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This chapter offers an introduction to learning transfer and the major concepts related to this topic. Encouraging the intentional use of learning transfer in adult and continuing education settings is emphasized.

Learning Transfer and Its Intentionality in Adult and Continuing Education

Jeffrey M. Foley, Leann M. R. Kaiser

What Is Learning Transfer in Adult Education?

Three unemployed adults sign up for a back-to-work course at their local workforce education center. The course is designed to cover quite a bit of information in a series of classes spanning 3 weeks such as resume writing, completing electronic applications, interview skills, and other job-hunting skills. The instructor is well versed in workforce theory and has facilitated this course many times. To ensure that the participants have the information they need to successfully find employment, the instructor has put many hours into PowerPoint slides, handouts, and other job-searching resources. The course went quite well, and the end survey sheets indicate that learners "gained a lot from the course."

Each of the learners in this course was motivated to attend and is eager to gain employment. After the course, Sue's head is spinning; there was so much information that she is finding she is spending a lot of time going back through the handouts. Bob, however, feels like he absorbed all of the information, yet he is having a very difficult time figuring out where to start and how to proceed. Alice attended the course a few times before and has a high level of mastery over the skills she needs to move forward—her challenge is finding the confidence to implement the right set of actions to secure a job.

These learners had a good experience in this course, and the instructor had sincere intentions of helping the learners prepare to gain employment. The disconnect is that the instructor did not design the instruction with learning transfer in mind. If the instructor had implemented specific instructional

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strategies that focus on learning transfer into the course design, the learner should leave the course with a greater likelihood of applying the new knowledge and skills to help him or her attain a job. This issue of *New Directions for Adult and Continuing Education* focuses on how to design instruction to enhance learning transfer in adult education and training settings.

Broad (1997) defined learning transfer as the "effective and continuing application by learners—to their performance of jobs or other individual, organizational, or community responsibilities—of knowledge and skills gained in the learning activities" (p. 2). Merriam and Leahy (2005) reviewed the available empirical studies in adult education and learning transfer from 1990 to 2005, noting that much of it came from human resource development and training areas. Within the research they reviewed, the focus was generally on the transfer of a skill, learned in school or work training, to the workplace. Although narrow, this research focus is not surprising. These are settings in which a return on investment of the time, energy, and financial resources dedicated to training is key to both the success of the business and the continuation of training programs. Thus, the vast array of other adult learning settings to which the learning may be transferred has not been well documented in the literature. On a practical level, this also means that few adult education and training programs account for transfer (Merriam & Leahy, 2005). Yet there is a strong need to foster learning transfer in all areas of adult learning such as work skills, life skills, adult literacy, and English as a second language (ESL), just to name a few examples. Think for a moment about a course, seminar, or training that you facilitate. In this context, what measures do you take to ensure that transfer occurs? Asking this critically reflective question is the key to designing learning for transfer.

An additional implication, stemming from the fact that most of our knowledge about adult learning transfer originates in workplace training literature, is that the research does not discuss in any depth the ways that learning transfer also applies to, and among, school, community, family, and life situations. There are myriad combinations of where or when learning may occur and to where it might be transferred. The scenario many people would think of first is learning a skill in the classroom and then being able to use that at work or at home. But learning transfer in adult education extends far beyond this. For example, an informal learning situation such as gathering information on gardening from a web site to grow vegetables might result in this same individual's transferring that knowledge to also grow flowers. Or perhaps a nonformal ESL course allows the learner not only to pass an exam at the end of the course but also to communicate in a grocery store. We know that adult education finds its home far beyond the formal classroom, and this is also the case for learning transfer. Thus, learning transfer is not only a good idea to keep in mind when designing and facilitating adult learning; it is also fundamentally tied to all adult learning. Calais (2006) stated this relationship well by noting that we are always working toward transfer of learning because

"we constantly perceive and interpret new things in light of our past experience" (p. 6).

Models of Transfer

Various distinctions in learning transfer have been discussed in the literature. Included here is a brief overview of several of the major concepts.

Near and Far Transfer. *Near transfer* refers to when a new situation is closely similar to the original learning situation. Near transfer usually includes specific concepts and skills such as learning to drive a car and then using those same skills to drive a truck. Conversely, in *far transfer* the original and new situations are dissimilar. The learner may not automatically understand the connection between the two situations (Detterman, 1993). As an example of far transfer, a student may learn math skills and then use the problem-solving skills fundamental to that math to design an electrical circuit.

