Chapter 5
Signature Pedagogies in Global Competence Education: Understanding Quality Teaching Practice

Veronica Boix Mansilla and Flossie SG Chua

Abstract How might we support young people to understand who they are in an interconnected world, prepare them to consider multiple perspectives as they collaborate with others across cultures and languages to improve conditions, and provide opportunities for them to participate positively in civic life, school, and work? Preparing students for today's world requires not only that we think about what matters most for students to learn, but also what kind of teaching and learning will prove most effective. Building on Lee Shulman's idea of *signature pedagogies*, we propose a pedagogical approach uniquely tailored to nurturing deep, relevant, and compelling global learning and a concomitant framework for developing teacher expertise. We define s*ignature pedagogies* in global education as a pervasive set of teaching practices that nurture students' capacity and disposition to understand and act on matters of global significance. Signature pedagogies organize learners' experience to inculcate in them hallmark global competence habits of mind: investigating the world, taking perspective, communicating across difference, and taking action. They offer students ample opportunities to engage in "junior versions" of authentic practices in relevant fields, and represent instructional tropes, paths, or motifs. Using illustrative cases at the elementary school level, we describe two types of signature pedagogies in global education: *research expedition* and *purposeful comparisons. Research expedition* pedagogy focuses on learner's understanding and experience of a distant place – geo-physical and environmental qualities, built and natural landscapes, people and social organizations, as well as manifestations of culture in the form of taste, values, practice, relationships and beliefs – and helps them develop a sense of personal connection to it. *Purposeful comparisons* pedagogy builds on the premise that an individual can understand the world by examining a single phenomenon across multiple locations through the lens of a question that makes cross-case analysis necessary. It

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V.B. Mansilla (✉) • F.SG. Chua
Harvard Graduate School of Education, 10 Akron Street, #516, Cambridge, MA 02138, USA
e-mail: veronica_boix-mansilla@harvard.edu; flossie_chua@harvard.edu

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often involves creating a model or a frame that helps us distil relevant aspects of each case, identifying similarities and differences to inform our understanding. When such signature pedagogies are designed to be a regular part of the learning experience, they nurture understanding of the world and key global dispositions in learners.

> *What I thought, since all the movies that I saw, is that they would be more poor, that they [e-pals in South Africa] would not have a city, that their homes would be made out of dried up mud… I was really surprised because they looked nothing like that… they have a lot of the things that we do, they have video games and a city… I was really surprised…. 'cause they have good teeth, real clothes, full hair. [Working with our South African ePals] is cool because we can talk with people from different continents… We can see how people on the other side of the world live, and what they do, not at all as I imagined it…*
>
> Richard, Grade 4 New York

Overview

Preparing our youth for a time of unprecedented social, economic and environmental global interdependence requires that we reconsider what matters most to teach and learn and what kind of learning might prove most effective. A fast-growing literature on global competence instruction and assessment is shedding light on the opportunities and challenges we face. Introducing new countries and festivals into already crowded curricula or proposing forced connections between quadratic equations and farming in Namibia will not yield the deep learning we seek. Teaching for global competence goes beyond delivering new content through transmission-centered pedagogies. Rather, we argue here, it calls for a pedagogical approach uniquely tailored to nurturing deep, relevant, and sustained global learning.

In this chapter, we propose that successful preparation of our youth for the contemporary world requires that we seriously address four fundamental questions:

1. What are the global competence learning outcomes we seek?
2. What kind of instruction effectively nurtures deep and relevant global learning?
3. What does quality teaching for global competence look like?
4. How do we prepare teachers to teach for global competence with depth?

To address these questions we draw on an empirical study of exemplary practices in global competence education.[1] Through a series of case studies, we investigated how award-winning[2] global education teachers create conditions to foster global competence. To understand the promise and power of their pedagogy, we visited their classrooms, documented selected lessons and interviewed them before, during and after their units. We also interviewed students, and analyzed student work and curricular materials. Close analysis of these master teachers' practices through

[1] This study was made possible by the Longview foundation. We thank Jennifer Manise for her unwavering support of this multi-year investigation and her leadership in the field of Global Education.

[2] Teachers were awarded the Fulbright Distinguished Teacher at the US Department of State.

individual case studies and comparatively across cases has enabled us to identify and illustrate a series of *signature pedagogies* in global education – i.e. characteristic forms of instructional practice that may prove uniquely potent in nurturing globally competent youth.

Here, we introduce a "signature pedagogies" approach to global education and illustrate it with two cases of exemplary teaching in elementary public school classrooms. We first revisit global competence as the capacity and disposition to understand and act on issues of global significance (Boix Mansilla & Jackson, 2011) and place this definition in the larger context of the learning theories that inform it. Next, we turn to quality instructional designs by introducing a *signature pedagogy* approach to teaching for global competence. We then illustrate signature pedagogies [herein SP] using two elementary school case studies. We conclude by examining the implications of a SP approach for teacher education, share currently unanswered questions, and outline next steps.

Educating for "Global Competence" – What Are the Learning Outcomes We Seek?

A Constructivist View of Deep, Long-Lasting, and Relevant Learning

We define global competence as *the capacity and disposition to understand and act on issues of global significance* (Boix Mansilla & Jackson, 2011).[3] Developed collaboratively by Asia Society and the CCSSO, and informed by Harvard Project Zero's research on learning and instruction, this definition builds on a few key premises about the kind of learning necessary for preparing our youth for the world. Firstly, global competence is cast as a capacity to understand – to use disciplinary concepts, theories, ideas, methods or findings in novel situations, to solve problems, produce explanations, create products or interpret phenomena in novel ways (Boix Mansilla & Gardner, 1999; Wiske, 1999). With its focus on disciplinary and interdisciplinary understanding, this definition embodies *deep subject matter* learning.

