

Learning How to Learn: Improving the Performance of Learning

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Abstract

The act of learning is usually thought of as preparatory to a performance; a student learns and then can perform on the basis of what has been learned. This article frames the act of learning as a performance in its own right, allowing the Theory of Performance to be used as schema for naming and exploring the various dimensions of the learning performances that can be improved. This paper's explorations is conducted with the future improvement of the learning performance very much in mind — learning how to learn.

Introduction

Research on teaching focuses on how best to design, facilitate, and enhance the experts' ability to share knowledge with learners — teaching educators how to teach effectively. And while there has been a lot of research focused on learning as the act of constructing knowledge, we don't typically think of learning as comparable to teaching; while we talk about teaching educators to teach effectively, there's no talk about teaching learners to learn effectively. But given the familiar model of learning, we cannot help but see that the act of learning can itself be the focus of learning. That is, just as one can learn to understand, use, and build working expertise with a complex mathematical formula, one can also learn how to learn better.

Individuals who consciously work to become better learners are striving to improve their performance as learners. The components of the Theory of Performance (Elger, 2007) can be used to identify what constitutes a performance of learning to learn. Just to keep things clear, meta-cognitively speaking, this is not a performance of learning focused on something like Spanish verbs, but a performance of learning focused on the act of learning. This parallel processing is what we call a Learning to Learn Mindset. The Theory of Performance states that learning to learn is affected, both positively and negatively, by five different components: The learner's identity, his or her learning skills, the level of knowledge, the learning context, and any personal factors the learner may have to deal with. In addition, we have successfully identified multiple aspects of each of these components, arriving at a superset of the different aspects of learning to learn.

1. Identity (as a learner)

Learner Efficacy: I believe I am an effective learner
Learner ownership and responsibility: I accept ownership and responsibility for my own learning

2. Knowledge

Levels of Learner Knowledge: Elevating the level of learning
Learning Process Methodology (LPM): Building awareness of one's own learning process
Forms of Knowledge: Aligning best learning practices with each type of knowledge

3. Learning Skills

Cognitive Domain: Thinking skills for processing information, constructing meaning, and applying knowledge
Social Domain: Social skills for producing effective team learning
Affective Domain: Emotional skills for taking risks, accepting failures, and persisting through to success

4. Context (for a performance of learning to learn)

Learning-to-Learn Camp/Course
Cooperative Learning: Team learning increases collective and individual learning performances
Active Learning: Learners publicly performing the act of learning

5. Personal Factors

Life Challenges: Transforming past problems into growth opportunities
Making the Right Choices: Making a better future

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Identity

Learner Efficacy:

I believe I am an effective learner

Learners' efficacy (self-belief in their own capacity to meet difficult learning challenges) must improve significantly as they proceed from high school into the more challenging collegiate environment. Their performances in constructing knowledge in different environments are impacted by their level of self-image as learners (Amel, 2008). The more successes and accomplishments learners have in more challenging learning environments, the stronger their self-efficacy. The number and diversity of people (educators, mentors, family, and friends) who affirm with evidence and frequency the learners' successes will strongly influence their level of efficacy. As the learners begin to measure their own accomplishments and assess their own abilities, they will strengthen their own efficacy and identity as learners.

Learner ownership and responsibility:

I accept ownership and responsibility
for my own learning

The construction of knowledge has to be under the control of the learners (Barell, 1995). In the experience of most learners, educators try to present them with knowledge. However, the effectiveness in learning comes about when the learners want to learn, do the thinking, contextualize, and generalize knowledge for their own use (Farrington et al., 2012). The extent to which this shift occurs, where the learner takes on additional responsibility for their learning, the stronger their identity becomes as independent life-long learners (Kolb & Kolb, 2010).

