of land ownership*.

Implications for Elementary Curricula and Instruction

This study demonstrates ways culture and farming shape one another and reveals farming practices as a significant *fund of knowledge* that students and their families may bring to a classroom and to a school community. Understanding similarities and differences across regional farming practices can support teachers in integrating this knowledge into curricula and instruction. Moreover, foundational understandings about agriculture connect to important climate-related content. The following themes from this study align with content covered in the Next Generation Science Standards, particularly Interdependent Relationships in Ecosystems: Environmental Impacts on Organisms taught in Grade 1, 2, and 3; Weather and Climate in Kindergarten and Grade 3; Earth and Space Systems in Grade 1, 2, 4 and 5; and Structure and Function in Grade 1 and Variation in Grade 3. For example, climate impact on cultivation addresses NGSS 3-ESS2-2: Obtain and combine information to describe climates in different regions of the world, and 3-LS4-3: Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all. Examination of institutionalized and personalized farming practices and the use of land meets NGSS 4-ESS3-2: Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans, and 5-ESS3-1: Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment. The following themes address topics covered by the National Council for the Social Studies Standards, including Culture; People, Places, and Environments; Science, Technology, and Society; Global Connections; Civic Ideals and Practices. The potential thematic connections to these standards are many, and we encourage educators to explore them in depth.

Automated vs. Manual Labor

Teachers might guide elementary students in examining both the values and limitations of automated and manual farming practices in the U.S. and in one or more international regions. Such instruction might draw on this study by asking students to debate the pros and cons of using automated farming equipment for different types of farming work such as harvesting crops and milking cows, and to consider how their own values interact with the cultural values of the regions where these farming practices are implemented. One group of students might be asked to learn about and argue for the cultural value of knowing every cow, as in some smaller farms, while another group may be asked to learn about and argue for the business value of producing high volumes of milk in big farms.

Individual vs. Social Farming and Climate Impact

Teachers might partner with the community by inviting parents, older siblings or students, instructional aides, or other members of local multicultural, multilingual communities to visit their classroom and share about their own or their family member's experiences with social farming practices in international regions. This sharing might articulate the benefits of farming together to feed the local community, as well as nutritional benefits and traditional celebrations that are based around specific locally cultivated crops. The speaker might also share any challenges navigated in a family unit and/or local community when members are farming together. Related to culturally cherished foods, the teacher might guide students to research the climate of different regions, how this shapes the kinds of foods grown there, and specific dishes and recipes that become integral to cultural gatherings, holidays, and traditions.

Institutionalized vs. Personalized Practices and Land Politics

Teachers might connect two themes of this study, by helping students examine how institutionalized and more personalized approaches to farming shape and are shaped by the politics of land ownership. Student groups might each take a country and examine how the national and local policies of land ownership shape attitudes toward the land and the practices therein. They might also examine how local farmers and their farming needs and practices influence (or not) local and national policies on land use and ownership. As students compare similarities and differences across regions, the teacher will need to guide students to continually contextualize farming and policy practices with broader local and national cultural influences. Students can be guided to view and understand this new information as *funds of knowledge* they may use to support their own local and global understandings.

Implications for Teacher Preparation

This study offers valuable implications for institutions of teacher preparation, and suggests that the integration of farming knowledge as *funds of knowledge* into teacher preparation coursework is valuable for multicultural, multilingual classrooms. Both local and international learners and their families benefit from connecting with and learning about local and international farming knowledge and practices. Such knowledge is a window for introducing complex cultural, ecological, and political topics, including *automated vs. manual labor, individual vs. social farming, climate impact on food cultivation, institutionalized vs. personalized practices,* and the *politics of land ownership*. Preparing teachers to integrate farming knowledge as culturally shaped *funds of knowledge* into curricula and instruction supports teacher candidates in meeting the Council for the Accreditation of Educator Preparation (CAEP) Elementary Teacher Preparation Standards, particularly using knowledge of diverse families and communities to plan inclusive learning experiences that build on learners' strengths and address needs (Standard 1b); integrating cross-cutting concepts in the content area of science (Standard 2c); differentiating plans to meet the needs of diverse learners (Standard 3d); supporting student motivation and engagement through culturally relevant and interesting content (Standard 3f); and collaborating with peers and other professionals to create developmentally meaningful learning experiences for all (Standard 5a).