Secondly, if "understanding" speaks of *depth and flexibility in subject matter expertise*, "global competence" as a disposition speaks of *depth in terms of student ownership* and transformation. Dispositions involve the *ability* to think with information, the *sensitivity* to opportunities in the real world to do that, and an *inclination* to do so over time (Perkins, Tishman, Ritchhart, Donis, & Andrade, 2000). Dispositions are about the 'residuals' of learning beyond formal contexts (Sizer, 1984); they are about the "kind of person" a student will become (Boix Mansilla, Miller, & Gardner, 2000). Focusing on dispositions directs our educational efforts

[3] This definition was developed at the Council of Chief State School Officers. The Global Competence committee was led by Asia Society's Tony Jackson. Its published articulation and exemplification was informed by research conducted by Veronica Boix Mansilla at Project Zero, Harvard Graduate School of Education.

to nurturing young people's habits of mind or orientation towards globally competent thinking and behaviors.

Finally, as global competence focuses on issues of global significance and action to improve conditions, learning must be visibly *relevant* to students and the world. When *significance* is considered, global competence curricula becomes a call for authenticity, for carefully looking to the contemporary world for topics that matter most to examine.

Beyond Knowledge, Skills, Attitudes and Behaviors

Our treatment of global competence also favors an *integrated* view of learning, targeting a complement of practices such as "investigating the world," "taking perspective", "communicating across difference", and "taking action" (see Fig. 5.1). Such characterization puts a premium on *meaningful and purposeful units of practice in the world*, thus moving global competence beyond itemized lists of "knowledge, skills, attitudes and behaviors" (Gibboney, 2006). While such lists may help teachers navigate the complex multidisciplinary space of global education, rich and



Fig. 5.1 The Global Competence framework

deep global competence learning pays attention to the inseparable interaction of knowledge, skills, attitudes and behaviors. This holistic view of global competence learning makes authentic purposes for learning more visible to students, whether they seek to understand human impact on the environment as an example of "investigating the world" or make sense of belief systems different from their own as a way to "take perspective." Integrated practices of global competence like the ones proposed add relevance and meaning to students' learning experiences, facilitating meaningful transfer of learning beyond classroom walls. Quality teaching enhances students' sensitivity to opportunities to employ the competencies they have developed productively in life beyond school.

In sum, if as today's professionals in education we are to prepare our youth effectively for the world, we need clarity about the kind of learning we are after. Recognizing that multiple articulations of learning priorities exist in today's changing educational landscape, the constructivist approach we here propose puts a premium on global competence as deep, relevant, and long-lasting. Learning that highlights the key role of disciplinary and interdisciplinary expertise foregrounds an integrated view of complex learning capacities such as investigating the world or taking perspective, and aims at the development of habits of mind or dispositions—attending to the long term residuals of learning and transfer.

Teaching for Global Competence: How Should We Design Instruction for the Kind of Learning We Are After?

Conceptions of learning like the ones described above demand carefully tailored teaching approaches that effectively nurture the kind of learning sought by educators interested in nurturing global competence. Instructional recommendations abound in the global education literature today. They address generic teaching practices such as cooperative learning, interdisciplinary themes, community-based learning and portfolio assessment (Asia Society, 2011; Appleyard & McLean, 2011; Longview Foundation, 2008; Merryfield, 1994; Roberts, 2007; Zhao, 2012). They also include instruction specifically tailored to global content such as comparing civilizations (Asia Society, 2011; Koziol, 2012; Merryfield, 2002) or interpreting sources from distant places (Lapayese, 2003; Vainio-Mattila, 2009).

These recommendations offer productive instructional directions for practicing teachers and teacher educators. Yet, implementing them with quality requires that we understand how *exactly* a given learning experience is designed to maximize students' global competence. For example, upper elementary school teachers teaching about ancient civilizations often design compare-and-contrast activities for student-selected topics: e.g., food, sports, activities, government, or natural resources. Such activities might develop students' comparison skills and provide specific information about civilizations, but they fail to foreground *why* certain comparisons matter. Instead, comparing civilizations to understand why they rise

and collapse puts knowledge and skills in service of a larger inquiry with clear past and present significance. Engaging in purposeful inquiry and building a robust mental schema for the rise and fall of civilizations will support students to 'think with' the information they acquire to understand this broader phenomenon. Such schema would need to reject formulaic or oversimplified comparisons. Rather, multiple dimensions such as environmental fragility, relations with neighbors, political institutions, and levels of stability of a society would need to be considered in age-appropriate ways. Careful and critical comparisons would help students see how these factors have played out differently in civilizations like the Mayans and the Babylonians. More importantly, students thus educated may use their emerging understanding as a "lens" through which to reflect about contemporary developments –from climate instability, to overfishing, population explosion, war – that might put contemporary societies at risk (Diamond, 2006).

What makes for more versus less compelling learning experiences in global education? How can we design instruction or instructional environments that go beyond information acquisition and nurture young people's capacity and disposition to understand and act in the world?

Signature Pedagogies in Global Education: Our Contribution

"Signature pedagogy," a term advanced by Lee Shulman (2005) in the post-secondary education context, refers to a pervasive set of practices used to prepare scholarly practitioners to "think, perform and act with integrity" in their professional domain (Shulman, 2005, p. 52). Examples of signature pedagogies vary greatly across professional domains, and include diagnostic rounds in medicine, case method in law and business, critiques in engineering and art studios, each embodying foundational ethos of the profession. In its original application to professional learning, a signature pedagogy approach assumes that quality teaching is deliberate, pervasive and persistent; teaching reveals learners' prior assumptions; it engages them in formative experiences and requires ongoing assessment. Signature pedagogies organize learners' experience to familiarize and acculturate them with the core habits of mind and practices that they are expected to develop as a result of their education in a given field or discipline. While earlier research on signature pedagogies examined teaching practices in disciplinary and professional tertiary contexts, our work extends the notion of signature pedagogies to K-12 environments and specifically to global education.

