Methodology

In this section, we describe our methodology and coding system by answering the following questions:

- What was our research process?
- What information was collected about frameworks?
- How are constructs coded?
- What are the codes?
- How were the constructs compared to one another?

What was our research process?

The Taxonomy Project unfolded in several phases.

Identify frameworks. In the earliest phase of the project, the project team sought out five frameworks to input into the taxonomy database. This allowed us to refine the database and coding system into its current state.

Because these frameworks operate under a variety of disciplines, including social and emotional learning, 21st century skills, character development, ethics and virtues, mindset, and personality, we identified the range of disciplines to capture. Once we identified these "clusters," frameworks were chosen within each discipline based on how widely the framework was used.

Thus, criteria for frameworks are as follows:

1. Representative of a wide range of disciplines
2. Widely adopted
3. Descriptive skills, traits, competencies, strengths, mindsets and/or attributes that are defined and can be coded

Design a database. We designed a database and a procedure for capturing descriptive data about each framework. For more detailed information about what type of data was collected, see "What Information Was Collected About Different Frameworks" below.

Develop a coding system. To document the constructs included and defined in each framework we developed a coding system that maps the constructs in each framework onto a broad set of benchmarks/outcomes across six domains (cognitive, emotional, social, values, perspectives, self-image/identity).

Create a set of visualizations. We used the information in the database to create a set of visuals that enable users to see linkages across frameworks (e.g., what is similar or different), even when different names or terms are used.

Continuous improvements to the website. We continuously made improvements to the website based on usability testing with key users, key informant interviews, survey collection, and consultation.

What information was collected about frameworks?

Framework Overview

Basic information summarizing the framework's focus, scope, and audience, including:

a) **Framework Description:**
A brief summary of the framework that includes the origin and focus of the framework and developer.

b) **Developer Name & Type:**
The name and type of individual(s) or organization(s) that developed the framework. This may include researchers, non-profit organizations, governments, intergovernmental organizations, etc.

c) **Key Parameters:**
Information about framework's target population and context, including:
- **Age**: The age and/or grade range to which the framework applies (as stated by the framework)
- **Setting**: Any specific contexts or settings for which the framework may be designed (as stated by the framework)
- **Region:** Any regions for which the framework has been designed, or where it is commonly used. This section uses the World Bank's regional classification system: East Asia Pacific, Europe & Central Asia, Latin America & the Caribbean, Middle East & North Africa, North America, South Asia, and Sub-Saharan Africa. In addition, frameworks used in all regions or intended for use globally are classified as Global.
- **Language:** Any languages in which skill descriptions/definitions are available.

d) **Scope & Structure:**
Frameworks vary in both size and structure. This section describes the range/breadth of skills covered by the framework, including the number and type of skills included and how they are organized into groups or hierarchies.

e) **Purpose:**
Frameworks have a wide variety of intended audiences and objectives. This section describes the purpose for which and the audience for whom the framework and its supporting materials are designed (i.e. what are its goals and who is it for?).

f) **Common Uses:**
Any groups and/or settings among which the framework is widely known or used (e.g., employers, specific school districts, international settings, etc.). If unknown or unspecified, we describe the general mission and impact of the framework developer.

g) **Key Publications**
Any publicly available and easily accessible papers, reports, official websites, or summary materials that describe the framework and contribute to the information in the framework profile. These can be reviewed to learn about a framework in more detail.

h) **Level of Detail:**
Some frameworks are highly specific and explained in great detail while others are meant to be generalizable across multiple settings and are therefore described at a more general, high-level. Our detail ratings indicate the extent and depth of information a framework provides about the following areas:

- **Framework:** The extent to which the framework documents provide information about (a) the framework itself (what it includes, how it works, and who it is for) and/or (b) social, emotional, and other non-cognitive skills more generally.
- **Skills:** The level of detail with which the skills in the framework are described and defined
- **Observable behaviors:** Whether the framework describes how the skills manifest as behaviors that can be observed and measured in real life contexts. (To receive a checkmark, the framework must provide example behaviors consistently for each major skill or construct.)
- **Learning Progression:** To receive a check mark, the framework must describe the sequence in which skills/constructs in the framework are learned and deployed across the lifespan (i.e. which skills are most salient and what at they look like at various ages) and/or in relation to each other (i.e. how new skills build on previous skills).

Skills Included

A list of the major domains and skills included in the framework and, when applicable, behavioral descriptors. Some frameworks provide a single list of competencies while others organize or group skills into ontological categories or hierarchies. (For frameworks that include both academic and non-academic skills, the non-academic skills may be listed with greater granularity in our profile.)

Key Features

Any resources or information the framework provides around important factors that (a) impact how and why skills are developed, and (b) guide how the framework should be applied across ages and settings, including:

a) **Context & Culture**
Any information or resources that address how identity, culture, and context impact the way individuals understand, prioritize, develop, and deploy skills. This includes both:

- How the framework takes race, gender, sexuality, religion, nationality, special/exceptional education, ESL/ELL, etc. into consideration. (It does not include information about specific skills in the framework that relate to diversity or inclusion.)
- Any information or resources that address the impact of environmental and contextual factors on the development and deployment of non-academic skills, including: (a) individual biology and life experiences; (b) every-day influences like family, friends,

school, and work; and (c) more macro influences like government policies, the socio-political climate, and access to resources.

b) **Developmental Perspective**
Any information or resources that address (a) the developmental sequence in which skills are learned (i.e. how skills build on each other), and (b) when and how skills are learned and deployed across various ages and developmental stages. If applicable, includes elaboration on the learning progression noted in the overview section.

c) **Environment & Context**
Any information or resources that address the impact of environmental and contextual factors on the development and deployment of non-cognitive skills, including: (a) individual biology and life experiences; (b) every-day influences like family, friends, school, and work; and (c) more macro influences like government policies, the socio-political climate, and access to resources.

d) **Associated Outcomes**
Any information about the influence of non-cognitive skills on important outcomes related to school, work, and life. The evidence may apply directly to specific skills in the framework or to non-cognitive skills more generally.

Available Resources

Any resources or information the framework provides to help audiences understand, develop, and assess skills in the framework, including:

a) **Support Materials**
Additional materials that support the understanding or implementation/use of the framework. This may include handouts, videos, webinars, online tools, research reports, reading lists, implementation guides, etc.

b) **Programs & Strategies**
Any information or resources related to finding programs, strategies, and interventions that align with the framework. This may include programs/strategies specifically created to support or align with the framework or more general guidance and recommendations around how to select effective programs/strategies.

c) **Measurement Tools**
Any information, resources, or tools related to measuring or assessing skills, either those specific to the framework or more generally.

Learn More

Guidance on where to learn more about the framework, including:

a) **Contact Information**

The developer's contact information, including a website, phone, and email. A direct contact is provided wherever available.

b) **References**
Full citations for the key publications

How are constructs coded?

Constructs included in each framework were coded by a team of trained research assistants using a common set of benchmarks. Codes are divided into six domains, each of which contains a set of sub-domains that represent a particular skill in that domain. Each of these sub-domains is further divided into benchmark codes that consist of an observable behavior or state. Constructs received a benchmark code if a coder determined that the definition or description of the construct provided within the framework matched the skills or behaviors described in the associated benchmark. *Note:* These codes are a work in progress. As coding progresses, additional codes will be added to the database as they arise during coding and pass consensus by the research team.

How were the constructs compared to one another?

A distance matrix was generated that represents how similarly two constructs were coded, and thus how closely they represent the same benchmark or skill, based on the construct definitions. This information was then used to determine which constructs should be linked together in our thesaurus and visual tools.