Chapter 5
A Professional Perspective and Global Education

As described earlier, a professional perspective recognizes the importance of using expert knowledge to guide educational practice. There are two implications of this perspective for the development of a program of global education, the first is the need to provide teachers access to extant expert knowledge, helping them develop as professionals, for example engaging teachers in the study of the various intellectual traditions that undergird global education, or increasing their knowledge of climate change, and examining the implications of this knowledge for practice. The second implication is that teachers themselves should contribute to develop expert knowledge in global education, something they could do as they engage in the practice of global education.

Curriculum is not self-executing. A quality program of global education will require teachers with the expertise to teach that curriculum. A recent survey of a nationally representative sample of science teachers in the United States conducted by the National Center for Science Education revealed that whereas three-quarters of the teachers address climate change in their classes, only half of them to do in ways that are aligned with the current scientific consensus. When asked to rate their own content knowledge with respect to climate change, ecology, modern genetics, weather forecasting, and health and nutrition, 17% of the teachers report that they know less about this topic that most other high school teachers, and 31% report the same for weather forecasting models. Only 28% of the teachers report that their knowledge of climate change is very good or exceptional, compared to 45% who report this level of knowledge for ecology or 44% for genetics or 48% for health and nutrition (Plutzer et al. 2016, p. 19). When asked to select a series of possible topics to be covered to teach a unit on greenhouse gases and recent global warming, a topic which most teachers reported they taught and one on which the basic science on how these gases trap heat is a century old and noncontroversial, only some of the teachers selected as high priority topics which are essential to understand greenhouse gases: 74% for carbon dioxide trapping, 59% use of coal and oil by utility companies, 56% emissions from industry, 55% destruction of forests; in contrast, a number of teachers selected as high priority topics which are not relevant to understanding greenhouse gases: 42% depletion of ozone in the upper atmosphere, 24% incoming

shortwave and outgoing longwave energy, 23% use of chemicals as pesticides, 21% people heating and cooking in their homes, 14% use of aerosol spray cans, and 4% launching rockets into space (Ibid, p. 21). The same survey reveals that many teachers are unaware of the scientific consensus attributing global warming to human activities, only 39% correctly identify that over 80% of climate scientists think that global warming is caused mostly by human activities, and only 21% of the teachers admit that they don't know the answer, the remaining 40% provide an incorrect answer (Ibid, p. 22). Teachers report that they have received very limited training on climate change, only 43% had any formal instruction on the subject at the college level, and only 10% completed a course on the subject (Ibid, p. 23). Among those without education on climate change during initial preparation, only 18% received any professional development on the subject. Teachers recognize this topic as a high need for preparation, and 67% report that they would be interested in professional development opportunities on the subject (Ibid, p. 24).

5.1   Helping Teachers Gain Knowledge and Skills in Global Education

Studies on deeper learning and twenty-first-century skills emphasize the importance of building teacher capacity to translate twenty-first-century curriculum into effective instruction as a significant challenge as well as a priority. The National Research Council Report calls for significant changes in teacher preparation:

> Current systems of teacher preparation and professional development will require major changes if they are to support teaching that encourages deeper learning and the development of transferable competencies. Changes will need to be made not only in conceptions of what constitutes effective professional practice but also in the purposes, structure, and organization of preservice and professional learning opportunities. (Pellegrino and Hilton 2012, p. 186)

Similarly, the US National Commission on social, emotional and academic development underscores the urgency of the professional development challenge, calling for the redesign of educator preparation programs, collaborative decision-making in schools and districts; the prioritization of social, emotional, and cognitive skills and competencies in recruitment, hiring, orientation, and professional learning; incentivizing innovation in teacher preparation programs; redesigning licensure and accreditation; ensuring that induction programs for new teachers support these domains; and restructured adult workforce systems (Aspen Institute 2019, pp. 50–53).

Teachers need to not only develop knowledge and skills in global education, but also develop shared understandings with colleagues within their schools to be able to collaborate in the design and implementation of a coherent and rigorous curriculum which extends across grades and subjects beyond a few lessons on global topics here and there. A study of teachers in a network of schools in Denmark which were

committed to advancing global education found important variability in understandings of what global education was and in how it related to various subjects across teachers in these schools (Nilsson 2015). These various conceptualizations include education that is global, including understanding interconnectedness and interdependency, the process of globalization, and themes like climate change and migration. The second conceptualization of global education encompassed understanding and respecting other cultures and people and gaining competencies to live in a global world. Finally, a third conceptualization described global education as teacher and school work, emphasizing the need for a coordinated approach and sharing resources at the school, as well as the different challenges of integrating global education in various subjects (Nilsson 2015, p. 31).