We define s*ignature pedagogies* in global education as a pervasive set of teaching practices that nurture students' capacity and disposition to understand and act on matters of global significance. They represent characteristic instructional "tropes", "paths", or "motifs" that are repeated over time in learners' education to familiarize them with globally competent habits of mind: investigating the world, taking perspective, communicating across difference, and taking action in ways that are informed by disciplinary and interdisciplinary perspectives. In this paper we

introduce two SPs: "research expeditions" (or "travel pedagogy") and "purposeful comparisons".

A "research expedition pedagogy" focuses on understanding a distant place. Expeditions help individuals *experience* a given place – physical and environmental qualities, built and natural landscapes, people and social organizations, as well as manifestations of culture in the form of tastes, values, practices, relationships and beliefs. Through expeditions, learners typically observe, live and engage with a novel environment, often encountering unexpected contextual information not usually captured in textbook narratives or presentations. Ultimately, learners develop a sense of personal connection to the places explored.

A "purposeful comparisons pedagogy" builds on the premise that learners can advance their understanding of selected aspects of the world in which we live by examining a single phenomenon across multiple locations. Powerful comparisons are guided by a question that makes cross-case analysis necessary. They often involve creating a model or a frame that helps us distil relevant aspects of each case, identifying similarities and differences to inform our understanding. Insights resulting from these global comparisons are more than the sum of their local parts; they leverage learners' developing capacity to explain the phenomenon in question or find more informed solutions.

As the cases suggest, signature pedagogies offer students ample opportunities to engage in "junior versions"[4] of key practices in relevant fields (e.g. research expeditions in anthropology, cross-case comparisons in international relations). But what makes signature pedagogies powerful approaches to quality teaching for global competence? What distinguishes them from teaching designs that are not uniquely focused on global competence? Six principles that underlie signature pedagogies as proposed here address these questions.

Core Principles for Quality Practice

Our analysis and conceptualization of exemplary teachers' practices reveal six defining principles of signature pedagogies in global education. We introduce them here and illustrate them in the next section.

1. **Clear global competence purpose**: Signature pedagogies focus deliberately on the development of global competence – the capacity and disposition to understand and act on issues of global significance – as its central aim, attending to deep, relevant, and long-lasting learning.
2. **Strong disciplinary foundation**: Signature pedagogies provide students with meaningful opportunities to engage, apply and *think with* disciplinary concepts

[4] In his book Making Learning Whole, David Perkins coined the phrase "junior versions" to describe the best 'threshold experiences' that provide students with opportunities to see the 'big picture' of the issue, topics, etc., under study.

and modes of thinking in developmentally appropriate ways. Disciplines may range from social studies, to English, biology, mathematics, the arts, and beyond, depending on the nature of the issue pursued.

3. **Attentive to learning demands**: Signature pedagogies are purposefully designed to address global competence learning demands, including, but not limited to, overcoming stereotypes, managing emotions, and understanding complex causality.
4. **A case-based core:** Signature pedagogies do not teach about "the world in general" but about global issues *in context*. Resembling case-based pedagogy, they focus on specific issues and contexts—environmental crises in the Peruvian Amazon, the impact of sea levels rising on coastal communities in New York and Cape Town.
5. **Spiraling presence**: Specific signature pedagogies appear often and in increasing complexity throughout a student's learning, providing opportunities to develop global understanding and dispositions with growing autonomy.
6. **Adaptive:** As with most innovative professional practices, signature pedagogies lend themselves to revision in response to emerging global trends or events, new digital tools, or careful reflection about learning.

Signature Pedagogies: Pictures of Practice

To illustrate how a signature pedagogies approach and the six principles above can organize and deepen instructional practice, we turn to two cases of exemplary global competence instruction at the elementary school level. As stated earlier in this chapter, the signature pedagogies below stem from an empirical examination of two experienced public school teachers and recipients of the Fulbright Distinguished Teacher award. In each case, detailed qualitative characterizations of teachers' practice were placed in dialog with pertinent literature in learning sciences to reveal and progressively sharpen the six signature pedagogy principles introduced above and enrich the cases described below.

A Pedagogy of Travel

Nurturing Global Competence Through Research Expeditions to a Distant Place

How do we help young people understand distant places and people in meaningful ways? How do we support them to make sense of issues unfolding in faraway contexts and connect to them personally? Sara Krakauer teaches 5th and 6th grade Social Studies at Innovation Academy Charter School, a public school in Western Massachusetts. Her "Global Action" unit seeks to help students learn world

geography and culture through "travel" without leaving their classroom: students "visit" distant places such as Zambia and Peru to learn their geography, culture and history, through the lens of local issues relating to health, the environment and poverty. Sara leverages available technologies, media and her own travel stories to make these "virtual travels" possible. In her classroom, Google Earth, Skype, films, photographs, maps and graphics are regularly used. Sara explains.

> My goal is to expose students to a wide range of perspectives and places in the world and help them see that their perspectives and their culture isn't the only thing out there…. I want to really give the students a chance to feel what it'd be like to be there [In Zambia, Peru or Guatemala], to get to know a place well rather than learn a little bit about lots of different places. What is special about this place? What are people there proud of, what are they struggling with? So I focus more on having a personal connection that means something rather than just learning facts.

Learners who understand a distant place move beyond "just learning facts". They are able to visualize and navigate local environments with nuance and develop a sense of the lives of the people inhabiting such places and their relationship with their natural and cultural habitats. "Understanding a distant place" involves learning to take the perspective of various actors to examine local spaces, issues or events. It invites a holistic or systemic approach to learning that goes beyond naming isolated rivers or cultural practices. Rather, it involves understanding a place and its people in dynamic interaction. Even among very young students, understanding a distant place in depth involves thinking with "big ideas" to make sense of the physical, natural and cultural dynamics of a given location. Among these younger learners, ideas such as "a community of people, animals and plants" or the notion of "fighting over what we should do with the forest" serve as precursors of more complex disciplinary notions of "ecosystems", "interdependence", "conflict" and "sustainability," which are typically used in science and social studies.