Preparing teachers to integrate *funds of knowledge* into curricula and instruction also supports teacher candidates in meeting TESOL PreK–12 Teacher Preparation Standards, including guiding students to engage in discourse across the content areas (Standard 1a); planning for culturally and linguistically relevant, supportive environments (Standard 3a); utilizing relevant materials and resources to support learning (Standard 3e); and collaborating with the broader community as a resource to support student learning (Standard 5a). A model lesson plan, *Farming Practices as Funds of Knowledge for Multilingual Learners*, is provided in Appendix A. Local and international farming practices as *funds of knowledge* serve as a window to better understand students' diverse backgrounds. It is important to prepare teachers to engage this important form of cultural knowledge to affirm and learn from diverse learners.

About the Authors

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References

Alvarez, A. (2018). Drawn and written funds of knowledge: A window into emerging bilingual children's experiences and social interpretations through their written narratives and drawings. *Journal of Early Childhood Literacy, 18*(1), 97–128.

Bialik, K., Scheller, A., & Walker, K. (2018, October 18). *6 facts about English Language Learners in U.S. public schools.* Washington, DC: Pew Research Center. Retrieved from https://www.pewresearch.org/fact-tank/2018/10/25/6-facts-about-english-language-learners-in-u-s-public-schools/

Gallo, S., & Link, H. (2015). "*Diles la verdad*": Deportation policies, politicized funds of knowledge, and schooling in middle childhood. Special Issue *Dissolving Boundaries: Understanding Undocumented Students' Educational Experiences* for *Harvard Educational Review, 85*(3), 357–382.

García, O. (2009). *Bilingual education in the 21st century: A global perspective.* Malden, MA: Wiley-Blackwell.

González, N., Moll, L., & Amanti, C. (Eds). (2005). *Funds of knowledge: Theorizing practices in households, communities and classrooms*. Mahwah, NJ: Erlbaum.

Harper, S. G. (2016). Keystone characteristics that support cultural resilience in Karen refugee parents. *Cultural Studies of Science Education, 11*, 1029–1060.

Johannesen, K. (2019, January 26). BCSC superintendent outlines legislative priorities. *The Republic*. Retrieved from http://www.therepublic.com/2019/01/27/bcsc_superintendent_outlines_legislative_priorities/

Kurn, J. (2018, August 24). *Immigration and the food system*. Cambridge, MA: Farm Aid. Retrieved from: https://www.farmaid.org/blog/fact-sheet/immigration-and-the-food-system/

Merriam, S. B., & Tisdell, E. J. (2015). *Qualitative research: A guide to design and implementation* (4th ed.). Hoboken, NJ: John Wiley & Sons.

Milway, K. S. (2010). *The good garden: How one family went from hunger to having enough*. Toronto, ON: Kids Can Press.

Moll, L. C. (2019). Elaborating funds of knowledge: Community oriented practices in international contexts. *Literacy Research: Theory, Method, and Practice, 68*, 130–138.

Moll, L. C., Amanti, C., Neff, D., & González, N. (1992). Funds of knowledge for teaching: Using a qualitative approach to connect homes and classrooms. *Theory Into Practice, 31*(2), 132–141.

NGSS Lead States. 2013. *Next generation science standards: For states, by states*. Washington, DC: The National Academies Press.

National Curriculum Standards for Social Studies: Introduction. (n.d.). Silver Spring, MD: National Council for Social Studies. Retrieved from https://www.socialstudies.org/standards/national-curriculum-standards-social-studies-introduction

Patel, F., & Lynch, H. (2013). Glocalization as an alternative to internationalization in higher education: Embedding positive glocal learning perspectives. *International Journal of Teaching and Learning in Higher Education, 25*(2), 223–230.

Strauss, A., & Corbin, J. (1998). *Basics of qualitative research: Techniques and procedures for developing grounded theory*. Thousand Oaks, CA: Sage Publications.

TESOL International Association (TESOL). (2019). *Standards for initial TESOL Pre-K–12 teacher preparation programs*. Alexandria, VA: Author.

U.S. Department of Education, National Center for Education Statistics, Common Core of Data (CCD), Local Education Agency Universe Survey, 2017–18. Retrieved from https://nces.ed.gov/programs/coe/indicator_cgf.asp

Vélez-Ibáñez, C. G., & Greenberg, J. B. (1992). Formation and transformation of funds of knowledge among U.S.-Mexican households. *Anthropology & Education Quarterly 23*(4), 313-335.

