Chapter 4 A Psychological Perspective and Global Education



The knowledge generated by the science of how people learn and develop can inform the design of global education curricula and instruction. A synthesis of the evidence on twenty-first-century skills prepared by an expert group convened by the National Research Council in the United States grouped those skills, building on Bloom's taxonomy, in three broad domains of competence: cognitive, intrapersonal, and interpersonal. Cognitive competencies include cognitive processing and strategies, knowledge and creativity; intrapersonal competencies include intellectual openness, work ethic, and conscientiousness; interpersonal competencies include teamwork, collaboration, and leadership (Pellegrino and Hilton 2012). The review shows that there is a larger and more robust body of scientific evidence supporting the importance of cognitive competencies for long term outcomes than for the inter- and intrapersonal competencies. Among intra- and interpersonal competencies, conscientiousness (organization, responsibility, and hard work) are most clearly related to positive educational, career and health outcomes, whereas antisocial behavior is most clearly negatively associated with those outcomes (Pellegrino and Hilton 2012, pp. 4–5). The report also examined "deeper learning" the process that allows a person to transfer what was learned and apply it to a new situation. This includes "content knowledge in a domain and knowledge of how, why, and when to apply this knowledge to answer questions and solve problems" which the report calls twenty-first-century competencies (Ibid, p. 6). Cultivating the full range of twenty-first-century competencies requires additional instructional time and resources than is common and supports the idea of engaging students in projects of longer duration, spanning several weeks, even months.

This report shows how an integrated science curriculum can promote deeper learning in which students gain content knowledge as well as intrapersonal and interpersonal competencies, this is illustrative of the kind of curriculum which could promote deep global competence, this curriculum "combined collaborative, hands-on science inquiry activities with reading text, writing notes and reports, and small group discussions...students exposed to the integrated curriculum demonstrated significantly greater gains on measures of science understanding, science vocabulary, and science writing. At the same time, the students developed the intrapersonal competencies

of oral communication and discourse, as well as the interpersonal competencies of metacognition and positive dispositions towards learning." (Ibid, p. 7). The report draws out recommendations for curriculum and instructional design which reflect the principles uncovered by the science of deeper learning as helpful to developing twenty-first-century skills. They include establishing clear learning goals and a model of how learning develops, coupled with assessment to measure progress toward the goals, beginning in the earliest grades and sustained throughout their careers. The recommendations include also using multiple representations of concepts and tasks, encouraging elaboration, questioning, and explanation, engaging learners in challenging tasks, teaching with examples and cases, activating students' motivation by connecting topics to students' personal experience, and using formative assessment.

The design of the World Course, described earlier, was based on many of those same principles, particularly clear learning goals, integrating cognitive goals with intra- and interpersonal goals, organized in a coherent curricular sequence starting earlier, and with multiple representations of concepts to engage learners in challenging tasks and connecting new content with personal and immediate experiences of learners. Notice how this differs from "sprinkling" a few lessons related to global goals, such as the UN SDGs here and there, without a clear sequence or explicit articulation with the rest of the academic curriculum.

An effective global education curriculum needs good and rigorous design that effectively relates to content as well as to the cross-cutting twenty-first-century skills. For example, the first unit of the World Course in the second grade covers similarities and differences across cultures. The unit covers various related themes: (a) knowledge: diverse cultural perspectives, variations within groups, geography, common values, use of evidence, use of technology; (b) intrapersonal: curiosity about global affairs, and (c) interpersonal: empathy. This unit is to be developed in six activities and twelve lessons over an eight-week period, in this way permitting sustained engagement over an extended period, and permitting students to understand deeply the structure of the concepts taught, to have multiple opportunities to demonstrate understanding and receive feedback. The unit spells out goals and objectives, skills and knowledge, and six activities:

The World Course

Unit 2.1

Topic Similarities and Differences Across Cultures

Theme Diverse cultural perspectives, empathy, variations within cultural groups, curiosity about global affairs, geography, common values, the use of evidence, and the use of technology

Region Any/all, with more emphasis on the countries represented by the children's parents and on the countries in which partner schools are located. It would be helpful if various sections of the same grade covered different countries and attempted to have a representation of various world regions (e.g., Africa, Asia, Europe, and Latin America)

Length Eight weeks (six activities and twelve sessions)

Goals and Objectives

- Learn similarities and differences in how children play in different cultures and understand the limitations of representing an entire culture or country with ideal types or averages, understanding that within every culture, there is variation.
- 2. **Inspire** students to take interest in various cultures, cultural differences, and the ways children live in different cultures. Spark their desire to communicate with children in other countries with the use of modern telecommunication technologies.
- 3. **Act** by describing the games children play in different cultures and sharing those observations with students in other parts of the world.