High- and Low-Road Transfer. Perkins and Salomon (1989) argued that while near and far transfers do occur, far transfer does not occur as readily for many students. Simply understanding the idea of far transfer itself does not give a facilitator the tools to teach for far transfer. Thus, Perkins and Salomon introduced low-road and high-road transfer. In low-road transfer, a skill is well practiced in a learning setting and a learner can replicate it when the circumstances are similar to the original learning context. The replication occurs in a reflexive and automatic manner. High-road transfer involves more assistance for a learner to be able to reflectively think about what was learned and then deliberately abstract from the original context to connect it to other contexts. This assistance may take the form of encouraging cognitive understanding, purposeful and conscious analysis, mindfulness, and application of strategies across disciplines. High-road transfer is not dependent on identifying superficial similarities, but rather understanding deeper analogies.

Positive and Negative Transfer. We are always interpreting our current experience in light of our previous experiences. This can affect learning transfer in two ways. With positive transfer, learning from a previous context complements a current context. In other words, the experiences from both are complementary and in agreement. In negative transfer, previous experiences interfere with learning and transfer into a new context. When negative transfer occurs, a person is unable or unwilling to see how learning might be used in another context because of contrary experiences, expectations, or connotations between the two (Leberman, McDonald, & Doyle, 2006). For example, a person may have learned Spanish, but that knowledge may confuse the same person when he or she is trying to learn German.

Haskell's Taxonomies for Transfer of Learning. Calais (2006) described a slightly different way of categorizing learning transfer rather than the dual classifications previously used. Calais used Haskell's Taxonomy, which includes six progressive levels of learning transfer: nonspecific, application,

context, near, far, and displacement/creative. Calais argued that only the near, far, and displacement/creative levels require something new to be learned, and thus may result in transfer. Calais continued by stating that there are not only levels of transfer but different kinds of transfer. The first kind is based on types of knowledge (for example, declarative, procedural, or theoretical). The second kind is based on types of transfer, including content-to-content transfer, vertical transfer, and relational transfer. Haskell's Taxonomy is complex and not the focus of this chapter, but for more details, refer to Haskell (2001).

Barriers to Learning Transfer

Learning transfer may be a basic assumed outcome of most, if not all, learning situations. Educators want learners to be able to use knowledge or skills gained under their guidance in other situations. Even an individual engaged in learning without a facilitator most likely intends to take something forward from that learning.

While understanding the importance of learning transfer is not a point that needs to be belabored, it is imperative to understand that simply taking part in a learning transaction does not guarantee that the expectation of transfer will occur (refer to the scenario at the beginning of this chapter). In fact, each chapter in this issue examines different situations and methods through which the likelihood of learning transfer can be enhanced for adult learners. Thus, before these ideas on achieving transfer are explored, it is important to understand some of the potential barriers to learning transfer.

Thomas (2007) noted that barriers to transfer can be encountered before, during, and after the learning experience. A lack of foundational knowledge upon entering a learning situation, a lack of motivation or confidence during the learning, and a lack of support afterward can all adversely affect transfer. Lightner, Benander, and Kramer (2008) continued the discussion on barriers by noting that common classroom practices may not facilitate transfer. These include the facilitator's not modeling, rewarding, encouraging, or giving opportunities to express and practice transfer. Lightner et al. also discussed that facilitators who assume the learner needs to take on the responsibility to achieve transfer find less success in transfer occurring. An example might include a facilitator who does not demonstrate that the computer skills a learner gains to increase workplace proficiency can also be used to communicate with family or plan a budget.

Illeris (2009) argued that learning transfer difficulties often occur across learning space boundaries, for example, when something learned in school needs to be transferred to the workplace. He noted that integration projects between learning spaces are important to encourage transfer. Illeris also asserted that the "transferability of different kinds of learning processes and learning outcomes appears as directly dependent on the type of learning (cumulative, assimilative, accommodative, or transformative) and the resulting

knowledge" (p. 144). Thus, it is important to develop learning activities that encourage all four learning types. (For a further explanation of the learning types, see Illeris, 2009). Hager and Hodkinson (2009) continued this line of thinking by proposing that we should go as far as abandoning the term *learning transfer* and "think instead of learning as becoming within a transitional process of boundary crossing" (p. 635). They argued that these boundaries are not just between school and work but other areas such as parenthood and retirement.

