

## High Performance Skills

A small set of cognitive, psychological, and interpersonal skills accounts for the vast majority<sup>1</sup> of observed differences in performance between any two workers<sup>2</sup>. We have identified the most important, mutable skills that you can develop to improve your own performance. The following are the Futures Forge High Performance skills:

1. Self-Awareness (Cognitive)
2. Critical thinking (Cognitive)
3. Effective Communication (Interpersonal)
4. Collaboration (Interpersonal)
5. Digital Literacy (Cognitive)
6. Integrity (Psychological)
7. Autonomous Motivation (Psychological)
8. Conscientiousness (Psychological)
9. Perseverance (Psychological)
10. Adaptability (Psychological)
11. Resilience (Psychological)
12. Emotional intelligence (Interpersonal)

These skills are the most powerful drivers of performance other than general mental ability (GMA)<sup>3</sup>. They account for the greatest observed difference in performance across workers in high-complexity roles of various fields<sup>4</sup>. Unlike subject- or role-specific skills, your improvements in these skills transfer to new roles.

In order to consider the impact of these skills, they need to be considered when controlling for GMA, to make sure they're not proxies for intelligence or pure products of intelligence. Many skills, credentials, and test results, and other measurements of talent track so closely with GMA that they do not provide any unique performance prediction value. These skills show predictive power beyond GMA, meaning those with measurable strength in these skills will perform better than those of similar GMA.

The skills are ranked by their relative importance: self-awareness is the most important. Numbers in the table represent the percentage of observed difference in job performance in two equally intelligent people driven by this skill.

Skills #1- #5 are Core Competencies that unlock your ability to learn and grow most quickly. Strength in them will increase the rate at which you can develop all skills, including those on this list. We rank them

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<sup>1</sup> As long as we are controlling for cognitive ability.

<sup>2</sup> This is consistently true regardless of the field the workers are in, but the difference is more pronounced in higher-complexity fields that require higher cognitive ability to succeed in.

<sup>3</sup> It is not listed here because there is currently no evidence that cognitive ability can be improved in adults.

<sup>4</sup> This follows the "Pareto Principle" - that "80% of results come from 20% of effort."

based on our observations of how much your strength in each Core Competency impacts your rate of learning in work environments. More on Core Competencies in a later section.

Skills #6- #12 are consistently shown by academic research to directly impact job performance. These psychological skills are measurable<sup>5</sup> and mutable<sup>6</sup>, with two implications. First, the impact on job performance can be directly calculated. Second, intentional effort can improve your strength in these skills and consequently improve job performance. Our ability to rank these skills is based on the work of Schmidt (2016) and Harzer (2021) who rigorously measured job performance versus various skills, with strong controls<sup>7</sup>.

| Skill <sup>8</sup>         | Job Performance Variance Explained When Combined with GMA | Incremental Explanatory Power Beyond GMA <sup>9</sup> |
|----------------------------|-----------------------------------------------------------|-------------------------------------------------------|
| Cognitive Ability          | 65%                                                       | N/A                                                   |
| Integrity                  | 78%                                                       | 13%                                                   |
| Autonomous Motivation      | 76%                                                       | 11%                                                   |
| Conscientiousness          | 74%                                                       | 9%                                                    |
| Perseverance               | 72%                                                       | 7%                                                    |
| Adaptability <sup>10</sup> | 71%                                                       | 6%                                                    |
| Resilience <sup>11</sup>   | 70%                                                       | 5%                                                    |
| Emotional Intelligence     | 70%                                                       | 5%                                                    |

*[Sidebar: why “skills?”]*

*Not all authors use the word “skill” to describe everything on this list. Conscientiousness is certainly a personality trait that appears in the Five Factor / OCEAN personality model; resilience, integrity, motivation, emotional intelligence, adaptability, and perseverance are also correctly called “traits” or “attributes.” They differ meaningfully from a skill such as using spreadsheets for analysis. You can have essentially zero spreadsheet analysis skill, and after training, you develop nonzero skill. Conversely, a*

<sup>5</sup> Organizational and Industrial Psychology researchers have established accepted standardized tests to measure these psychological skills.

<sup>6</sup> Repeated academic research shows strong validity; see appendix for more about research methods, particularly the work of Hunter & Schmidt.