Skills and Knowledge

- 1. Students will describe the games that they and other children in their school play and then present those descriptions in a poster.
- 2. Students will analyze and compare various games played by children in their school.
- Students will narrate the games they play, produce simple videos and pictures of those games, and share those observations with peers in other countries using Internet-based communication technologies
- 4. Students will analyze reports produced by peers in a school in another country describing the games they play.

Overview

This unit engages students in the analysis of their direct experience with the games they play, and that analysis is then extended to analyses of the games played by their parents and their peers in other countries. The activities involve collecting evidence, using observation skills, studying interviews and documentary sources, elaborating a framework creating categories to analyze games, and presenting analyses to peers and teachers in their school and to peers in other countries. The unit offers an introduction to maps and to countries and students around the world. Students use technology to communicate with peers in other countries.

Activity 2.1.2 What Games Did Our Parents Play When They Were Children?

Activity 2.1.3 Observing Children Play

Activity 2.1.4 Talking about Games with Children in Other Parts of the World

Activity 2.1.5 Understanding Maps

Activity 2.1.6 Learning about Games in Other Countries (Reimers et al. 2016, pp. 54-61).

The same format was followed in designing each of the 350 units comprising the World Course curriculum, all of them sequenced in a progression designed to develop the various cognitive, intra- and interdisciplinary competencies described earlier. The units in each grade were structured in a coherent scope and sequence that engaged students in a year-long project, leading up to a capstone product that demonstrates their understanding. The capstones are: kindergarteners take part in a puppet show performance on understanding difference, first graders create a "Book of Me," second graders educate others, third graders create a business (chocolate), fourth graders create a game about civilizations, fifth graders create an awareness project on SDGs, sixth graders implement an advocacy project about an SDG, seventh graders participate in extended service-learning, and eighth graders create a social enterprise around an SDG. In many cases, the capstone activities build on one another; in fifth

grade, for example, students are asked to create an awareness project to inform others about the SDGs, and in sixth grade, they are then asked to implement an advocacy project about the SDGs.

In the World Course, there is also coherence across grades, each of which focuses on one particular theme as seen below.

The World Course: Kindergarten through Eighth Grade

Kindergarten Our World Is Diverse and Beautiful

First Grade We Are One People with Universal Human Needs

Second Grade Ourselves and Others

Third Grade Understanding Global Interdependence through Entrepreneurship in

Chocolate Manufacturing

Fourth Grade The Rise (and Fall) of Ancient and Modern Civilizations

Fifth Grade Freedom and the Rights of Individuals: Social Change around the Rights

of Individuals

Sixth Grade How Values and Identities Shape People and Institutions

Seventh Grade Driving Change in Society by Organizing as a Collective and through the

Study of Change Makers

Eight Grade Migration

The World Course: Ninth through Twelfth Grade

High School Semester Course The Environment

High School Semester Course Society and Public Health Course High School Semester Course Global Conflicts and Resolutions

High School Semester Course Development Economics: Growth and Development in Latin

America

High School Semester Course Technology, Innovation, and Globalization (Reimers et al. 2016)

These capstones and thematic foci per grade provide students opportunities to work for an extended time on a problem or problem space, in ways which research suggests are productive to develop twenty-first-century skills. The Synthesis by Pellegrino and Hilton, drawing on two meta-analyses of research on project-based learning identifies six key principles of problem-based learning:

PBL approaches represent learning tasks in the form of rich extended problems that, if carefully designed and implemented, can engage learnings in challenging tasks (problems) while providing guidance and feedback. They can encourage elaboration, questioning, and self-explanation and can prime motivation by presenting problems that are relevant and interesting to the learners. While a variety of different approaches to PBL have been developed, such instruction often follows six key principles:

- 1. Student-centered learning
- 2. Small groups
- 3. Tutor as a facilitator or guide

- 4. Problems first
- 5. The problem is the tool to achieve knowledge and problem-solving skills
- 6. Self-directed learning (Pellegrino and Hilton 2012, p. 166).