Knowledge

Levels of Learner Knowledge:

Elevating the level of learning

Bloom's Taxonomy has six interdependent levels of knowledge: information, understanding/comprehension, application, problem solving, evaluation and creative (Krathwohl, 2002). Critical thinking is used to process important information (level 1) to produce meaning and understanding (level 2). Applying new knowledge (level 3) to solve simple problems in new situations requires this understanding, not just memorized information. The ability to solve complex problems (level 4) is based upon the unprompted selective transfer of knowledge. Well documented problem solutions and projects are

evaluated and validated (level 5) to determine that the levels of quality meet standards. Creating new knowledge or original creative enterprises (level 6) requires high levels of learning as well as identity, well develop learning skills, and an array of contextual experiences. As students consciously progress through these levels of knowledge in each successive learning performance, their ability to measure and control their learning process improves.

Learning Process Methodology:

Building awareness of one's own learning process

The Learning Process Methodology (LPM) is an explicit modeling of the steps of the learning process that teachers and learners use to explore, analyze, understand, and apply knowledge to improving learning performance. Over the last 20 years, the LPM has help to improve learning performance through the engagement of teaching and learning (Beyerlein, Ford, & Apple, 1993). The LPM informs faculty in their design of activities, preparing facilitation plans, facilitating learning experiences and assessing learning performance. Students use the LPM to construct knowledge, measure levels of learning, improve reading, incorporate critical thought, control their own learning and help them build metacognition of their own learning process. Learning to Learn aligns well with the LPM and the levels of knowledge trajectory by activating prerequisite knowledge, producing knowledge that is understood, and by contextualizing, generalizing and integrating knowledge for use in solving problems.

Forms of Knowledge:

Aligning best learning practices
with each type of knowledge

There are different learning tools, techniques and strategies for each of the five forms of knowledge (Concepts, Processes, Tools, Contexts, and Ways of Being). Learners who understand the forms of knowledge can vary how the LPM is used to learn more effectively. For example, in the LPM, the models (step 9) you would choose to use would vary: learning object or concept model for conceptual knowledge, a methodology or procedural example for process knowledge, a schematic diagram or a quick reference card for a tool, a story for contextual knowledge and a profile for a way of being. The measurement of the level of learning takes on different prompts based upon the form of knowledge (Atherton, 2013).

Learning Skills

Cognitive Domain:

Thinking skills for processing information,
constructing meaning, and applying knowledge

Learners who actively start integrating all five levels of thinking skills (information processing, constructing meaning, applying knowledge, and problem solving) into the learning process will improve their learning performance (Davis, Beyerlein, Leise, & Apple, 2007). The first stage in applying thinking to the learning process is actively thinking about what you already know, and transferring prior knowledge and different life experiences to the current learning challenge. The second stage is processing the available information through effective reading using a very thoughtful and purposeful methodology. The next stage is to clarify the learning goals and expectations so a plan can be created for achieving these learning outcomes. The crucial stage of the learning experience is thinking critically by using relevant information and prior knowledge to analyze and understand models and examples. This learning is continued by enhancing comprehension by conversing with others and writing to learn. The final stage is applying the thinking skills needed to contextualize and generalize this knowledge so that it can be transferred to new problem solving situations.

Social Domain:

Social skills for producing effective team learning

Social learning skills are important in accessing the benefits of learning in teams and communities. Research shows that Cooperative Learning, Collaborative Learning, Project Based Learning, and Learning Communities contribute measurably to improved student learning performance. This research has also shown that these pedagogical approaches, where learners engage with other learners, also improve learners' social learning skills (Johnson & Johnson, 1990). These skill areas include communication, relating with others, cultural competence, and management/leadership. As the social skills increase so does learner success in more challenging learning environments like college (Brna, Baker, Stenning, & Tiberghien, 2002).

Affective Domain:

Emotional skills for taking risks, accepting
failures, and persisting through to success

Learner growth happens more quickly and significantly when individuals are outside their comfort zone. Failures also occur more often when learners are outside their comfort zone. Strengthening the affective

skills such as risk-taking, coping, managing frustration, responding from failure and self-challenging are all important in turning temporary failures into future successes. Additional affective skills like managing time, persisting, self-confidence, and focusing are supportive of risk-taking and responding to failures (Vega & Terada, 2012).