In a study of curriculum reforms in Chile, China, India, Mexico, Singapore, and the United States, we found that as more ambitious goals were embraced by states and countries, the topic of teacher education and professional development received greater priority (Reimers and Chung 2016). A comparative study of programs of teacher professional development that focused on supporting teachers in developing the capacities to educate the whole child in Chile, China, Colombia, India, Mexico, Singapore, and the United States, identified that they shared the following characteristics:

1. These professional development programs reflect a conception of adult learning that sees it as socially situated and responding to the current needs of teachers for learning.
2. This form of professional development involves sustained and extensive opportunities for teachers to build capacities, often extending an entire school year, or spanning across multiple school years, that contrasts with the more prevalent opportunities of short courses out of the school.
3. The modalities of professional development examined in this book are varied. They include independent study of new material, discussion with peers and others, individual or group coaching, demonstrations of new practices, independent research projects, and opportunities for reflection.
4. The curriculum of the programs examined covers a blend of capacities, from a broad focus on helping students develop capacities to a highly granular identification of particular pedagogies and instructional practices that can help students gain those skills.
5. The curriculum of these various programs reflects a view of learning which includes cognitive skills, in interaction with dispositions and socio-emotional skills.
6. Professional development includes exposure to visible routines, protocols and instructional practices, where teachers see in practice new forms of instruction or assessment.
7. These programs rely on a mix of opportunities for learning situated in the context of the schools where teachers work.

8. To support the intensive and sustained activities of professional development that these various programs advance, the organizations in charge build a range of partnerships with institutions outside of schools that contribute various types of resources.

9. These programs see teacher practice as situated in specific organizations and social contexts, and in general adopt a whole-school approach, rather than helping individual teachers increase their capacity.

10. The question of measurement. These programs all develop capacities among teachers to advance pedagogies with the goal of developing competencies that are not formally assessed in the school or school system. In this sense, the programs challenge the notion that "What gets measured gets done," and suggest that teachers can make decisions about what and how to teach that can transcend the formal accountability structures in the school.

11. The organizations that support these various programs all model a learning orientation. They approach schools with an inquiry mindset, engage in dialogue with school staff about their learning goals, use various forms of feedback to assess whether their work is achieving the intended results, and implement measures to course correct and generate continuous improvement in their work (Reimers 2018).

These features of high-quality professional development programs can be replicated in programs to increase the level of expertise of teachers for global education. Some of these principles were reflected in a book I wrote, with my graduate students, to help disseminate the approach to global education curriculum we had followed in developing the World Course. When the book *Empowering Global Citizens* was published in 2016 I began to receive feedback that underscored the need to support the development of teacher capacities to design and teach this kind of curriculum, aligned with an ambitious framework of competencies, in turn, aligned to the UN Sustainable Development Goals.

To address this need I developed, in collaboration with 36 of my graduate students, a resource book which included a protocol to establish a school-wide process of global education, that explained how to develop curriculum aligned with the UN Sustainable Development Goals, and that illustrated with a small number of lessons what this curriculum could look like in practice (Reimers et al. 2017). The proposed thirteen-step process recognized the importance of creating a process specific to the school which would help teams of teachers collaborate in developing a shared vision for global education, develop a curriculum prototype, and learn from experience. The protocol also suggested that schools sought to join networks with other schools following a similar process, as a way to accelerate the learning opportunities resulting from their shared experience in attempting similar goals. The steps proposed in this process were:

1. Establish a leadership team. This team will form the guiding coalition that will design and manage the implementation of the whole-school global citizenship education strategy.

2. Develop a long-term vision. What are the long-term outcomes for students, for the school and for the communities that these graduates will influence that inspire this effort?

3. Develop a framework of knowledge, skills, and dispositions for graduates of the school that is aligned with the long-term vision.