Here are additional instructional implications for global education drawn from a recent synthesis of research based on the implications for instruction of the science of learning summarized earlier (Deans for Impact 2015).

1. Develop a well sequenced curriculum with a clear progression which provides the necessary pre-requisites to master new ideas, and map new ideas onto ideas students already know. In the world course we mapped backward from competencies to knowledge, skills, and dispositions, and from those learning outcomes to smaller pedagogical units with partial learning outcomes that would gradually and over time build up the learning outcomes orienting the entire curriculum. We then integrated those smaller pedagogical units into sequences, which progressed with horizontal and vertical coherence—coherence within and between grades. Each unit was coded identifying the competencies it was intended to develop. Once we finished the design of the curriculum in this manner we "audited" the curriculum examining each of the 350 units for opportunities to develop each of the intended knowledge, skills, and dispositions, as presented in the framework, which guided the development of the curriculum. While we did not expect to include opportunities to develop each of the intended competencies in every unit, we did look for multiple, repeated, opportunities to foster such development across the years. This audit helped us identify gaps in the curriculum, where there were very limited opportunities to build a skill, as well as develop a structured sequence, where at any level in the progression we could ascertain that students had the opportunity to gain the pre-requisite knowledge. The sequence of the units progressed from what was known and immediate to the student toward more abstract ideas and concepts. For example, in the second grade, students began describing the games they played (immediate knowledge and interest), they then compared their interests within the classroom. Then they interviewed their parents about the games they played as children, and used these data to discuss changes over time in the games played by children, and variation across families and cultures. Then they engaged with peers in another country, using technology, comparing the games they all played. From this set of immediate observations and analyses, children then studied the similarities and differences in how various children experienced childhood across societies and generations.

This approach to curriculum design builds on what is known about how students learn new ideas, by reference to ideas they know and presenting new information in a graduated way which allows them to transfer information from working memory to long term memory. The design of the curriculum challenged the conventional wisdom that cognitive development progresses through fixed sequences of stages, and instead was designed with appropriate instructional sequences designed to allow the mastery of new concepts.

- 2. Assume students can learn many different things, if well taught. Don't assume they are not "developmentally ready" to understand certain ideas. When we engage students with real world problems, some may assume that there is a developmental readiness for certain topics. When we were developing the World Course we debated with colleagues in a school who had first committed to teaching it issues such as whether second graders could learn about "poverty." Cognitive science establishes that development does not progress through a fixed stages sequence, and that good sequencing of design can support students as they learn about complex topics.
- 3. Develop units and lessons which make explicit why what students are learning is important, we adopted this approach in the development of the world course because it is known that this is one of the ways to facilitate recall of information.
- 4. Provide multiple opportunities for students to demonstrate their understanding and to receive feedback on their emerging understandings. When possible, provide extended opportunities for repeated practice over long periods. One of the established cognitive principles is that practice is essential to learning new content, and that practice extended over time and using multiple forms of practice is more effective to learning.

Design curriculum so it can help students solve problems by teaching different sets of facts at different ages in a logical progression. Create opportunities for students to demonstrate understanding that can provide students with feedback that is specific and clear, focused on the task, and explanatory. This is the role of formative assessment, described in the World Course as follows:

From kindergarten, students not only learn but also are engaged in *demonstrating* their understanding of what they've learned throughout the year. We integrated formative and summative assessments into the course because we believe that global competency and twenty-first-century learning require authentic forms of assessment (Greenstein 2012). More than merely displaying knowledge, students are asked to engage in creating a product, whether that product is a puppet show (kindergarten), a book (first grade), a business plan (third grade), a game (fourth grade), or a social enterprise (eighth grade). Learning is constructed as *cumulative*, with knowledge building on prior experience and understanding. For example, in third grade, students learn to understand global interdependence through participating in creating a social-enterprise project in chocolate manufacturing. The learning objective is to build an entrepreneurial spirit in young children through an understanding of global food chains and the ethics of free trade and child labor using the case of chocolate. The primary geographic focus is on West Africa's chocolate-manufacturing countries. (Reimers et al. 2016, p. lxxiii)