Context

Learning-to-Learn Camp/Course

As a member of a learning community and learning team, the students will individually and collaboratively read over 350 pages and write 150 pages. They are required to do background reading, recording, journaling, and internet searches to construct understanding of the information, produce reading logs, prepare for class reading quizzes, produce team reports, and engage in challenging classroom activities. They are required to think critically all the time to compare and contrast different perspectives, accept and provide peer feedback and finally contextualize this new knowledge into their own lives in meaningful ways. The students take on more and more of the roles that faculty traditionally do – reading, explaining what is in the books, working through problems, and assessing the work of other students. The students engage in 30 learning activities that continue to get more challenging thus pushing students outside their comfort zone leading to significant failures and successes. The experience is finalized with their participation in six challenges contests: math, writing, art, problem solving, speech, and talent show.

Cooperative Learning:

Team learning increases collective
and individual learning performances

Cooperative Learning is a great tool for improving learners' performances. The team structure (captain, recorder, spokesperson, reflector, critical thinker, technology specialist, optimist, and spy) allows each team member to practice different aspects of a self-directed learner. The captain manages the learning, recorder documents the learning, spokesperson articulates the learning, reflector assesses the learning performance, critical thinker validates the created knowledge, optimist keeps the process positive, and spy steals learning practices. The rotation of roles in each new learning experience propagates the sharing of learning practices among the team members. The learning challenges given to the team can exceed the abilities of any team member and the validation of learning of all members can be accomplished in less time than individuals can produce the same level

of learning on their own (Goleman, 2014). These practices can extend into learning communities and broaden the impact (Price, 2005).

Active Learning:

Learners publicly performing the act of learning

The students are involved in a set of activities in which there are multiple agencies watching and assessing performance - the team mentor, the facilitators, spies from the other teams, student mentors, and even the reflector within the team. Student teams must construct learning so they can share this learning publicly with the other teams by having the spokesperson teach other teams or enter into competition with other teams during problem solving challenges. During every activity, the students are consistently challenged in their critical thinking processes and skills. The recorders' writing to learn is being assessed for quality of articulation of understanding. (Bonwell & Eison, 1991)

Personal Factors

Life Challenges:

Transforming past problems
into growth opportunities

The pressures and demands of everyday life in an increasingly more complex world make learning more challenging. To be successful in life, as well as in college, learners must produce strong learning performances with less sleep, exhausted from hours of work, nursing a sick child, or while caring for an aging grandparent. On top of this, when a divorce happens, a job is lost, an accident occurs, a family member or friend dies, or life's greatest possessions are stolen, the recovery must be quick and effective. Thus, improving the emotional skills like persisting, coping, responding to failures, and adapting to change are critical to the resilience that is needed to overcome the difficulties that arise from personal factors (Smith, 2014). As the other learning to learn components progress, like higher levels of learning, improved learning skills, and identity as a learner, so does the proactive problem solving capacity for addressing these personal factors.

Making the Right Choices:

Making a better future

Early in life, most personal factors of your circumstances are the result of decisions by parents, guardians and extended family. As individuals take ownership of the decisions that shape their lives, a critical shift begins. They stop thinking of themselves as victims and start being empowered individuals

who assume full responsibility and accountability for their decisions and their lives. On the other hand, if you allow important decisions to be made for you (by parents and others), many people see you as a victim, make excuses for you, think less of you, and expect less of you. Once you take ownership of your decisions and their consequences, others will stop treating you as a victim and start to respect you. By making better life decisions, you will have fewer future personal factors. As these factors are reduced, your life will improve and so will your learning performance (McDermott, 2014).

Synergy of the Components

These thirteen essential components of the five areas of Learning to Learn performance are interrelated and interdependent. They are all based on the notion that learning is a process and a performance that can be improved. Moreover, improving one component of the learning performance will improve other components of the learning performance as well. Critical thinking can occur more effectively if there is a framework like a methodology to prompt questions. Effective critical thinking requires that students have a strong identity as a learners. Students who know the levels of learning and use the Learning Process Methodology are more effective in generalizing knowledge and solving problems. Knowing that there are different types of knowledge that require different learning approaches supports the development and use of different types of learning skills. Students who improve their learning skills will be able to learn different forms of knowledge and solve a variety of problems more effectively. Learners who are mindful of these thirteen essential components of the five areas of Learning to Learn performance will prosper in any learning environment and in life.