Key Experiences in a Travel Pedagogy Arc

A powerfully designed travel or expedition involves at least four kinds of learning experiences that play out iteratively throughout a unit or project: finding purpose; being there; making sense; and connecting personally.

1. Expeditions begin with a purpose

Quality learning takes place when students' efforts are driven by a meaningful and engaging purpose. In her unit, Sara invites students to become "international researchers" who learn about people and places that are far away, communicate with people who are different from them, and identify problems and find solutions that are respectful of local people and their environments. "We travelled to the Amazon forest in Northeast Peru to study the conflict between indigenous communities whose traditions, culture and diet depend on local trees and plants, and [Exxon Mobil] an oil company that is contributing to deforestation by extracting and exporting oil," Sara explains. Clarity of purpose enables students to identify relevant

sources of information, craft more informed and targeted questions for visiting experts, and understand why their learning matters. To ensure that students *share* the sense of mission for their travels and develop a genuine curiosity for the places they will visit, Sara begins the unit with the film *Africa's Child*. The film introduces students to concepts like malaria, life expectancy, birth rates, HIV/AIDS, sanitation, measles, vaccines, and water. Sara complements the film with personal travel stories, photographs, and local newspaper articles. This initial exposure helps students uncover the multiple dimensions of the place, culture and problem they will study, and raise potent inquiry questions. Children want to know: W*hy do poor local farmers support deforestation in Peru? Why do some people in the city not care about deforestation?* These questions serve as a diagnostic assessment of the students' initial beliefs or preconceptions and set the stage for genuine inquiry.

2. "Being there": Helping students experience places and people

Traditionally, in social and environmental sciences, deep understanding of a place occurs through *fieldwork*. Today's technologies enable teachers to create multiple virtual proxies for actual field experiences. In Sara's unit, the "journey" to each new country begins in Google Earth as the class "zips across the landscape" from Logan Airport in Boston to Zambia or Peru, aerially seeing the destination country's various topographies, areas of wilderness, and development. Students "walk" or "drive" down the streets and visit places through YouTube videos, taking note of what they see. They experience local attractions through photographs, films, essays and music. To deepen their sense of "being there", Sara assigns students key roles: In Peru, "Journalists" monitor local news (e.g., the Herald or "el Sol"] for important daily developments with particular attention to news about the environment, indigenous communities and the rainforest crisis. "Guides" investigating activities specific to the place (e.g., bull fighting and natural reserves) pay particular attention to experiences that might help them understand their focal issue in a larger context. "Treasurers" manage a limited budget for the group and teach others about the local cost of living, currency and exchange rates. They estimate costs for transportation or activities, prioritizing expenditures for the group. A series of weekly guest speakers and Skype meetings with people from their target places further enrich the students' sense of "immersion" in their place of study and the various perspectives on the issue under study.

Visualization is essential in supporting students to understand a place. "Seeing" Peru in multiple ways - cities, environments, maps, data, and relationships-is key to developing a sense of place. Sara's own documentation of her travels add a personal layer to this visual expedition. Quality "seeing" in a pedagogy of travel of this kind involves "slow looking" which awakens and engages the mind: staying close to an image of the Port of Iquitos by the Amazon river, or another of the banking district in Lima, can provoke powerful questions for further inquiry: *What do you see? How is this image similar to how you imagined Lima to be? How does what you see extend your thinking?* Such questions invite students to engage deeply with visual representations and prepare them to "read" places closely. Effective use of visuals

challenges students' assumptions about what life looks like in countries under study. According to Sara:

> [The students] tend to think it's all mud huts in Africa and then they'll see a ten-storey bank or billboards. Often times the urban landscape is not something they associate with Africa [or Latin America]. We talk about the kinds of assumptions people make and why and how what they're seeing doesn't meet their assumptions… It's important because students won't care about a place unless they have some understanding of what it's like.

3. Making sense: Supporting students to advance and revise interpretations

Making sense of a distant place is challenging. Students must move beyond what they see, read and hear, to inquire, weigh possible interpretations, deliberate, corroborate, and consider context. A pedagogy of travel encourages students to ask questions that consequently "tool" their sense-making capacities*: How typical is what we are seeing? How does context (natural, historical, etc.) shape the lives people live (e.g., their needs, available resources, opportunities)? How do people in this region draw on the resources they have (e.g., natural, creative uses, resilience) in order to improve their lives?* These questions invite students not only to critically examine the information they have, but also to begin to hold complex and contradictory ideas in the same mental space: *how might "resources" come to mean different things to people in my community and in a different place? Why does "improvement" of life seem to be different for different people? What does "enough" or "wealth" really mean?*

Interpretations abound in Sara's class. Students discuss videos, images, and graphs. They compare simple data and create complex representations of their target place. Sara explains:

> Videos were helpful in helping students see and connect. We also worked on graphing and mapping data on topics like life expectancy, access to clean water, rates of AIDS infection. Students created thematic maps to show data in different countries and compare them to Zambia, the country we were working on.

Similarly, after examining multiple videos of the Amazon rainforest and the impacts of deforestation, students produce rich descriptions of ecosystems. They learn to manage complex information and to "make sense":

> I want to see the best ecosystem descriptions possible. What are the research questions you have about this ecosystem? What makes for a good ecosystem description? What will be valuable information? What do we need to find out about the threats to this ecosystem? – Sara

Students' co-construct and then apply criteria for quality descriptions to group presentations on specific aspects of the ecosystem. Collectively their descriptions informed the design of a three-panel wall mural. The first panel depicted the pristine rainforest, its various species, resources, and interdependencies. The middle panel included excavators and fallen trees. The third presented two visible paths, "what happens if the environment is not taken care of", and what if it is. Sara described this project with pride: "Seven students worked on this, creating different parts of the

image and sharing every part of the vision and research. They then created a stop-motion animation with their mural as the background."