4. Audit existing curriculum in the school in light of the proposed long-term vision and global competencies framework.

5. Design a prototype to better align the existing curriculum to the global competencies framework in step 3 (the sixty lessons presented in this book can serve as an initial prototype, or as a sacrificial proposal that leads to the prototype a particular school adopts).

6. Communicate vision, framework and prototype to the extended community in the school, seek feedback, and iterate.

7. Decide on a revised prototype to be implemented and develop an implementation plan to execute the global education prototype.

8. Identify resources necessary and available to implement the global education prototype.

9. Develop a framework to monitor implementation of the prototype and obtain formative feedback.

10. Develop a communication strategy to build and maintain support from key stakeholders.

11. Develop a professional development strategy.

12. Execute the prototype with oversight and support of the leadership team.

13. Evaluate the execution of the prototype, adjust as necessary, and go back to step 4.

This process sees the task of creating a global education curriculum as an opportunity for professional development, based in the school, and the collaboration among teachers in developing, teaching and evaluating this curriculum as a means to build their own expertise in doing so, as a result of experimentation. In effect, the process is designed to build the capacities of teachers to advance global education as they embark on designing and implementing a school-wide program of global education. The approach is built on the premise that all learning requires an opportunity to practice, and that it is the reflection on that practice that helps develop new knowledge and skills. Essentially, teaching any curriculum is based on two hypotheses: If we teach A students will learn B, and if students learn B outcomes C, D, and E will be achieved for them and for their communities. Most teachers do not formally test their hypotheses, much less do so publicly. The process I devised is one that allows teachers to work within a transparent framework that helps them make the hypotheses they are testing visible and to learn from that process. As teachers do this work in collaboration with their colleagues in a school-wide process, this helps build shared knowledge about what works well, in other words, it builds shared professional expertise.

As schools join others in improvement networks, these networks of schools become a means to augment the collective capacity of the participating schools

and also their access to expertise resident in the network. This, in turn, augments the capacity to test the hypotheses underlying any curriculum. This is what Tony Bryk and his colleagues have called "improvement networks," adapting to the field of education well-established principles of the field of improvement science (Bryk et al. 2015).

I have found that engaging teachers in collaborative work discussing the relationship between curriculum, pedagogy and big global challenges such as how to build a world that is inclusive and sustainable resonates with deep values for many teachers. Many teachers joined the profession in order to make a contribution to society and have a lasting impact on their students' development. This is shown by Table 5.1 which presents data from an OECD survey administered to teachers which asked what were the reasons teachers joined the profession. Most teachers across the world reply that their motives included influencing the development of children, benefit the disadvantaged and contributing to society. Engaging teachers in the design of curriculum to "improve the world" taps into this powerful intrinsic motivation of many teachers.

5.2   Engaging Teachers as Creators of Expert Knowledge in Global Education

The process described above, of school-based innovation with the support of a school network, is one that simultaneously recognizes teachers as experts of the process of curricular innovation, while engaging them in a learning community that further develops that expertise and enables them to create knowledge based on practice.

In *The Reflective Practitioner*, a classic book on professional practice and education, Donald Schon argues that the ability to reflect on the knowledge which guides practice is essential to the improvement of professional practice (Schon 1983). A reflective practitioner "turns thought back on action and on the knowing which is implicit in action." While trying to make sense of an action, a reflective practitioner "reflects on the understandings which have been explicit in his action, understandings which he surfaces, criticizes, restructures, and embodies in further action" (Schon 1983). Practitioners often guide their practice with problem-solving knowledge that goes beyond the mechanic application of principles or conclusions drawn from basic science. Schon also argues that the failure to comprehend this all too often leads institutions involved in professional education to base the curriculum on a paradigm which assumes that professional practice is simply the application of the general principles drawn from basic research in the field to problems of practice. I share Schon's view that such a paradigm is limited and insufficient to fully support effective professional practice, particularly when professionals encounter "messy problems."

This epistemological stance recognizes that when practitioners solve problems they learn from the consequences of their actions, and the knowledge they gain makes them better at solving problems in the future, hence better professionals.