- 5. Facilitate transfer of learning to new situations in or outside of classrooms by ensuring that students have the necessary background knowledge to understand the context of a problem and by presenting multiple examples which can help students understand the underlying structure of the problem they address.
- 6. Activate student motivation by fostering beliefs that ability can be improved through hard work, praising student effort and strategies and encouraging them to set learning goals (improvement rather than competence). Cultivate student intrinsic motivation by working around students' interests. Provide students

opportunities to monitor their own thinking and learning. Foster a sense of inclusion for students of all identities and abilities.

A curriculum can include structured opportunities for reflection in which students make visible how they think about their own learning. There are multiple ways in which a curriculum can foster a sense of inclusion, the most immediate, devising lessons in which students are invited to bring their experience, culture, and identities. In the World Course, for example, diversity is celebrated beginning in kindergarten. The overarching theme of kindergarten is "Our world is diverse and beautiful." Through activities in which students interview their parents—for example about the games parents played as children—or in which parents are invited to share their biographies and experiences in school, the curriculum conveys to all students that they "belong" in the school. Intentionally creating conditions that foster this sense of belonging is not only essential so all students can thrive, it can help all students develop the necessary skills to create those environments in the future.

Similarly valuable guidance to design curriculum and pedagogy can be drawn from scientific knowledge of how to support socio-emotional development. A US National Commission on social, emotional and academic development convened by the Aspen Institute, produced a series of recommendations based on the existing scientific evidence on socio-emotional development. The report recommends organizing instruction in ways which foster the integration between (1) skills and competencies, (2) attitudes, beliefs, and mindsets, and (3) character and values. Skills and competencies include: cognitive, social and interpersonal, and emotional. These develop and are used in interaction with attitudes, beliefs, and mindsets that children have about themselves, others, and their circumstances. They are also developed and used in interaction with character and values (Aspen Institute 2019, p. 15). This report underscores that developing these various competencies is essential not only because doing so is in service of academic learning, but because these outcomes (identity, motivation, character, and values) are important themselves. Drawing on evidence that social, emotional, and cognitive skills can be taught, the report recommends that they are taught explicitly (Ibid, p. 19). The kind of integration between cognitive, social, and emotional instruction which the report calls for will require significant redesign of teaching and learning. Beginning this process in the domain of global education is one way to carve space during the school day to more intentionally engage students in learning in ways that seek this interaction. As already mentioned, the units of the World Course were designed from the outset to address cognitive and socio-emotional skills. Similarly, the learning objectives guide aligned to the UN Sustainable Development Goals explicitly identifies cognitive, social and emotional objectives.

There are additional specialized bodies of research on cognitive and socioemotional development which can support specific elements of a global education curriculum. For example, one of the important goals of global education is to help students develop the capacity for ethical reasoning. Lawrence Kohlberg, a pioneering figure in the study of moral development, expanding on the earlier work of Jean Piaget, established that moral development, which proceeds through a staged process, can be supported by providing students opportunities to discuss moral dilemmas. Kohlberg saw moral development as the result of social interaction and argued that as individuals faced cognitive conflicts at their current stage of moral development this would help them develop to a higher stage of morality (Kohlberg 1984). A global education curriculum can include many lessons which engage students in moral deliberation. In the World Course, for example, students learn about global interdependence in the third grade by studying the process of chocolate manufacturing in eight units: 1. Setting the Stage for the Life of a Chocolate; 2. The Life of a Chocolate and Its History; 3. Let's Make Our Own Chocolate; 4. Understanding the Culture of My Market; 5. Marketing My Chocolate in School; 6. Child Labor; 7. Taking My Chocolate to the Market; and 8. Beyond Chocolate. These units engage them in multiple opportunities for moral deliberation, for example when discussing child labor and fair trade.