Helping students make sense of the places and people they encounter required that Sara also challenged misconceptions and stereotypes. Early in the unit, students researching clean water in Guatemala assumed that the issue lay with the Guatemalans' ignorance of the importance of clean water, and subsequently created a video with the message, "here in America, we drink clean water. Let us send our clean water to you." Sara quickly attended to this problematic perspective by drawing her students' attention to the complex problem of water access: what is access to clean water, and why might somebody not have such access? Relevant sources (country reports, documentary videos, conversations with guests from Guatemala) became key to challenging her students' preconceptions and supporting them to build a more complex understanding of the Guatemalan water crisis. Similarly, reading daily local news confronted students with front-page crises, violence and problems that risked reinforcing cultural stereotypes about the developing world. "We had to have conversations about this," Sara explains. She asked students to consider why they were seeing primarily negative news. "The kids would come to understand that newspapers were not reporting the good stuff."

Through close analysis of selected sources and classroom discussions where students advance and calibrate their proposed interpretations of the people, issues and places under study, an ongoing expectation to reasoning with evidence ensues. "What makes you say so?" "How do we know this?" In a pedagogy of travel, quality instructional design supports students to understand the dangers of unfounded assumptions when making sense of distant places as well as the importance of gathering additional data to more deeply understand a different people and place. A commitment to thoughtful interpretation also shapes Sara's invitation to students to prepare a presentation that not only describes the issue and place under study but also helps explain how the local geography, natural environments and cultures shape the experiences and opportunities of people far away. Most importantly, the presentation are created with two audiences in mind: locals there, and locals here.

4. Connecting personally

A final essential aspect of the travel pedagogy here advanced involves inviting students to connect personally with the people and places "visited". How does our life compare and connect to that of the people we study, and how do you communicate with and relate to them in meaningful ways? Sara's students deepened their understanding of how the geography, culture, and people in a place shape local issues and their possible solutions. Peru is far from the students' home in Massachusetts, and inevitably, ruminations about "people there" sparked conversations about "us here." Students' learning instilled a sense of proximity and a personal investment in Peru, Guatemala and Zambia. The Peruvian Amazon region, for instance, gained a special place in students' mental representation of the Latin America region. Sara's students spoke extensively about how their lives and that of others they had studied differed and how they felt connected through shared experiences such as love for family and for one's place of birth, as well as more

mundane and simplistic ones such as "they do things outdoors and we do things outdoors."

Direct interaction with local peers also challenged students to recognize their own assumptions and culture. For instance during a Skype conversation, a student in Botswana asked Sara's class how they were dealing with the problem of guns in schools in the US. Students were taken aback and soon they recognized that the issue was real and that it was likely to have dominated the media accessed by their peers far away. Connecting personally involves viewing oneself through the eyes of others.

Finally, a greater challenge for younger students when seeking to connect personally with a distant place through these expeditions is seeing how both "we here" and "they there" are part of a broader global system in which their own actions might impact (thus connect with) other parts of the world in positive or negative ways. One student, Leah, feels that it is wrong for companies to drill for oil in the rainforest and understands that the oil goes to fueling cars and homes. Yet, when asked about connections between the issue she studied and her own life, she did not see our daily consumption habits as having far reaching consequences. She proposed, appropriately, signing petitions and planting more trees as helpful actions to be taken over *there*, but did not consider cutting down on our use of oil *here*.

In sum, a "pedagogy of travel" or research expedition invites students to understand particular places selectively, and is an accessible way to engage a complex global issue. Through a clear inquiry focus, a wealth of visual materials and immersive digital experiences of "being there," delicate treatment of evidence and interpretations to "make sense" of a distant place, and a deliberate effort to connect personally with the locations and issues under study, a pedagogy of travel prepares students to understand, in Sara's words, "that the world is not as big as it seems. That there are so many opportunities out there if they take a risk and go outside their comfort zone. The world is so full of new ways of thinking, new ideas, new beauty, places to explore and issues worth pursuing." Ultimately, a travel pedagogy has the potential to instill in students "an appreciation for the world beyond themselves", an ability to make sense of the unknown, to make connections beyond their own culture and communicate and act in more informed and considerate ways.

A Pedagogy of Purposeful Comparisons

Nurturing Global Competence Through Cross-Case Analysis

How can we support young people to engage with global issues that can seem impossible to ameliorate? How might we help them see local instantiations of such issues, and learn to advance better explanations or more informed solutions? Kottie Christie-Blick teaches 4th and 5th graders in Cottage Lane Elementary School, New York. Deeply interested in and committed to mitigating the impact of climate change, Kottie's "*Climate Stewards Go Global!*" unit seeks to nurture students' global competence by investigating the relative impact of climate-related sea levels

rising on coastal communities in New York and Cape Town, South Africa. Her unit invites students to understand how global phenomena such as climate change and sea levels rising play out in two locations, and the actions they might take in collaboration with their South African peers to mitigate climate change.

Learners make purposeful comparisons across cases when they are guided by an inquiry question that is meaningful and relevant to them. By studying how rising sea levels are at the same time similar and different for New Yorkers and South Africans, Kottie's students begin to understand how a single phenomenon might impact different natural and human communities. As they begin to identify trends or patterns across the cases, students begin to distill relevant aspects of each case into a model or frame that they may use to study other global phenomena.

Key Experiences in the Pedagogy of Purposeful Comparisons Arc

A powerfully designed cross-case analysis involves at least four kinds of learning experiences that may play out iteratively throughout a unit or project: finding purpose; creating models or frameworks for comparisons; understanding real contexts, making informed decisions.

1. Finding purpose: Focusing on comparisons that are illuminating

Why is the ocean rising? What will happen if it rises one or two meters higher? Will all coastal communities be affected in the same way? What can we do to mitigate climate change? Is one solution enough for all? How can we work with friends from around the world to find the best solutions? For Kottie's students, the problem of sea levels rising was a pressing and present one; they had firsthand experience with the devastating impact of Hurricane Sandy on their community that year. As they walked around the neighborhood to survey the damage, saw photographs of large yachts washed up from the Hudson onto people's properties and houses, and took note of crumbled away homes in the floods, they began to realize the importance of understanding why there was severe flooding even though there was not much rain during the hurricane. How might that be prevented in the future?