Finally, one of the most basic barriers to transfer is overlooking it in both design and facilitation phases. Simply ignoring that transfer needs to be accounted for, and that it may not occur on its own, is a common but costly mistake. This idea will be further addressed in the subsequent chapters in this issue.

General Tools to Improve Learning Transfer

Increasing learning transfer essentially entails integrating effective processes and methods of instruction into daily practice. Strategies such as scaffolding, schema theory, purposeful reflection, repetition, concept mapping, and utilizing a diversity of instructional methods increase learning transfer (Ford & Weissbein, 1997). Often, the challenge is determining where to integrate these tools into instruction when facilitators are already so bound for time, resources, and energy. The critically reflective facilitator of learning will not attempt to "add" these tools to instruction but actually replace less effective tools with more effective ones.

Scaffolding. Picture a little girl learning how to ride a bike. If she is given a bike and told to go ride, any number of outcomes are possible. However, if the girl is provided safety equipment, training wheels, support, and encouragement, the structures are in place to help the girl master the goal of riding a bike. As the girl practices, she finds that the training wheels are cumbersome and are keeping her from riding in a way that she wants. The training wheels can be taken off and the next step to learning can take place. If this step does not work, the training wheels can be put back on until the girl is more comfortable with the feel of the bike. In the end, the girl discovers that with some confidence and muscle mastery she can ride anywhere she wants without the additional supporting structures that were once necessary. While this is a simplistic example of scaffolding a learning experience to best ensure mastery of a given learning goal, it is an experience many are familiar with and is easily relatable.

Scaffolding a learning experience is a combination of ensuring that the learning environment, instructional plan, supporting resources, and instructional delivery are structured in a manner that best supports learning. Scaffolding in construction helps support the building process. The scaffolding does not actually build the building, the worker does. The scaffolding is

just a temporary tool that assists the worker in the construction process. So is instructional scaffolding just a temporary tool that assists the learner in the process of constructing knowledge. The art of facilitating learning is to provide the necessary structure and support to assist the learner in constructing his or her own way of knowing.

Scaffolding can take on many forms of support. In the simplest terms, the facilitator of learning wants to ensure that the learning environment is a safe and energetic place for learning to occur. Being conscious that the setup of the room, the temperature, the light, and the sound are significant physical factors of establishing a learning environment is important. The next level is emotional safety where specific attention is paid to inclusivity, language bias, and sociocultural diversity. Then there are the considerations of openness, communication style, and choice of instructional methods. While individually these forms of support may seem simple to control, in totality they have a large impact on the conductivity of the learning environment for learning and learning transfer.

More complex forms of scaffolding in the learning experience focus on authenticity. The written, audio, visual, and tactile resources introduced into the learning environment serve as scaffolding to support learning. The key to the effectiveness of the resource is relevance. The more relevant and authentic a learning resource is to the actual applied end use of the learning, the more impactful that resource will be to learning transfer. For example, a learner can be shown how to use a word processing program, but that does not automatically mean that he or she can then write a thesis. Even though the intent was to have the learner master a word processing program, the gap between the known (word processing program) and the unknown (writing a thesis) was too large for learning transfer to take place.

Another form of scaffolding pertains to community learning and problem-based learning. In community learning or group learning situations, the learners serve as the temporary support structure for each other in the learning process. In problem-based learning, the learners take on successively more difficult tasks or problems as they master the current challenge. Both of these learning methods are discussed in depth in the chapters in this issue.

In reading this information on scaffolding, the concern may arise that these are just good instructional methods, rather than directly relating to increasing learning transfer. This is one case where the absence of a phenomenon defines the outcome. Without scaffolding, the learner can spend a majority of the time devoted to learning just trying to develop a foundation and frame of reference for the learning. The time spent struggling to grasp specific concepts that could be supported by scaffolding instruction directly eats away at the time for the learning, mastery, and building toward learning transfer.

Schema. Schema is the concept that information is organized by the learner in specific patterns or order. Our schemas are changed or modified by our interaction with the world through sight, sound, taste, and communication. As we interact with a new phenomenon, we compare and contrast those

phenomena with what we have previously experienced. Our current way of knowing and the foundation of how we interact with the world is often referred to as a worldview. Thus, schema is the foundation or fabric through which we form our worldview.