<sup>7</sup> Schmidt (2016) is a century-long metastudy; individual studies will have different rankings

<sup>8</sup> All data from Schmidt (2016) unless otherwise noted.

<https://home.ubalt.edu/tmitch/645/session%204/Schmidt%20&%20Oh%20validity%20and%20util%20100%20urs%20of%20research%20wk%20PPR%202016.pdf>

<sup>9</sup> These numbers will not add up to 100% because there is covariance between the skills.

<sup>10</sup> Harzer, et al (2021). <https://pmc.ncbi.nlm.nih.gov/articles/PMC7994607/>

<sup>11</sup> Harzer, et al (2021). <https://pmc.ncbi.nlm.nih.gov/articles/PMC7994607/>

*personality trait such as extraversion is on a spectrum that does not have an obvious “better” or “worse” side.*

*A “personality trait” becomes a “psychological skill” if two things are both true:*

- 1. A clear shift in the personality trait can lead to desirable performance results, and*
- 2. This shift can be intentionally cultivated*

*If these are both true, the personality trait is functionally the same as a cognitive trait such as critical thinking. Whether the skill is critical thinking, resilience, or adaptability, greater strength indisputably improves your performance at work. And, for all three, the correct intentional efforts can lead to measurable and sustained improvements.*

*There is strong evidence that personality traits are anchored or defaulted by biology and early development. For some time, many scientists believed that they would not change in adulthood, however substantial evidence now exists which demonstrates otherwise. It may even be true that more effort is required the further you are trying to shift away from your personality defaults. This will, however, be true of any skill: your cognitive and psychological makeup will lead to faster or slower development of various skills. In this way, performance-related personality attributes are not fundamentally different from other skills.*

*[End sidebar]*

## Developing Each Skill

**Self-Awareness**<sup>12</sup> is the ability to identify and understand your own thoughts and feelings, as well as strengths and weaknesses. Those with self-awareness have a clear picture of who they are, both momentarily and persistently. By contrast, those without it are either unaware of their current state of mind or state of ability, or have an inaccurate self-perception. Those with the clear picture that comes from self-awareness are able to more quickly improve their current performance, and soberly account for gaps between their current abilities and their goals. Self-deception, by contrast, drives investment in the wrong areas and slows development. Self-awareness is often improved through receiving and earnestly reflecting on observations made by yourself, and received through feedback from others.

**Critical thinking**<sup>13</sup> is an active, disciplined cognitive process that involves conceptualizing, analyzing, synthesizing, and evaluating information as a guide to belief and action. Those with critical thinking skills more frequently and more capably objectively assess data, points of view, options, decisions, and ideas. They are able to observe how biases and narratives influence judgment, and use objective means to determine what is likely and reasonable. This vastly improves decision-making at tactical and strategic levels at work. Critical thinking is often improved through repeatedly engaging in complex scenarios where your decisions have real consequences or outcome, and reflecting on how decisions affected success or failure.

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<sup>12</sup> PwC Ceo Needs Survey (2018); McKinsey, “Defining the Skills citizens will need in the future world of work,” 2021; World Economic Forum, “These are the top 10 job skills of tomorrow,” 2020; Eton College, “9 things we learned from our recent roundtable on preparing students for university and the workplace,” 2023.

<sup>13</sup> Ibid

**Effective Communication**<sup>14</sup> is the ability to transmit with fidelity the intended contents of your mind to someone else's. It is an essential performance skill because an idea or work product that is not shared effectively has little value compared to the one that others can understand. Great communicators can engage teammates, sell ideas, seek effective coaching and guidance, and get feedback on their work and performance. Communication can be developed to a strong basic level through finding your own style and practicing while checking for understanding.

**Collaboration**<sup>15</sup> is a skill cluster that synthesizes the talents and knowledge of a group of people to produce more than the individuals would have produced on their own in parallel. Great collaboration is a dynamic process that involves sharing, discussing and debating, allocating work effectively, and pivoting into action. Those who excel as collaborators have a large lever on their efforts, and are able to work on higher-complexity and higher-consequence work than they would be able to do on their own. They are able to learn more quickly than by working alone. Collaboration can be developed through practicing it with a set of foundational mindsets<sup>16</sup>, ideally on challenges that by design benefit more from teamwork than individual effort.