For Kottie, empowering her young students to take positive action against climate change is imperative. She understands that opinions may differ on the issue but is committed to supporting her students to develop a scientifically informed view. A priority for Kottie is making the complexity of the issue accessible to children aged 9 and 10. "Our planet is warming up," she explains, "with far-reaching implications for us all. The conversation in scientific circles now is how Earth will respond, how well the living things on Earth will be able to adapt, who will be the winners and the losers, and what we can do to slow down our warming climate." Her "*Climate Stewards Go Global*!" unit was designed to help her students understand the confluence of factors that led to the severe flooding in their own community, as well as the connection between "what they had experienced firsthand already, and this whole global issue of sea level rise and how that connects with global warming because they weren't sure of that connection yet." Collaborating with a classroom in Cape

Town, South Africa, made sense because rising sea levels visibly affected life in both coastal communities. More importantly, the comparison would enable the children to see how a common global phenomenon can have different impact and require distinct and locally relevant solutions.

2. Creating models or frameworks for comparison

To help her students visualize how the melting polar caps raise sea levels, and how such changes could affect landscapes and communities differently, Kottie adapted a model she had seen in the Nobel Center in Norway into a maquette for her classroom. She invited students to place tiny models of houses on the lower levels of the maquette, and then experiment with the rate at which the ice cubes placed on the higher levels melted and flooded the lower levels. When they saw how their "houses" were swiftly swept away by the cascading waters or the rising seawaters, the students became agitated, and many moved their "homes" to different parts on the lower levels, but found that the result remained the same. The students' emotional response directed their attention to understanding why their "houses" could not be protected if the ice caps continued to melt and the sea levels rose. The students deliberated about how the landscape and economic resources would affect their ability to survive in the created scenarios. The experience brought several key ideas to life, from understanding causal factors that are distant in time or space from their effects, to the necessity of "preparedness" among inhabitants of coastal communities and the ways in which ocean rising would affect communities differently.

The maquette experience was followed up with various other cases of impact. Kottie showed them photographs of the devastation wrought by Hurricane Sandy in their own neighborhood and other locations. She also brought them on walks to survey actual scenes of destruction. Students read books on the impact of climate change, as well as watched a BrainPOP movie on global warming and its effects. As they studied impacts in communities far away as well as their own, students wondered: *what causes weather, how do we impact it, and how does it impact us?* As the students began to digest the causes and consequences of climate change across the cases they studied, key concepts like global warming, greenhouse effect, pollution, the Keeling Curve, and others began to make sense as relevant features of each case, and clear trends across cases.

3. Understanding real contexts

The maquettes illuminated the confluence of factors that shape the differential impact of ocean rising in various communities, preparing the students to compare real communities next. Kottie's students communicated with their South African ePals through blog entries that began as carefully crafted introductions that scrupulously adhered to the guidelines that the teachers provided in an effort to ease their students into the task. Without exception, the introductions were template-like: name, age, family, interests, food, and questions. As the students became increasingly comfortable with one another and more confident about their ability to communicate with peers halfway around the world, Kottie invited the children to share their understanding of the causes and impacts of global warming in the two different

locations. The blog exchanges were opportunities for her students to develop the habit of comparing the impact of the same phenomenon in different locations. For Kottie, "it's so important to bring a global perspective to it because it's not something we can solve on our own. There are only 22 of them, how much difference are they going to make worldwide? They know it doesn't give them enough power. When I start talking to them about what's happening globally, in other classrooms, not just in the US, they start to realize that now they are part of something bigger than themselves, and they feel they have power now, not doing something on their own, but part of something bigger than themselves. Any authentic teaching of global problems needs that perspective." Her students realized that they were not alone in their endeavor to combat global warming.

Her students also learned to recognize how global warming was neither "a myth", nor an event in the far future. Rather, its devastating effects were actually happening now. One student shared how she used to think that global warming would affect only certain people, and how interacting with her ePal made her realize that it was a global rather than localized issue. The students also learned how the impact of global warming was differently framed in each context. For instance, while the rising sea levels were seen as a threat to communities living along the coastline and Hudson River in New York, it was a big concern in Cape Town because tourism – an important source of revenue for the city – was affected. By deliberately juxtaposing the two locales, Kottie was able to demonstrate how context was important in understanding responses to global warming.

By connecting American students with those in South Africa, Kottie's unit helped them understand how context shapes the way we think. As the students learned more about one another through their blog interactions, they began to realize how their respective contexts inclined them to propose different mitigation methods. For instance, although both classes presented similar mitigation measures (e.g., riding bikes to school), Kottie's students expressed surprise at some of their ePals' proposals, such as growing bamboo which produce 30 % more oxygen than trees. They later came to understand how their ePals' more comprehensive grasp of mitigation methods was unsurprising given how climate change in South Africa was framed as one of the greatest threats to the country's development goals, triggering governmental responses to climate change as early as 2004, and spurring local businesses and citizen interest groups to start movements toward sustainable living.

Making Informed Decisions

As her students came to understand how climate change could lead to changes that were often far away from the initial emissions, and how often the causes and consequences of climate change were intertwined, Kottie shifted the conversation to mitigation: what could they do about mitigating climate change *now*? The challenge to students was clear: *what can young people like themselves do to effectively make a difference?* Kottie's students considered and proposed solutions that they could feasibly put into action: being less wasteful so that they needed to buy fewer products; presenting a persuasive case for why their parents should purchase hybrid vehicles;

looking for opportunities to speak to their family and friends about the impact of climate change, and inspiring them to participate in mitigation activities. Each action was carefully considered in light of how it directly slowed down climate change. For instance, Jessica, Shane, Kelly and Dan proposed how using less electricity helped because "power plants put a lot of carbon dioxide in the air when they burn coal, oil, or gas to make power", and how growing plants slowed down climate change because "plants absorbed the carbon dioxide in the air. The bigger the plant, the more carbon dioxide it takes in!"