References

Amel, S. H. (2008). *Reflection on students' self-efficacy expectancies: Paving the path to better achievement outcomes in higher education*. OECD Programme on Institutional Management in Higher Education. Retrieved from <http://www.oecd.org/edu/imhe/43977414.pdf>

Atherton, J.S. (2013). Doceo; *Forms of knowledge* [Online: UK] retrieved 8 December 2014 from <http://www.doceo.co.uk/tools/forms.htm>

Barell, J. (1995). *Working toward student self-direction and personal efficacy as educational goals*. North Central Regional Laboratory. Retrieved from <http://www.ncrel.org/sdrs/areas/issues/students/learning/lr200.htm>

- Beyerlein, S.W., Ford, M. & Apple, D.K. (1993). *Using a learning process model to enhance learning with technology*, IEEE 1993 Frontiers in Education Conference. Retrieved from <http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=405482>
- Bonwell, C., & Eison, J. (1991). *Active learning: Creating excitement in the classroom* AEHE-ERIC Higher Education Report No. 1. Washington, D.C.: Jossey-Bass.
- Brna, P., Baker, M., Stenning, K. & Tiberghien, A. (eds.) (2002). *The role of communication in learning to model*. Mahwah, N.J. : Lawrence Erlbaum Associates. Retrieved from <http://homepages.inf.ed.ac.uk/pbrna/communicatebook/contents.html>
- Davis, D., Beyerlein, S.W., Leise, C., & Apple, D.K., (2007). Cognitive Domain. In S. W. Beyerlein, C. Holmes, & D. K, Apple, (Eds.), *Faculty guidebook: A comprehensive tool for improving faculty performance* (4th ed.). Lisle, IL: Pacific Crest.
- Elger, D. (2007). Theory of performance. In S.W. Beyerlein, C. Holmes, & D.K, Apple, (Eds.), *Faculty guidebook: A comprehensive tool for improving faculty performance* (4th ed.). Lisle, IL: Pacific Crest.
- Farrington, C.A., Roderick, M., Allensworth, E., Nagaoka, J., Keyes, T.S., Johnson, D.W., & Beechum, N.O. (2012). *Teaching adolescents to become learners. The role of noncognitive factors in shaping school performance: A critical literature review*. Chicago: University of Chicago Consortium on Chicago School Research. Retrieved from <https://ccsr.uchicago.edu/sites/default/files/publications/Noncognitive%20Report.pdf>
- Goleman, D. *Emotional intelligence*, [blog] Available at: <http://www.danielgoleman.info/topics/emotional-intelligence/> [Accessed: 20 Oct 2014].
- Johnson, D.W. & Johnson, R.T. (1990, January). *Social skills for successful group work*. Retrieved from http://www.researchgate.net/publication/234590538_Social_Skills_for_Successful_Group_Work/file/60b7d5261b54ebe322.pdf.
- Kolb, A. & Kolb, D. (2010). *On becoming a learner: The concept of learning identity*. Retrieved from <http://learningfromexperience.com/media/2010/05/on-becoming-a-learner-the-concept-of-learning-identity.pdf>
- Krathwohl, D. (2002, Autumn). *A revision of Bloom's taxonomy: An overview. Theory into practice*, Volume 41, Number 4. Retrieved from http://www.unco.edu/cetl/sir/stating_outcome/documents/Krathwohl.pdf
- McDermott, D. (2014). Decision making confidence — The effects of bad decisions <http://www.decision-making-confidence.com/effects-of-bad-decisions.html>
- Price, Derek V. (2005). *Learning communities and student success in postsecondary education*. New York, N.Y.: MDRC. Retrieved from http://www.mdrc.org/sites/default/files/full_421.pdf
- Smith, T. (2014). Does teaching kids to get ‘gritty’ help them get ahead? National Public Radio <http://www.npr.org/blogs/ed/2014/03/17/290089998/does-teaching-kids-to-get-gritty-help-them-get-ahead>
- Vega, V. & Terada, Y. (2012). Research supports collaborative learning. *Edutopia*. Retrieved from <http://www.edutopia.org/stw-collaborative-learning-research#graph0>