APPENDIX A:

Lesson Plan: Farming Practices as Funds of Knowledge for Multilingual Learners

Teaching Context

Grade Level(s): 5th
Number of Students: 20–25
Multilingual Learners: 50–75%

Lesson Planning

Indiana Science Standard 5.ESS.3:
Investigate ways individual U.S. communities protect the Earth's resources and environment.

Learning Outcome:
Students will COMPARE how communities in three regions practice sustainable farming.

Indiana Social Studies Standard 5.2.8, Roles of Citizens:
Describe group and individual actions that illustrate civic virtues, such as civility, cooperation, respect, and responsible participation.

Learning Outcome:
Students will DESCRIBE sustainable farming practices in three regions as *funds of knowledge.*

WIDA ELD Standard 3 and WIDA ELD Standard 5:
English language learners communicate information, ideas and concepts necessary for academic success in the content areas of Science and Social Studies

Language Objectives:
Students will IDENTIFY and DESCRIBE similarities and differences in sustainable farming practices as *funds of knowledge* in Honduras, Guatemala, and the U.S. (Indiana).

Lesson Instruction

Lesson Introduction:
Share with the class three pictures of *sustainable farming* practices, in Honduras, Guatemala, and the U.S. Ask if anyone knows or can guess what *sustainable farming*, means. Repeat student ideas in English and Spanish and write ideas in both languages on the board. Provide a definition for sustainable farming in English and Spanish. Explain that sustainable farming is important for all countries as everyone needs access to sustainable, nutritious food. Note the class will learn about *sustainable farming practices* in three different countries today: *Honduras, Guatemala,* and *the U.S.—Columbus, Indiana!* Introduce the book, *The Good Garden: How One Family Went from Hunger to Having Enough* (Milway, 2010). Ask the class to examine the title and picture on the front cover to predict what the book may be about. Explain the book is about one family's work in Honduras to begin sustainable farming practices, by creating a garden to provide sustainable food security for local families.

Learning Activities:

Pass out the Venn Diagram graphic organizer.

I DO: Model for students how to complete the *Honduras* section. Read *The Good Garden* in English, with Spanish translation by the instructional aide. Complete this sentence frame on the board: "In Honduras, sustainable farming can include ____ and ____."

APPENDIX A:

Lesson Plan: Farming Practices as Funds of Knowledge for Multilingual Learners (continued)

WE DO: Invite the instructional aide to share in English and Spanish about sustainable farming practices on her grandparents' farm in *Guatemala*. As a class, complete this sentence frame on the board: "In Guatemala, sustainable farming can include ____ and ____."

YOU DO: Play video a local farmer in *Columbus, Indiana* created about sustainable farming practices that many farmers use in Indiana. Invite students to pair-share and complete this sentence frame by speaking and writing, in English OR another language: "In Columbus, Indiana, sustainable farming can include _____ and _____."

Lesson Conclusion:
Invite pairs to verbally respond to the following questions: *What are similarities across the sustainable farming practices in Honduras, Guatemala, and Indiana? What are differences?* Students will be invited to use their Venn Diagrams and the following sentence frames to respond: "One similarity in sustainable farming practices across the three regions is _____." and "One similarity in sustainable farming practices across the three regions is _____." Ask students how these practices relate to the concept, *funds of knowledge*, shared in the previous lesson. Conclude that the sustainable farming practices discussed today are *funds of knowledge* of the cultures and families within those regions, including their agricultural, environmental, and professional knowledge.

APPENDIX B:

Interview Questions: Farming Practices as *Funds of Knowledge*

Interview Introduction:
We are conducting this interview as part of a study to learn more about farming practices as *funds of knowledge* and how these may be integrated into K–12 classroom curricula and instruction. Dr. Luis Moll, from the University of Arizona, studied and describes *funds of knowledge* as the knowledge that students bring from their families and homes to the classroom, which can be used to teach concepts and skills in the classroom curricula. Dr. Harper of the University of Georgia encourages reciprocal construction of classroom knowledge in which families' farming practices are engaged as valuable *funds of knowledge* in science.

Funds of knowledge can include a variety of understandings, such as cultural traditions, values, beliefs, languages, professional skills, farming practices, recipe nutrition, etc.

Interview Questions:

1. Explain any farming practices that are valuable to your culture and may represent *funds of knowledge* within your culture.

2. Explain any views toward the ecology and the land that are important in your culture and may represent *funds of knowledge*within your culture.

3. Do you feel your culture and farming practices are connected? Explain your response.

4. Do you feel your culture may *shape* farming practices in your region of origin? Explain.

5. Do you feel your culture is *shaped by* farming practices in your region of origin? Explain.