Additionally, Kottie's students also worked in groups to discuss their ideas for mitigation, and worked towards a consensus about one idea that they felt they could reasonably commit to taking real action on. For instance, one group decided that they would commit to using less electricity by turning off the lights and powering down devices when they were not in use. The group also created an animated video (http://staff.socsdblogs.org/christieblick/climate-stewards/) to invite viewers to join them in taking action against climate change.

As a class, Kottie's students also learned that by disseminating what they'd learned through oral presentations and written articles, they could reach a wider audience. They helped Kottie write an article that was published on the National Oceanic and Atmospheric Administration's website (http://oceanservice.noaa.gov/education/climate-stewards/talking-about.html), and also requested to present information about climate change and mitigation methods at a school-wide assembly.

Signature Pedagogies Revisited: Deepening Instructional Tropes in Global Education

In what ways do the two units described illustrate foundational principles of signature pedagogies? How can a signature pedagogies approach yield the meaningful learning that we, today's global educators, are after? Studying world regions and comparing cultures or civilizations are common *tropes* or *motifs* in global education teachers' instructional repertoire. Preparing information-rich country reports, comparison charts, posters and presentations are ubiquitous activities in the global education classroom. A signature pedagogies approach invites teachers to reframe these common practices along six core principles so that they can effectively nurture students' global competence in ways that are deep, relevant and long lasting.

Clear Global Competence Focus

Sara and Kottie invite students to understand and act on issues of visible global significance –e.g., malaria, deforestation, climate change and ocean rising. These real, contemporary issues awaken students' interest and sense of themselves as current, not only "future", global citizens. In both cases, teachers' specific inquiry

questions set the stage for depth over coverage. Students do not "travel to Peru" to hang around and "discover what is there." Instead, they must make sense of the conflict between a powerful oil company and multiple local stakeholders in the Peruvian Amazon. They contact peers in South Africa to share ideas about climate impact in their two cities. Their goal is not merely to gather information about each country but to understand a complex issue in rich and compelling ways. To meet this goal, students in both cases learn to establish the significance of the issues, seek out sources from other cultures (e.g., news or ePals' blogs). They draw on such sources to make sense of the distant place, stakeholders' experiences or climate impacts. They share their analyses and conclusions in class and to multiple audiences. Students in both cases begin to learn to take perspective and action. In both cases, too, learning experiences are designed to create multiple opportunities for global competence development.

Strong Disciplinary Foundation

Both cases invited students to engage, apply and *think with* disciplinary concepts and modes of thinking in developmentally appropriate ways. Sara's students use geography as a lens to visualize the Earth, understand "place", and explore the dynamic interaction of physical environment, the economy, and culture as they examine how regional landscapes and natural resources shape people's experiences. Kottie's students in turn become fluent in climate science, practicing essential modes of thinking such as drawing on empirical evidence to argue that global warming is not a "myth", and modeling complex causal systems. In the area of information and communication technologies, students develop critical sourcing and respectful communication skills as they learn to navigate news outlets in Peru or communicate with ePals in South Africa. In each case, students begin to develop the habit of drawing on disciplinary expertise not as a means to "do well in school" but as a lens through which to make sense of the world. A fundamental reframing of the purpose of disciplinary instruction is at play in a signature pedagogies approach.

Attentive to Learning Demands

Signature pedagogies are designed to address global competence learning demands. For instance, both teachers anticipate that students will exhibit stereotypes about people in the developing world. They make students' beliefs visible early in each unit and design learning experiences to target and transform these. Sara invites students to walk around and reflect on their reactions to Lima's banking district where skyscrapers challenge students' oversimplified ideas of rural Latin America.

Similarly, Kottie invited students like Richard in our opening vignette to draw their ePals before meeting them on Skype. Attending to learning demands, these teachers use cognitive dissonance to challenge their students to revise their social stereotypes. Additionally, Kottie anticipates that learning about climate change will require that her young students learn to manage fear and other complex emotions. Climate change can feel overwhelming even to adults, she explains. Yet she purposefully concludes her unit by empowering children to propose solutions and deciding on actions they can take themselves in the present. Further attending to learning demands, Kottie uses a concrete and interactive 3D model of coastal flooding that enables her students to begin to understand complex dynamics in accessible ways. Specific learning demands such as the distance in time and space between causes and events are addressed through richly concrete means.

A Case-Based Core

Fundamentally case-based, Sara and Kottie's units examine big and complex ideas in the context of specific local cases. In the "travel" and "comparisons" signature pedagogies above, concrete, multidimensional and "real" cases make complex global issues accessible and manageable. Because they are framed as problems that call for explanation and solutions, this case-centered approach invites students to go beyond collecting and summarizing information in a traditional "country report" or "poster". Instead, cases provide parameters for students to apply or *think with* the information they obtain in order to explain the roots of the issue, produce thick descriptions of a local ecosystem and its people, or propose locally-relevant solutions.

Spiraling Presence

Sara's and Kottie's units illustrate "travel" and "comparisons" signature pedagogies in the elementary school context. Multiple opportunities to experience quality travel and cross-case comparisons over time promises to instill in students not only the capacity to investigate a place and take perspective but also an *inclination* to doing so over time—to develop a habit of informed travel or leveraging comparisons. Signature pedagogies as here outlined can contribute to nurturing a global *disposition* by inviting students to "travel" often in a year or across educational levels to gain a deep sense of a place, its people, its potential, and its challenges. Students who encounter opportunities for well-scaffolded "travel" and purposeful "comparisons" like the ones here described are likely to become "better global expeditioners" over time.