Table 5.1   Motivation to join the profession, by teachers' teaching experience. *Results based on responses of lower secondary teachers*

	Teaching allowed me to influence the development of children and young people		Teaching allowed me to benefit the socially disadvantaged		Teaching allowed me to provide a contribution to society	
	Total		Total		Total	
	%	S.E.	%	S.E.	%	S.E.
Alberta (Canada)	98.8	(0.4)	77.8	(2.2)	94.7	(1.1)
Australia	96.0	(0.4)	79.8	(0.7)	92.6	(0.5)
Austria	95.6	(0.3)	75.3	(0.7)	87.1	(0.6)
Belgium	95.5	(0.3)	70.3	(0.8)	86.3	(0.6)
– *Flemish Comm.* (*Belgium*)	96.7	(0.3)	77.0	(1.0)	91.9	(0.5)
Brazil	95.4	(0.5)	93.7	(0.6)	97.2	(0.3)
Bulgaria	94.5	(0.6)	64.5	(1.0)	92.3	(0.6)
CABA (Argentina)	86.2	(1.0)	74.6	(1.1)	91.5	(0.8)
Chile	96.7	(0.4)	94.4	(0.7)	97.8	(0.4)
Colombia	98.2	(0.4)	95.8	(0.7)	98.8	(0.3)
Croatia	95.3	(0.4)	79.6	(0.7)	91.3	(0.5)
Cyprus	94.7	(0.6)	86.4	(1.1)	94.6	(0.7)
Czech Republic	92.6	(0.5)	67.9	(0.9)	89.0	(0.6)
Denmark	94.2	(0.6)	64.1	(1.2)	75.7	(1.1)
England (UK)	97.2	(0.4)	81.4	(1.2)	92.5	(0.6)
Estonia	87.5	(0.8)	62.3	(1.2)	81.8	(0.8)
Finland	82.7	(0.8)	59.5	(1.0)	65.6	(0.9)
France	92.1	(0.5)	70.3	(0.9)	83.1	(0.7)
Georgia	97.0	(0.4)	85.4	(1.0)	96.4	(0.4)
Hungary	92.7	(0.5)	69.2	(1.3)	84.4	(0.9)
Iceland	78.7	(1.2)	57.4	(1.4)	80.2	(1.2)
Israel	96.7	(0.4)	91.0	(0.8)	96.0	(0.4)
Italy	78.5	(0.7)	85.8	(0.6)	93.8	(0.4)
Japan	89.0	(0.6)	66.3	(0.9)	81.6	(0.7)
Kazakhstan	93.9	(0.4)	78.0	(0.7)	92.5	(0.5)
Korea	88.4	(0.6)	72.7	(0.8)	79.7	(0.9)
Latvia	93.2	(0.6)	80.0	(1.0)	92.6	(0.5)
Lithuania	91.4	(0.4)	71.5	(0.9)	85.5	(0.6)
Malta	96.3	(0.5)	84.2	(0.9)	92.8	(0.8)
Mexico	98.8	(0.2)	93.9	(0.5)	98.2	(0.3)

Table 5.1 (continued)

	Teaching allowed me to influence the development of children and young people		Teaching allowed me to benefit the socially disadvantaged		Teaching allowed me to provide a contribution to society	
	Total		Total		Total	
	%	S.E.	%	S.E.	%	S.E.
Netherlands	86.1	(1.4)	41.6	(2.3)	80.1	(1.5)
New Zealand	95.8	(0.5)	80.4	(1.2)	92.5	(0.6)
Norway	88.9	(0.5)	61.2	(1.0)	79.1	(0.7)
Portugal	94.0	(0.4)	90.2	(0.4)	93.2	(0.4)
Romania	98.1	(0.2)	89.0	(0.7)	96.0	(0.4)
Russia	88.1	(0.7)	80.7	(0.9)	90.9	(0.7)
Saudi Arabia	94.0	(0.6)	90.6	(0.7)	92.9	(0.6)
Shanghai (China)	93.3	(0.4)	80.7	(0.8)	92.8	(0.5)
Singapore	97.8	(0.3)	88.4	(0.7)	95.4	(0.4)
Slovak Republic	93.2	(0.5)	61.6	(1.0)	92.3	(0.5)
Slovenia	88.8	(0.8)	60.5	(1.4)	86.8	(0.8)
South Africa	98.1	(0.4)	88.6	(1.1)	97.1	(0.5)
Spain	88.6	(0.6)	79.4	(0.7)	90.5	(0.5)
Sweden	93.5	(0.6)	77.7	(0.9)	86.8	(0.7)
Chinese Taipei	94.0	(0.4)	87.9	(0.6)	94.2	(0.4)
Turkey	97.8	(0.3)	91.1	(0.4)	98.3	(0.2)
United Arab Emirates	97.5	(0.2)	90.5	(0.4)	97.2	(0.2)
United States	98.7	(0.3)	83.8	(1.0)	96.5	(0.6)
Vietnam	98.8	(0.2)	95.2	(0.5)	98.7	(0.2)
OECD average-31	92.3	(0.1)	74.7	(0.2)	88.2	(0.1)
EU total-23	90.7	(0.2)	75.5	(0.3)	88.7	(0.2)
TALIS average-48	93.2	(0.1)	78.2	(0.1)	90.4	(0.1)

