

21st CENTURY SKILLS

Lorayne's "21st Century Skills" prompt:

"I'm hearing that you may be taking all of your skills for granted. Please don't be so modest. Take a look at 21st century skills, and know that you already have the skills that would fit there. Take a look."

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ⁱ Below are skills that find the top of many "21st Century Skills" lists. In alphabetical order, they include:

- Collaboration
- Cooperation
- Communication
- Creativity
- Organization
- Problem Solving
- Self Direction & Social Responsibility
- Technological Fluency

Skill Descriptions

Collaboration

Collaboration is a structured, recursive process where two or more people work together toward a common goal—typically an intellectual endeavor that is creative in nature —by sharing knowledge, learning and building consensus. Collaboration does not require leadership and can even bring better results through decentralization and egalitarianism. In particular, teams that work collaboratively can obtain greater resources, recognition and reward when facing competition for finite resources.

Structured methods of collaboration encourage introspection of behavior and communication. These methods specifically aim to increase the success of teams as they engage in collaborative problem solving. Forms, rubrics, charts and graphs are useful in these situations to objectively document personal traits with the goal of improving performance in current and future projects.

(From [Wikipedia: collaboration](#))

Cooperation

Cooperation is the process of working or acting together, which can be accomplished by both intentional and non-intentional agents. In its simplest form it involves things working in harmony, side by side, while in its more complicated forms, it can involve something as complex as the inner workings of a human being or even the social patterns of a nation. It is the alternative to working separately in

competition. Cooperation can also be accomplished by computers, which can handle shared resources simultaneously, while sharing processor time.

Cooperation, more formally speaking is how the components of a system work together to achieve the global properties. In other words, individual components that appear to be “selfish” and independent work together to create a highly complex, greater-than-the-sum-of-its-parts (*Synergetic*) system. Examples can be found all around us. The components in a cell work together to keep it living. Cells work together and communicate to produce multicellular organisms. Organisms form food chains and ecosystems. People form families, gangs, cities and nations. Neurons create thought and consciousness. Atoms cooperate in a simple way, by combining to make up molecules. Understanding the mechanisms that create cooperating agents in a system is one of the most important and least well-understood phenomena in nature, though there has not been a lack of effort.

However, cooperation may be *coerced* (forced), *voluntary* (freely chosen), or even *unintentional*, and consequently individuals and groups might cooperate even though they have almost nothing in common qua interests or goals. Examples of that can be found in market trade, military wars, families, workplaces, schools and prisons, and more generally any institution or organization of which individuals are part (out of own choice, by law, or forced).

Communication

Communication is a process that allows organisms to exchange information by several methods. Exchange requires **feedback**. The word "communication" is also used in the context where little or no feedback is expected such as **broadcasting**, or where the feedback may be delayed as the sender or receiver use different methods, technologies, timing and means for feedback.

Communication is the articulation of sending a message, whether it be verbal or nonverbal, so long as a being transmits a thought provoking idea, gesture, action, etc. . .

Communication can be defined as the process of meaningful interaction among human beings. It is the act of passing information and the process by which meanings are exchanged so as to produce understanding.

Communication is the process by which any message is given or received through talking, writing, or making gestures.

There are auditory means, such as speaking, singing and sometimes tone of voice, and **nonverbal**, physical means, such as **body language**, **sign language**, **paralanguage**, **touch**, **eye contact**, or the use of **writing**.

Communication happens at many levels (even for one single action), in many different ways, and for most beings, as well as certain machines. Several, if not all, fields of study dedicate a portion of attention to communication, so when speaking about communication it is very important to be sure about what aspects of communication one is speaking about. Definitions of communication range widely, some recognizing that animals can communicate with each other as well as human beings, and some are more narrow, only including human beings within the parameters of human symbolic interaction.

Nonetheless, communication is usually described along a few major dimensions:

1. Content (what type of things are communicated)
2. Source/Emisor/Sender/Encoder (by whom)
3. Form (in which form)
4. Channel (through which medium)
5. Destination/Receiver/Target/Decoder (to whom)
6. Purpose/Pragmatic aspect

(From [Wikipedia: Communication](#))

Creativity

Creativity (or "creativeness") is a mental process involving the generation of new ideas or concepts, or new associations between existing ideas or concepts.

From a scientific point of view, the products of creative thought (sometimes referred to as divergent thought) are usually considered to have both originality "and" appropriateness. An alternative, more everyday conception of creativity is that it is simply the act of making something new.

Although intuitively a simple phenomenon, it is in fact quite complex. It has been studied from the perspectives of behavioural psychology, social psychology, psychometrics, cognitive science, artificial intelligence, philosophy, history, economics, design research, business, and management, among others. The studies have covered everyday creativity, exceptional creativity and even artificial creativity. Unlike many phenomena in science, there is no single, authoritative perspective or definition of creativity. Unlike many phenomena in psychology, there is no standardized measurement technique.

Creativity has been attributed variously to divine intervention, cognitive processes, the social environment, personality traits, and chance ("accident", "serendipity"). It has been associated with genius, mental illness and humour. Some say it is a trait we are born with; others say it can be taught with the application of simple techniques.

Although popularly associated with art and literature, it is also an essential part of innovation and invention and is important in professions such as business, economics, architecture, industrial design, science and engineering.

(From [Wikipedia: Creativity](#))

Organization

An "organization" (or "organisation" — see spelling differences) is a social arrangement which pursues collective goals, which controls its own performance, and which has a boundary separating it from its environment. The word itself is derived from the Greek word "ὄργανον" (organon) meaning "tool". The term is used in both daily and scientific English in multiple ways.

(From [Wikipedia: Organization](#))

Problem Solving

Problem solving forms part of thinking. Considered the most complex of all intellectual functions, problem solving has been defined as higher-order cognitive process that requires the modulation and control of more routine or fundamental skills ([[#Reference-Goldstein | Goldstein & Levin, 1987]]). It occurs if an organism or an artificial intelligence system does not know how to proceed from a given state to a desired goal state. It is part of the larger problem process that includes problem finding and problem shaping.

(from [Wikipedia: Problem Solving](#))

Regarding problem solving skills, the University of Michigan's Engineering department has a great web page delineating the various types of problems as well as the numerous skills required. For those interested in Bloom's Taxonomy, you can click on the page *10 Types of Home Problems*.

<http://www.engin.umich.edu/~problemsolving/>

Self-Direction & Social Responsibility

Self-Direction—Monitoring one's own understanding and learning needs; locating appropriate resources; transferring learning from one domain to another. (From The Partnership for 21st Century Skills)

Social Responsibility—Acting responsibly with the interests of the larger community in mind; demonstrating ethical behavior in personal, workplace, and community contexts. (From The Partnership for 21st Century Skills)

Technological Fluency

Information and Media Literacy Skills—Analyzing, accessing, managing, integrating, evaluating, and creating information in a variety of forms and media. Quoting Alvin Toffler: “The illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, un-learn and relearn.” Those who can un-learn and relearn are the leaders for tomorrow.”

ⁱ List sampled from <https://cais21stcentury.wikispaces.com/List+of+21st+Century+Skills>