In its simplest form, schema is how we categorize information. If we consider our brain as an elaborate filing system, our schema is organized in drawers of similar information so that it is easier for us to recall information as well as to retain new information. If you see an animal that has four legs, a tail, and pointy ears, you brain quickly goes to the animal file drawer, sorts through and pulls out the file for "cat." Most people are familiar with the domestic house cat, but there are many types of cats, large and small, that all have these same features. When we see a different type of cat, we recognize it as a cat, learn what this new cat is—perhaps a lion—and add it to our file on cats and easily store it away. Good facilitators of transfer find ways to help learners activate (or find the file for) their existing schema that is related to the learning at hand. This increases the likelihood of retaining this new information for later application.

In a more complex example, picture an adult learner who finished his primary and secondary education 20 years ago. He experienced a very traditional form of education where the professor (*Latin*: person who professes) was the center of knowing and the deliverer of knowledge. This learner has held to this view of education for the entirety of his adulthood to date. Because of a recent layoff, this learner has decided to return to higher education in hopes of increasing his employability. When he enters the classroom for the first learning session, he is greeted by a facilitator who uses a collaborative and co-creating (constructivist) method of facilitating learning.

In this learner's current worldview, the role of the facilitator is to impart knowledge to the learner. The student's role is to take or absorb that knowledge and at some point prove to the facilitator that he or she has mastered the concepts. Yet in this current situation, the role of the facilitator is to serve as a facilitator of learning, create a safe and energized learning environment, and engage the learner(s) in the co-construction of new ways of knowing. The learner's role is to directly engage in the learning with the support of the facilitator.

This learner should be supported in making a modification to his worldview based on his current schema and the new information at hand. The question becomes: How can a facilitator provide the support and resources to assist a learner in making this modification? The chapters in this issue provide examples of how to support learners as they challenge their known schema and integrate new information into their worldview. When reading these chapters, try to keep the concept of schema as a mental frame through which to explore different approaches and methods to facilitating learning.

Purposeful Reflection. In a traditional teaching and learning paradigm, information is presented by the facilitator through lecture, PowerPoint, or

other delivery techniques (Palmer, 2007). When the learning session is over the learners are left to interpret the meaning of the subject presented (or not). Purposeful reflection is a tool that can be introduced into instruction that helps the learner stay engaged with the subject and to start laying roots for meaningful transfer by creating relevance. The word *purposeful* is used as an indicator that this is a guided form of reflection and not just a general reflection on the subject.

Picture a facilitator who just delivered an energetic and engaging PowerPoint presentation that explored the roots and development of adult education. The facilitator has about 10 minutes left in class and asks the learners to take out a sheet of paper and answer this question: "In the context of the material presented in class, please think of an adult learning situation that you have participated in recently (another class, a training, etc.) and try to identify similarities and differences from your experience to one of the roots of adult education that was covered in the presentation." So instead of just asking, "Please reflect on the material presented today and summarize the main points" (which is a valid classroom assessment technique in itself), the facilitator is asking the learners to draw relevance between the subject covered and one of their life experiences. That is purposeful reflection.

Here are some suggestions for purposeful reflection:

- Attempt to tie real experiences to the presentation of theory or concepts.
- Allow for a pause between questions when facilitating a discussion.
- Encourage alternative solutions to problems presented and encourage different or dissenting viewpoints.
- Have three or four reflective activities at the ready for when you might need them.
- Use electronic discussion boards, blogs, and the like to encourage reflection and sharing outside of class.
- Make sure that reflections are directed toward achieving the stated learning outcomes.
- Use the reflective process to move toward higher levels of critical thinking as indicated in Bloom's taxonomy.
- Ask the learners to step out of their dominant worldview and experience the situation or problem through another's eyes.

Purposeful reflection is a powerful tool that enhances learning transfer in adult learning. The key to successful purposeful reflection is to be intentional in integrating this method into instruction and out-of-class assignments.

Repetition from Multiple Aspects. Repetition has been a long-standing tenet of education. Repetition is the revisiting of information at different points of time. From a cognitive theory perspective, the brain reinforces learning and strengthens neural pathway connections in part through repetition. While rote learning is memorization and recall of information without knowing the relevance, we recommend revisiting information from multiple aspects

and different contexts to increase the likelihood of the learner making connections in his or her unique settings. Facilitating learning sessions that help the learner gain mastery of the new knowledge and skills increases the like-lihood of learning transfer.