Source OECD (2019, Table I.4.1)

Solving problems, especially complex, messy, adaptive, or divergent problems, thus requires much more than mechanically applying lessons drawn from research to new situations, but involves forms of creation, design of solutions, and experimentation. While good professionals learn from these private experiments that constitute their practice, this knowledge is often accessible only to the practitioner, because it is not processed in a way that allows others to learn from it. This is called "tacit" knowledge.

Constructing opportunities to learn from such knowledge as in the thirteen-step process outlined earlier, transforms tacit knowledge into public knowledge and is critical to the development of global education as a professional practice.

Some of the most fundamental critiques to university-based professional education concern whether the curriculum provides sufficient access to knowledge essential for effective practice, and whether such university-based professional education remains too theoretical and disconnected from the fields of practice for which it is preparing individuals. These critiques resonate with the dissociation I described at the outset of this book between the scholarly literature on global education and the practice-based literature.

Donald Schon in *The Reflective Practitioner* argues that the classical model that assumes that practice is the mere application of foundational principles in applied contexts is responsible for this disconnect. It is not uncommon to hear voices from various fields of practice state that the deficiencies of professional preparation require that novices are taught what they need to know in the first years of professional practice. This challenge is compounded as technological change has increased the demands for professional practice in most fields, making clear that initial professional preparation is but one step in a long trajectory of development, that should extend throughout the careers of most professionals. Life-long professional preparation is recognized as essential to support people in their careers, especially as they take on new assignments for which their previous preparation and experience does not sufficiently prepare them.

Using the book "Empowering Students to Improve the World in Sixty Lessons" as a starting point, I have worked with networks of teachers in developing global education curriculum, such as the Rete Dialogue, a network of teachers in Italy committed to democratic education, in translating and adapting this book to the Italian context. Over a year, this network of teachers translated the original book, taught these lessons, and then modified them, as part of a learning community in which they collaborated in this process across various regions in the country. The result of this process was a revised curriculum, reflecting the learning these teachers had drawn from their practice in experimenting with the original lessons (Reimers et al. 2018a).

Similarly, working with a group of fifty teacher leaders supported by the National Education Association Foundation in the United States, we developed a curriculum, inspired by "Empowering Students to Improve the World in Sixty Lessons" in which teams of teachers from all US states collaboratively designed grade-specific lessons aligned with the UN Sustainable Development Goals, taught them in their respective schools, and then improved based on their various experiences teaching them. This year-long collaborative project, relying on the use of communication technology, led to two publications developed with two different groups of teachers which they then used to further advance global education in their schools (Reimers et al. 2018b, 2019).

While this approach to professional development based on peer learning and networking is capacious and valued by teachers, it is relatively rare—only 44% of the teachers reported participating in it in the OECD study of teachers. This is low in comparison to 70% of teachers who report participating in traditional forms of professional development, such as courses or seminars (OECD 2019, p. 152).

Similar research-practice collaborative networks have been recommended to integrate cognitive and socio-emotional learning:

> Create research-practice partnerships to provide useful, actionable information for the field. Develop meaningful research-practice partnerships that engage researchers, school and program leaders, teachers and staff, policymakers and families and youth themselves in collaborative inquiry and learning. These multi-disciplinary teams should include people at various levels of the system and with diverse perspectives; focus on critical and immediate problems of practice that are important locally and have larger implications for the field; and use iterative inquiry cycles and collaborative data analysis to learn together and test out proposed changes. These findings from this research should be intentionally crafted to be relevant and accessible to educators and policymakers, such as through field-facing summaries and video. (Aspen Institute 2019, p. 63)

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