Reconceptualizing Learning Transfer: A Preparation for Future Learning

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Abstract: This paper examines current views and definitions of learning transfer as well as their dominant characteristics. An alterior way to view learning transfer as preparation for future learning (PFL) is presented along with its defining features. This paper is divided into five sections: (a) what comprises learning transfer, (b) the conventional views and characteristics of learning transfer (c) PFL learning theory and its assumptions (d) sought after transfer outcomes (e) and how a reconceptualization can help adult and continuing educators.

Keywords: direct application, sequestered problem solving, situated learning, continuous learning, integrative learning

All educators want learning to have an impact beyond the exact conditions of initial learning (Bransford & Schwartz, 1999) and the ultimate goal of participating in a workshop, class, or other educational pursuit is to transfer learning (Kaiseret al., 2013). According to Haskell (2001) "Transfer of learning is our use of past learning when learning something new and the application of that learning to both similar and new situations. … Transfer of learning … is the very foundation of learning, thinking, and problem solving" (p. xiii). Researchers refer to learning which extends beyond initial learning and is utilized in the future as learning transfer. However, many of the assumptions of educators, practitioners, and researchers which underlie learning transfer are inconsistent with the reality and needs of adult and continuing education students.

Because learning transfer has previously been understood in contexts outside of higher education, many of the underlying assumptions regarding learning transfer have pervaded into understanding learning transfer in higher education. Despite the need for universities to reconceptualize learning transfer to align with the ways it operationalizes in higher education, many academics, researchers, and scholars still cling to old ways of measuring learning transfer, creating a potential for misalignment between the goals of learning transfer in the aforementioned scenarios compared to many adult and continuing education students.

A reconceptualization of learning transfer to a new way of thinking, known as a preparation for future learning (PFL), can help educators, practitioners, and researchers in adult and continuing education to meet the needs of their populations.

What is Learning Transfer?

"Learning transfer, simply stated, is the ability to a learner to apply skills and knowledge learned in one situation or setting to another" (Kaiser et al., 2013, p. 1). Learning transfer, in a broad sense, covers the transfer of what is learned in one setting to another. Instances of learning transfer can include transferring learning to the home or to the community (Broad, 1997). Burke

and Hutchins (2007) describe learning transfer via three components: learning transfer must be generalized to a lived context, successfully applied to that context, and maintained over a period of time. Barak et al. (2016) described learning transfer as "a process in which the learner is able to function in a new situation (answer questions, solve problems, carryout assignments), according to what s/he learned in a previous situation" (p. 2).

Classic Views of Transfer

Learning transfer has often been measured in the form of skills transfer from workplace training to the job, especially in the corporate and HRD environments (Merriam & Leahy, 2005). According to Kaiser et al. (2013), "the vast array of other adult learning settings to which the learning may be transferred has not been well documented in the literature" (p. 6). However, learning transfer is found in a variety of fields and can take multiple forms. Bransford and Schwartz (1999), stated discussions around learning transfer often fall into two camps: the traditional practice of training for specific and final tasks or teaching broad skills which emphasize continuous learning, with the former dominating how most conceptualize learning transfer.

Preparation for Future Learning

Bransford and Schwartz (1999) called for a new way to measure transfer. Critical of the way most researchers view transfer outputs, they rejected many of the assumptions which underlie learning transfer outcome such as:
- Direct application
- Sequestered problem solving
- Course-centered learning objectives
- Carrying over of knowledge and skills
- Static and "snapshot" measurements

In contrast to the above assumptions, Bransford and Schwartz reconceptualized learning transfer as "assessments of people's abilities to learn in knowledge-rich environments" (p. 68) and sought to "reconceptualize transfer to directly explore people's abilities to learn new information and relate their learning to previous experiences" (Bransford & Schwartz, p. 69). Though not the first to suggest a shift to a preparation for future learning, Bransford and Schwartz explored reconceptualizing learning transfer as preparation for future learning.

Direct Application

Traditionally, many of the assumptions regarding learning transfer focus on direct application of learning to match transfer outcomes. Brandsford and Schwartz (1999) referenced Broudy (1977) who delineated three types of knowing: replicative, applicative, and interpretative. Replicative knowing centers on learners being able to directly reproduce what they learned into future transfer scenarios and has dominated most forms of learning transfer. Yet, replicative transfer is rarely a reality for learning in future transfer environments. Though much of the replicative knowing taking place in a classroom or training session is worthwhile and necessary, assuming the application of such material in a replicative sense to a future transfer environment is unrealistic. Rather than a replicative process, learning and training should be seen as necessary

building blocks for the future learning which takes place in transfer environments. The applicative and interpretative ways of knowing suggested by Broudy are more conducive to transfer outcomes which prepare a learner for future learning.