Concept Mapping. Concept mapping is a tool that allows the learner to externalize a thought process or new information and then manipulate the individual pieces into a more cogent picture or flow process. Figure 1.1 is a concept map created for a research study.

The key elements of this concept map are the central theme, the major dependent and independent variables, and the sub-variables. This concept map might first appear to be very complex and difficult to interpret. But once learners are able to externalize all of the different variables, they can then start grouping and organizing the information into logical groups and then find the central theme (inductive reasoning). When facilitating the use of concept maps, the learner might start with a general theme and break the information into smaller parts or groups (deductive reasoning). Also, the learner can take one group of variables and move them from one side of the concept map to the other if that makes more sense. Concept mapping allows learners to organize, group, move, and reorganize information as they gain mastery over the information and the organizing process.

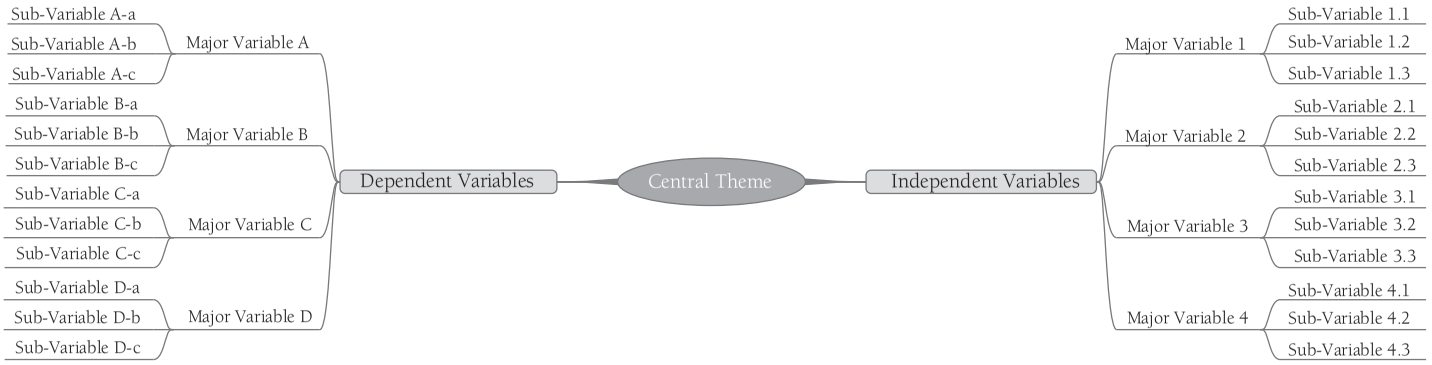
Diversity of Delivery Methods. Integrating a multitude of delivery methods into instruction can improve learning transfer. The brain loves stimulation. If facilitators find themselves falling back to the same delivery method for each class, they may find that their learning environment is becoming stale. A recent study (CDW-G, 2012) highlights that in the past two years half of higher education faculty report a shift away from the traditional lecture model, integrating group learning projects, self-paced study, virtual learning, and collaborative projects into their instruction. Some programs are moving to a flipped classroom where the lecture portion of the class is recorded so that the learner can access the information any time prior to the class via the Internet, and class time is devoted to interactive and experiential approaches to learning.

The ultimate goal is to identify what the learners need to best master the subject or content and choose the best methodology to engage those learners. This does not mean the death of traditional lecture, but allows the facilitator of learning to integrate lecture where it is the best tool to engage the learner in meeting the learning outcomes.

Learning Transfer: Revisiting Its Importance to Adult Learning

In this chapter, a cursory review of learning transfer, its role in adult learning, and the major models and tools related to the transfer of learning were discussed. The remainder of the chapters in this issue strive to add the necessary detail and context to this topic. For a facilitator practitioner involved in the

Figure 1.1. A Concept Map.



instructional design or facilitation process of adult learning, learning transfer is not an idea that can or should be ignored. This is not to suggest that practitioners do not want their learners to be able to take forward what they have learned and apply it in other situations. Rather, with few conversations happening around this topic, they may not have the available resources to achieve this goal. Thus, beginning with a foundation on learning transfer as shared here is an important starting place to encourage a greater awareness of the importance of planning for learning transfer in adult learning settings.

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JEFFREY M. FOLEY is an assistant professor in the Adult Education and Training Program at Colorado State University.

LEANN M. R. KAISER is an assistant professor in the Adult Education and Training Program at Colorado State University.