Adaptive Practice

A final principle that guides our analysis of the cases above is the adaptive nature of a signature pedagogy. A pedagogy of travel or one of purposeful comparisons does not embody a fixed set of steps to be followed nor an established curriculum. Rather, each signature pedagogy is enriched by further inquiry. Teachers adapt their teaching designs in response to emerging global trends, new digital tools, or careful reflection about learning. A signature pedagogies approach to global education embraces the view of teachers as professional inquirers of their practice.

In sum, our exploration of exemplary global education teachers' practice so far has enabled us to identify, analyze, and illustrate two signature pedagogies that can directly inform instructional designs geared to nurturing global competence. The six foundational criteria proposed can guide teachers in their efforts to nurture student learning that is deep, relevant and long lasting. Teachers may ask: *Does my unit or project have a clear global competence focus? Is it grounded in relevant disciplines, nurturing application of big ideas and modes of thinking that characterize the domain? Can I anticipate the learning demands that this unit will present and plan accordingly? Can I identify particular cases and locations in the world that provide a rich and accessible representation of the particular issues I am interested in exploring with my students? Will there be enough opportunities throughout the year for my students to "travel" or "compare cases" so that they can develop a disposition toward deep engagement in the world? How could I adapt or improve my design vis-à-vis emerging global phenomena, or my experience of teaching and learning for global competence?* Clearly the travel and comparisons pedagogies here proposed are not the sole signature moves in quality global education. Other tropes can be envisioned such as a "social entrepreneurship" or a "global convention" pedagogy. Nonetheless the signature pedagogies outlined so far represent powerful examples of how quality teaching for global competence can be embodied in holistic and culturally relevant narratives (traveling, comparing cases) that give meaning and direction to the teaching and learning experience.

To Conclude: Added Value and a Note on Teacher Expertise

In this chapter we proposed that preparing our youth for the contemporary world requires that we develop an informed position toward four fundamental points. First, we must be clear about the kind of learning we seek. We argued that that global competence can be seen as the capacity and disposition to understand and act on issues of global significance. We made the case for a holistic articulation of such capacities, calling for learning that puts a premium on deep, relevant and long-lasting learning. Second, we proposed signature pedagogies as a promising approach to characterize the kind of instruction that effectively nurtures deep and relevant global learning. Drawing on our examination of award-winning master, teachers we

articulated two signature pedagogies – "a pedagogy of travel" and one of "purposeful cross-case comparisons" – as well as six principles on which they stand. We then illustrated each signature pedagogy with a detailed account of units taught in two public school elementary classrooms and applied the stated principles to each case. We conclude this chapter by turning to the potential contributions of a signature pedagogies approach to the field of global education and its implications for teacher expertise.

The quality of global competence instructional designs pivots on teachers' assumptions about the content they teach, how learning happens, who learners are, and the purpose they assign to their educational efforts. Responding to this, a signature pedagogies approach to global education may contribute to the field in at least five ways:

- It commits teachers to nurturing deep, relevant, and long-lasting learning that goes beyond the acquisition and reorganization of information.
- It attends to the learning demands associated with global competence and addresses them proactively.
- It connects to well–known instructional tropes or motifs (writing a country report or comparing civilizations) that are already ubiquitous in K12 education and invites teachers to connect and then transform or deepen their practice.
- It echoes culturally relevant practices, such as traveling or comparing places, thus enhancing the likelihood that students will recognize opportunities to use what they have learned outside school.
- It positions students as inquirers able to explore a topic or place beyond their teachers' own knowledge base, and invites teachers to serve as learning coaches or travel companions.
- It integrates students' learning experiences, moving beyond a "collection of loose activities" into a holistic learning journey in which students participate actively.
- It views teachers as professionals able to make informed judgments about their instruction and to respond and adapt to emerging events, new technologies, or observations on student learning.

What do teachers need to know and be able to do in order to design quality instruction of the kind we see in Sara and Kottie's classrooms? How can we reframe teachers' expertise in order to capture the multiple forms of expertise that inform quality professional practice in global education? What do we learn about teacher expertise that may inform the preparation of current and future teachers to prepare our youth for the world? While an extensive treatment of these questions exceeds the scope of this chapter, it is worth pointing out that our preliminary analysis suggests at least four distinct forms of expertise embodied in these teachers' practice: a flexible understanding of the disciplines they teach reinterpreted in global terms; an understanding of effective general instructional practices; an understanding of their students, their interests as well as the learning demands they confront; and last but not least, an understanding of the world in the form of informal, often experiential, expertise.

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Veronica Boix Mansilla is a Principal Investigator and Steering Committee member at Project Zero, Harvard Graduate School of Education, where she leads the IdGlobal Project and chairs the Future of Learning Institute. With a background in cognitive science, human development and education, she examines how to prepare our youth for a world of increasing complexity and interdependence. Her research focuses on three main areas. She studies (a) global competence as it develops among learners and teachers in various world regions; (b) quality interdisciplinary research and education among experts, teachers and youth; and (c) quality teaching and learning in disciplines (history, biology, the arts) as lenses through which to understand the world.

Flossie SG Chua Flossie's work focuses on how we might prepare young people to live, work and play in our complex and dynamic contemporary world. She is currently a postdoctoral fellow in education as well as a research and project manager at Project Zero-Harvard University, and works on multiple projects in the USA as well as different parts of the world. Her work involves projects that explore and document emerging practices of progressive pedagogies focused on twenty-first century learning and the shared leadership structures in schools that support it, as well as collaborations that study and design structures and pedagogies that support young people to grapple productively and insightfully with complexity and ambiguity. In addition, she is the interdisciplinary specialist with ART21 Educators, a nonprofit designed to support K-12 teachers to bring contemporary art, artists, and themes into classroom teaching and learning, and broaden their curricular focus to include inquiry into contemporary issues and questions that demand cross-curricular knowledge and ways of thinking through contemporary art. Flossie is also an Instructor in Education at the Harvard Graduate School of Education.