

The Classification of Learning Skills contains more than 250 transferable skills organized into cognitive, social, affective, and psychomotor domains. They are called learning skills because as these skills improve, so does learning performance.

In 1991 the Secretary's Commission on Achieving Necessary Skills (SCANS) report, sponsored by the U.S. Department of Labor examined the demands of the workplace and defined the skills needed for employment, ultimately identifying five areas of competency: Resources, Interpersonal, Information, Systems, and Technology, and a tripartite foundation of **basic skills**, higher order **thinking skills**, and **personal qualities**.

The skills that made up this foundation led to the inclusion of 26 learning skills in the first *Teaching Institute Handbook* (Apple, 1991; see Figure 1). In 1992 at the Teaching Institute held at Valparaiso University a team of 40 faculty members added 34 more skills to the original 26, making a master list of 60 skills that had the potential to enhance learning performance. Later, a condensed list of "44 skills for life," organized into seven categories, was published in *Learning Through Problem Solving* (Apple, Beyerlein & Schlesinger, 1992). This list of "Skills for Life" list was again modified in *Teach for Learning - A Handbook of Process Education* (Apple, 1993) using eight categories.

Over the next few years, with the help of Teaching Institute participants, especially those in the Advanced Teaching Institutes, Pacific Crest continued to expand and organize this list of learning skills. With publication of the Taxonomy of Process Education in *Foundations of Learning* (Krumsteg & Baehr, 1996), the learning skills were organized into domains (cognitive, social, affective, and psychomotor), using a hierarchical scheme in each domain. The Taxonomy offered a total of 189 learning

skills, organized each into one of the four domains (e.g., social), 14 process areas (e.g., communication), and 45 cluster areas (e.g., creating a message). The following year *The Classification of Learning Skills for Educational Enrichment and Assessment* (Apple, 1997) was published, in which skills were organized into four domains, 13 process areas, 50 cluster areas, and 286 learning skills. This time *language development* was added to the *Classification* as the foundational skill area and *assessment skills* were added at the top of the hierarchy. In 1999 a revised expanded edition of the Classification of Learning Skills was presented in *Foundations of Learning* (2nd ed.) (Krumsteg & Baehr), this time with four domains, 15 process areas, 50 cluster areas, 292 learning skills.

Learning Skills and the Faculty Guidebook

In 2004 the Classification of Learning Skills was updated again and presented to the engineering community with a focus on how to use learning skills from the cognitive domain in activity design, facilitation, and assessment (Beyerlein, Cordon, Davis, Leise, Apple). This scholarship overlapped with four years of refinement of the Classification of Learning Skills, as documented in the *Faculty Guidebook* modules *Classification of Learning Skills* (Apple, Beyerlein, Leise, & Baehr, 2007), *Cognitive Domain* (Davis, Beyerlein, Leise, & Apple, 2007), *Social Domain* (Leise, Beyerlein, & Apple, 2007), and *Affective Domain* (Duncan-Hewitt, Leise, & Hall, 2007). These modules present the rules and logic for including a learning skill in the Classification, along with the description of the levels of learner development for any given learning

Figure 1 Learning Skills in the First *Teaching Institute Handbook*

1. Observation	10. Reading	18. Analysis
2. Thinking	11. Use of time	19. Visualizing an idea
3. Prediction	12. Estimation	20. Discovering a concept
4. Setting goals and objectives	13. Understanding your value system and that of others	21. Experimentation
5. Modeling	14. Writing	22. Self-assessment
6. Synthesizing concepts	15. Using math tools	23. Decision making
7. Transferring concepts	16. Teamwork	24. Vocabulary
8. Articulating concepts	17. Understanding systems	25. Memorizing
9. Listening		26. Focusing

skill (see figure 2). In this most recent iteration of the Classification of Learning Skills, we find the following (see also figure 3):

- Cognitive domain:
5 process areas, 21 cluster areas, 94 learning skills
- Social domain:
5 process areas, 18 cluster areas, 86 learning skills
- Affective domain:
5 process areas, 16 cluster areas, 76 learning skills

Figure 2 Levels of Learner Development in Any Learning Skill

Level 5 Transformative Use	The skill is expanded and integrated with other skills so that it can be applied in new contexts that inspire the emulation of others.
Level 4 Self-Reflective Use	The skill can be self-improved and adapted to unfamiliar contexts with occasional advice from a mentor.
Level 3 Consistent Performance	The skill is routinely called upon and effectively applied in multiple contexts by the user, who consciously directs the effort.
Level 2 Conscious Use	The skill can be used proactively by a learner, but its use needs to be constantly encouraged and supported by a mentor.
Level 1 Non-Conscious Use	The skill appears on a reactive basis in response to an immediate need, but without awareness of self or others.

Learning Skills in Student Curricula

Foundations of Learning (4th ed.) (Redfield & Hurley Lawrence, 2009) integrates learning skills as part of every activity in the book as a way of improving students' learning

performances. In addition, the learning skills are presented in the context of the Theory of Performance (Elger, 2007) and students are challenged to identify five learning skills they want to develop and which they are willing to work on during the course to improve their learning performance. The Classification of Learning Skills itself is included as Appendix B in the book. *Learning to Learn - Becoming a Self-Grower* (Apple, Morgan, & Hintze, 2013) similarly integrates the Classification of Learning Skills into each learning experience, also prompting students to periodically assess their work in improving their selected learning skills.