**Digital Literacy**<sup>17</sup> is the ability to engage with the current state of the art of digital work tools, and to quickly learn new ones as they are developed. Digitally literate people are able to quickly access information, skills, and analysis just-in-time for the work that they are doing. This allows them to take on projects and challenges without developing expertise ahead of time, without long delays to acquire that expertise when it is needed. Leveraging your digital literacy skills to learn knowledge and skills just-in-time also improves learning rate and retention<sup>18</sup>. Digital literacy can be developed through a commitment to frequently learn about and use emerging tools.

**Integrity**<sup>19</sup> is the tendency to act in alignment with your values. This means being honest with your word, adhering to common ethical standards, and being willing to forego short-term personal gain to remain aligned with those values. Integrity has the highest measurable impact on job performance when controlling for GMA. Among other reasons, this is because high-integrity people are trusted by those around them, and are therefore invited to apply their skills to high-consequence projects. Integrity is often improved through studying and discussing ethical frameworks or role models.

**Autonomous Motivation**<sup>20</sup> is the ability to summon motivation to apply yourself without an external party. You can summon intrinsic motivation (enjoyment of the task for its own sake) or extrinsic motivation (a desire to reach a goal or outcome). This differs from needing to be motivated by others, whether through pressure or inspiration. This skill allows you to choose deliberately to begin and continue a task, "bring their best," and avoid burning out. Autonomous motivation is improved by

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<sup>14</sup> Ibid

<sup>15</sup> Ibid. Also, Harzer, et al (2021) <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7994607/>

<sup>16</sup> As shared in *Practical Teamwork*

<sup>17</sup> Ibid

<sup>18</sup> <https://ablconnect.harvard.edu/just-time-teaching-research>

<sup>19</sup> Schmidt, 2016

<sup>20</sup> Measured as "interest" in Schmidt (2016). See also: Young, Dulcewicz, University of Oxford and Royal Navy (2022)

enumerating your goals and interests, and using behavioral activation techniques to link current tasks to these.

**Conscientiousness**<sup>21</sup> is a personality trait commonly studied in psychology. Conscientious people are diligent, careful, organized, and disciplined. Generally they are highly dependable and will tend to do things that help themselves and others. Conscientious people perform better because they consistently complete the work that they and their employers need done. Conscientiousness is often improved by developing habits, usually through behavioral activation techniques such as creating schedules, tracking time, etc.

**Perseverance**<sup>22</sup> is an ability to tolerate and persist through difficulty and discomfort, continuing to engage and exert effort until you have accomplished your objective<sup>23</sup>. Those high in perseverance are less likely to quit in response to difficulty and pain, and are therefore more likely to achieve greater results in pursuits which require sustained difficult effort, such as physical training. Perseverance is most often improved through intentional “scaffolding” of taking on increasingly difficult challenges, and is enhanced by doing so in a group with a culture that values perseverance.

**Adaptability**<sup>24</sup> Adaptability is a combination of high Emotional Stability<sup>25</sup> and high Openness to Experience<sup>26</sup> from the OCEAN personality model. It represents your ability to absorb and act on new information, experiences, and circumstances without emotional resistance or turmoil. Adaptable people perform better at work because they are making decisions and shifting approaches in response to surprises or unplanned events, where others are paralyzed or reactive. They are able to tolerate greater uncertainty, which opens doors to leadership and entrepreneurship. Adaptability is often improved by improving your mental health and mindfulness, as well as through “exposure therapy” to unstable scenarios.

**Resilience**<sup>27</sup> is the ability to “bounce back” from failure rather than be deterred or demotivated by it. People with resilience are more likely to see failure as a teacher or a set of data, and are less likely to wallow in it or avoid future challenges. Because they can tolerate failure, resilient people are more likely to work at the frontiers of their skills, and therefore both learn faster and take on more consequential work. Resilience is often improved through intentional exposure to “controlled” failure in a high-feedback environment, and is enhanced by doing so in a group with a culture that values perseverance.

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<sup>21</sup> Schmidt (2016) - Conscientiousness is one of the “Big Five” or “OCEAN” personality traits: Openness to Experience, Conscientiousness, Extraversion, Agreeableness, and Neuroticism.

<sup>22</sup> Harzer, et al (2021) <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7994607/>

<sup>23</sup> It is one component in grit (the other is resilience). Grit is a mutable psychological skill popularized by Prof Angela Duckworth in her TED talk and book, Grit. Duckworth currently includes motivation as a third element of her definition of grit. We keep them separate.