One of the purposes of a global education curriculum is to help students value differences across multiple lines of identity, such as race, ethnicity, culture, religion, and nationality and to communicate across those lines of difference. There is a robust body of knowledge from socio-psychological research which can inform sensible design of curriculum and activities aligned with those goals. Research on intergroups relations falls into three approaches. First, social identity theory posits that people sort themselves into "we" and "they" categories, and that this process can engender bias as people extend preferences to their in-groups. Competition for scarce resources and perceived threats turns in-group favoritism to harming competing groups. Second, social categorization is when the use of social categories activates stereotypes and prejudice leading to discrimination. Finally, social dominance theory is where the hierarchical arrangement of racial categories is maintained through various institutions (Richeson and Sommers 2016, pp. 445–447).

An implication of this socio-psychological research showing that it is the use of social categories that leads to discrimination is that curriculum can help students problematize categories, for example challenging notions of a "single story" which reduce members of "out-groups" to a singular identity, and developing a curiosity about all groups that can help understand the multidimensional nature of identity and find common humanity across identity groups. The popular TED talk by writer Chimamanda Ngozi "The danger of the single story" is an example of a resource that can help students reflect upon and begin a conversation about how to think in more nuanced ways about those whom they perceive to be different and about identity (Adichie 2009). Similarly, curriculum can help students reflect on the way in which multiple dimensions define identity and understand the concept of intersectionality (Gold and Grant 1977). Finally, curriculum can help students identify and question racial hierarchies and the mechanisms through which they are perpetuated. For instance, the World Course fifth grade curriculum focuses on social change to advance the rights of individuals, examining the American, French and Haitian revolutions, the abolition of Apartheid in South Africa, as well as the global movement for Universal Human Rights. The seventh-grade curriculum examines the civil rights movement in the United States, the women's movement and the environmental movement.

Research also shows that there are positive benefits from intergroup relations in terms of reducing prejudice and discrimination (Brown and Hewstone 2005; Pettigrew and Tropp 2006). The seminal work of psychologist Allport (1954) on intergroup contact identified optimal conditions for such interactions as characterized by equal status, cooperation, and common goals and support from authorities, but subsequent research documents benefit even in the absence of those optimal conditions (Hewstone et al. 2014).

There are many ways in which curriculum can promote these types of exchanges. The first is structuring diverse schools and classrooms, where students experience diversity as a matter of daily life. It is also possible to expose students to diversity in the content of the curriculum, for example, in the selection of readings available in language and literature classes, including readings from diverse authors, as well as readings that explicitly examine the different experiences and perspectives of different groups. Courses in social studies can also directly engage students in the study of inter-race or intergroup relations, and can help increase their literacy in various cultures. For example, students could study various religious traditions, essential knowledge in a world in which many people make sense of the world through a religious lens. Results from the Pew Research organization show that there is significant religious ignorance among Americans, even though most Americans say that religion is very important in their lives. On average, adults can answer about half of the questions in a survey designed to assess basic knowledge of various religious traditions. While most Americans have familiarity with the basics of Christianity, and know some facts about Islam, very few are knowledgeable about Judaism, Hinduism, or Buddhism. Those who know people of other faiths have greater knowledge, and those who are more knowledgeable have more favorable views of other religious groups (Alper 2019).

Curriculum can also organize activities that extend the interactions of students with peers from different countries and cultures, such as through the use of technology and through student travel and exchanges.

As curriculum provides students opportunities to directly study the topic of race, the diverse experiences of different racial groups over time in different societies, and inter-race relations, it is helpful that such study is informed by current socio-psychological research which underscores race primarily as a product of dynamic social construction, and not a predetermined biological fact (Richeson and Sommers 2016, p. 441). Perceived status, health and psychosocial factors such as prejudice, group identification, stereotypes, political ideology, and beliefs about race shape the racial category to which individuals are assigned (Ibid, p. 443).

Another area where the science of learning can support global education concerns research on how adults learn, as it can help design opportunities for teachers, school leaders, and other administrators to develop the necessary skills to advance global education. In studying how adults learn Robert Kegan and Lisa Lahey have discovered that pre-existing habits and mindsets often prevent acting on new knowledge. They have found that if adults can be made aware of how those pre-existing beliefs and assumptions are getting in the way they can more readily change and accept change in their organizations (Kegan and Lahey 2009).