Life Enrichment Skills

Leise (2011) arrived at a related set of skills called the Classification of Life Enrichment Skills which complement the Classification of Learning Skills in that they “are valuable for educators in their work to facilitate growth for learners with varied ways of being, developmental challenges, and life problems.” While the life enrichment skills are eminently useful, they are broader than learning skills in that they tend to integrate across multiple domains of learning skills and they do not exist within any hierarchical structure. An excerpt of life enrichment skills from the theme, “Developing Identify” is available in Figure 4.

Looking Forward

For all the work done with learning skills, there is still much to do: the psychomotor domain needs to be completed so that it offers as much richness and potential as the other domains; the roles that language development and assessment play as foundational and culminating skills need to be considered and developed further; and finally, we hope to one day offer a performance measure for each learning skill to help in its development and in measuring its growth.

Figure 3 The Current Classification of Learning Skills

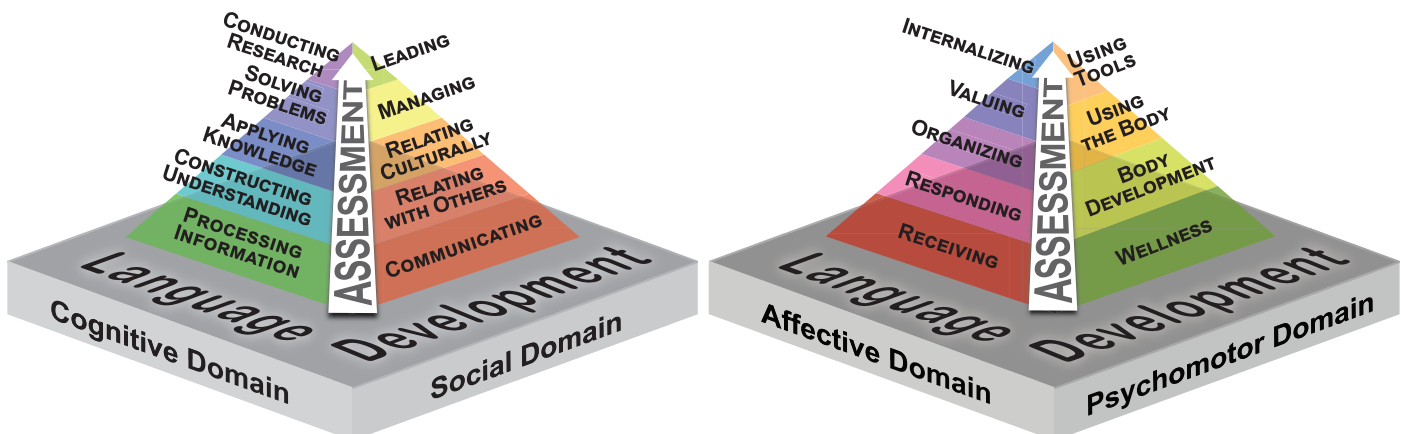


Figure 4 Life Enrichment Skills in the Theme Area “Developing Identity”

DEVELOPING IDENTITY	
Skill Clusters	Specific Skills
1. Establishing Identity	<ul style="list-style-type: none"> • Differentiating self from others—recognizing similarities and differences from others • Expanding self-concept—increasing awareness of multiple factors relevant to self • Increasing self-esteem—increasing confidence in self • Clarifying interests—discovering what is engaging • Becoming consistent with personal values—refining internal congruence • Striving for growth—moving toward an ideal self
2. Self-Regulating	<ul style="list-style-type: none"> • Monitoring internal reactions—noticing differences in effects of experiences • Generalizing self-control strategies—consciously maintaining control of personal reactions • Rationalizing unavoidable conflicts of conscience—moving on from irresolvable situations • Anticipating negative events—preparing to adjust affectively through imagination • Taking account of the influences of others—adjusting to social factors • Caring for self in stressful contexts—managing self-care in a consistent manner • Applying an assessment mindset—gaining performance insights from any feedback
3. Expanding Interpersonal Skills	<ul style="list-style-type: none"> • Enjoying social activities—engaging with others in play and recreation • Valuing others—avoiding exploitation and negative social comparisons • Exploring trust—learning who is dependable in ethical decision making • Learning from ethically ambiguous experiences—establishing values in real contexts • Being assertive—differentiating stubbornness and passivity from social effectiveness • Collaborating—working with others to achieve goals
4. Developing Motivational Control	<ul style="list-style-type: none"> • Persisting—maintaining focus despite disruptions and barriers • Articulating factors in past successes—recognizing how past challenges were managed • Monitoring progress with goals—recognizing when to change methods • Being flexible in strategies—changing methods in thoughtful ways to overcome barriers • Using strengths—selecting strategies based on self-knowledge from past performances • Generalizing from past successes—predicting how to increase the probability of future performances

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