<sup>24</sup> Measured as a combination of a person high in Openness to Experience and low in Neuroticism on the Five Factor Model. Schmidt (2016) and Harzer, et al (2021)

<sup>25</sup> Emotional Stability is the opposite of Neuroticism in the OCEAN model, representing a tendency to respond to the world and our own thoughts with calm and equanimity.

<sup>26</sup> Openness to Experience represents curiosity and interest in novel things, ideas, and experiences.

<sup>27</sup> Harzer, et al (2021) <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7994607/>

**Emotional intelligence**<sup>28</sup> Emotional Intelligence (EI) is a cluster of skills that involves perceiving and understanding, and also working with or regulating the emotions of yourself and others. People with high emotional intelligence are able to build stronger connections with others, communicate more effectively, and devote less energy grappling with their own wild emotions. EI is now a highly-sought trait in leaders due to those leaders' ability to build trust, loyalty, and safety in their team. EI is often improved through receiving feedback about how you are being perceived, how others are feeling, and how they want to be treated.

## Core Competencies for Maximizing Growth

Because each of these skills is mutable, the dominant strategy for maximizing your own performance in the long term is to improve these skills as quickly as you can. The first six skills in the list of performance skills are those which, when developed, will increase your rate of learning for all 12 skills. They are therefore of primary importance. We call them the “Core Competencies” of performance.

- Self-Awareness creates a clear understanding of your current mental state, as well as your current performance and skills. This allows you to correctly identify what to learn and develop next.
- Critical thinking allows you to make sound decisions from incoming data, meaning that you are more likely to learn a helpful and accurate lesson from that incoming data, as well as choose the most effective path for driving improvement.
- Communication allows you to share and understand ideas with others more easily. This allows you to seek and receive more accurate and directed feedback on both your work product and yourself.
- Being a strong collaborator allows you to engage effectively with intelligent, motivated people on hard problems. The dynamic dialogue positions you to consider new ideas, absorb new skills, and otherwise learn from diverse approaches to the joint challenge.
- Digital Literacy allows you to acquire just-in-time knowledge or skill for any challenge or project. Consistently using digital tools to access immediately-applicable knowledge and skills means you will be continually learning highly relevant material.

## Honorable Mentions

Beyond this list of 12, there are legions of skills that you could work to develop. For any given role, some specific skills will be critical, and some highly transferrable skills may rise to higher importance. Based on our own experience and questions we have received, we address a few other skills that are commonly discussed, but did not make our list of high performance skills. These honorable mentions either are not shown to drive as much performance improvement per unit of learning effort, or are products of these high performance skills.

**Teamwork:** We believe that teamwork is an underappreciated art compared to “leadership,” as great work usually happens in teams, and leaders are almost always part of a team. Being a great

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<sup>28</sup> Schmidt (2016) and Harzer, et al (2021)

teammate is a product of many skills, some of which are High Performance Skills, including critical thinking, effective communication, collaboration, conscientiousness, adaptability, and emotional intelligence. Because it is a composite of many skills, it does not have its own separate place on the list.

**Creative Thinking / Innovation**<sup>29</sup> is the skill of developing the next phase of an idea, process, or product. Innovators are bringing something new and useful into the world that did not previously exist; the process involves combining imagination with a structured approach to understand the world and transform ideas into solutions. Innovators perform better because they are not constrained by doing things the way that they or others have done them before, and can more easily find better ways of achieving their objectives. You can develop innovation skill through structured exercises that include intentional observing, questioning, experimenting, networking, and associating data and ideas. Because its performance value varies significantly between different roles, it does not sit on the list of high performance skills. You may, however, end up in a role where it is a driver of your personal performance in that role.

**Grit** is a combination of perseverance and resilience. Angela Duckworth has popularized the concept as one also driven by motivation / passion. We have chosen to list the most important subcomponents of grit–resilience and adaptability–rather than grit itself. This is for two reasons:

1. The two components manifest differently and are developed differently. You can apply sustained hard work (perseverance) in pursuit of a goal, but might shatter in failing to achieve it. Identifying whether you should invest in improving your perseverance or your resilience is worthwhile.
2. They support learning and growth in different ways. Those with high resilience can learn well from failure; those with high perseverance can learn well from “putting nose to the grindstone.”

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<sup>29</sup> Ibid