Any effort to introduce global education in an existing school will have to meet adults where they are. Teachers and leaders are not blank slates, they come with their pre-existing beliefs and commitments, some of which may not immediately embrace global education. A study of social studies teachers in Indiana emphasizes the need for teacher knowledge and the challenges of accommodating global education to their curriculum (Rapoport 2010). These teachers reported never using the term "global citizenship." A study of teachers in England found that even among those who thought global education was important, very few had confidence in their ability to teach it (Davies et al. in Yamashita 2006). A comparative study of the practice of global education in four countries found that teachers needed significantly more time to agree upon and develop strategies for global education (Osler and Vincent 2002). A study of the implementation of global education in various Canadian provinces found that administrators' beliefs clashed with the inclusion of global education in the primary school curriculum, resulting in a lack of support to schools to build curriculum and professional capacity:

Despite increasingly strong inclusion of global education in the formal curricula, most officials we interviewed in education ministries and school boards across Canada viewed global education activities as an optional rather than a mandatory activity. Indeed, a significant number of the educational administrators in our sample expressed skepticism about the appropriateness of introducing global education themes at the elementary school level. (Mundy and Manion 2008, p. 956)

Too often, competing or unclear definitions of what global competency is or how to achieve it are the reason for lack of pedagogical action. Because much of the debate about global education remains academic and abstract, a conversation for the initiated and disconnected from practice, it fails to include the uninitiated or to engage the novice productively. A productive way to engage teachers in these conversations is in the context of a practice of global education, using the practice as an opportunity to test emerging understandings, for instance of alternative views of global education, and to refine them as they engage in a practice of teaching a global curriculum. In my work with teachers and leaders, I have found it productive to engage them as teams in a thirteen-step school-wide process to develop and implement a global education program. The process begins with a discussion of what a high school graduate should know, care about and be able to do to achieve an ambitious goal such as the elimination of poverty. From that discussion, teams move to a more specific conversation about the kinds of pedagogical sequences that can help students develop those competencies. Such processes for collaborative work in schools provide a context in which some of the barriers created by conceptual disagreements may surface and be addressed, providing opportunities for clarification, learning, and negotiation (Reimers et al. 2018, 2019).

Some years ago, as I was working with the entire staff of an independent school in a workshop following this process, the chair of the science department came to see me after the workshop had concluded to thank me. He had been resisting the school leader's efforts to develop a school-wide program of global education and explained that the workshop, and in particular collaborating with his colleagues in designing lesson plans, had helped him understand for the first time that global education was

not an alternative to the traditional subjects, but that it was a way to integrate the existing traditional subjects and to help students work on real world problems. "Now that I see that there is plenty of room for science education in this program, I am more ready to embrace it." He said, In my practice, I have found that competing definitions of what global education is and entails are common barriers for a coherent school-wide program of global education when the discussion is too abstract and unrelated to actual instructional practice.

Because teachers are not blank slates when they engage with global education, pre-existing views may be more or less supportive to global education. A survey of teachers in a network of high schools working to advance global citizenship in Denmark identified differences in the extent to which teachers in different subjects believed they understood the concept of global citizenship. Science and math teachers were, on average, less confident than teachers in language arts or in social studies. Science teachers were also found to be less interested in global education, 30% of them did not see the relevance of global education for their subjects, compared to 8% among social science teachers and 11% of the language arts teachers. These quotes from teachers interviewed in that study are illustrative of those pre-existing mindsets:

I think it takes a little developing for some, typically it is said that the science subjects have a harder time figuring out where the global dimension fits in. But I think, especially in cooperation with others, it is possible. (Nilsson 2015, p. 25)

I think maybe, without pointing fingers at anyone, that for example a Math teacher here at the school, or a physics teacher my age would say 'what kind of nonsense is this, they need to learn some formulas and quadratic equations'. (Nilsson 2015, p. 34)

The mindset that global education "belongs" in social studies is pervasive and can hamper efforts for interdisciplinary collaboration. A study of the implementation of global education in seven provinces in Canada found a similar concentration of global education in social studies. The notion of infusing global education across the curriculum was not reflected in the standards (Mundy and Manion 2008, p. 953).

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