Sequestered Problem Solving

Many of the traditional ways to determine how well learning has transferred places students, trainees and the like into environments which are cut off from the environment. The assumption is students should possess the necessary learning and apply such learning as a result of their own learning without assistance. Yet, Bransford and Schwartz were critical of this practice because the sequestered environment used to measure transfer are not practical and therefore are unrepresentative of the pragmatic environments learners find themselves in. Notably, learners in sequestered environments are separated from practical resources which match future transfer environments, such as the following:

- Asking colleagues
- Consulting their notes ore texts from the course
- Trial and error
- Feedback from others
- Opportunities to revise (Leberman et al., 2006, p. 28).

The misalignment between the conditions learners are asked to perform under to demonstrate their transfer potential is often at odds with the practical resources offered to learners in their transfer environments.

Course Centered Learning Objectives

Rewriting learning objectives to acknowledge the role learning will play in future learning is an important aspect of reconceptualizing learning transfer. Many learning objectives are written within the context of the course without acknowledging the role learning will play in future transfer scenarios. A study conducted by Lightner et al. (2008) determined students may view learning objectives and course outcomes set by the instructor to be too idiosyncratic for transfer purposes. Thus, students see the learning gains they have made as being important to passing the course and not much else. When instructors explicitly state learning transfer as a course goal (and by extension its role in PFL), students can begin to make active connections between their learning and how it could affect future learning.

Situated Learning

Many of the dominant views of transfer view learning as a completed concept that can then be "carried over" to future or ulterior environments. Yet, learning theorists maintain learning does not cross environments without being affected by the circumstances of that environment (Hager & Hodkinson, 2009; Lave, 1998). According to Hager and Hodkinson (2009) "the successful move from one location to another, such as from school to work, is not a matter of knowledge transfer or of knowledge generalizability [sic]. It is an issue about learning" (p. 12). Hager and Hodkinson mean (and supported by Bransford and Schwartz) the successful transfer which happens when learners move environments is not a carrying over of key knowledge or skills but rather a preparation for the learner to learn in their future environments. Thus, learning is

situated in both the classroom/training environment, and again in the transfer environment.

Continuous Learning

Learning and subsequent transfer are constructions that are continually changing and redefining in context with learners in complex and diverse environments. Often in educational and training environments, the assumption is learning (or the learning material) are static concepts unchanging regardless of the place and timing of transfer environments. Hager and Hodkinson (2009) best captured the way learning transfer is understood via a preparation for future learning reconceptualization: "Rather than being the thing or substance … what is learnt is now a complex entity that extends well beyond the learner; a set of more or less complex practices; a social construction undergoing continuous change" (p. 7). When learners leave the classroom and begin to transfer their learning, what is learned is transformed; the contextual, cultural, unique circumstances at play affect the learning and change it from its origins and continues into the transfer environment.

Efficiency and Innovation in Transfer

Schwartz et al. (2005) suggested the best transfer outcomes must incorporate Broudy's (1977) three types of knowing: replicative, applicative, and interpretive. Each of the three represents degrees of efficiency and innovation in transfer, respectively. Efficiency in transfer is highly related to replicative transfer; people who are highly efficient can quickly and competently retrieve appropriate knowledge and skills to solve a problem (Schwartz et al.,). Most of the literature on learning and training transfer has focused on this outcome of efficiency (Schwartz et al.) While efficient outcomes are important and a necessity, outcomes with efficiency as the goal are best suited for environments with high degrees of routine with little variability.

Innovation in transfer is related to students understanding appropriate applicative situations for their learning and able to interpret when novel situations arise. Though distinct from efficiency, it should be noted many of the innovative transfer outcomes sought after rise from a high degree of content knowledge (Schwartz et al.). The best way to foster innovation as an outcome of learning transfer is to instill the belief continued learning is necessary for continued competency. Future environments, where transfer is operationalized, are rife with unpredictability in the form of changing scenarios, environments, major players, etc. In using innovation, "learners must reach beyond the immediately known …without knowing what the final goal state will look like at the outset" (Schwartz et al., p. 34).

PFL for Adult and Continuing Educators

PFL is an important reconceptualization for adult and continuing educators because the goal of learning transfer is to prepare students for future learning opportunities. Yet, according to Sousa (2017), "students' ability to apply knowledge to new situations is limited. Apparently, we are not doing enough in schools to deliberately make the transfer connections to enhance new learning" (p. 157). Naturally, such considerations emphasize if students possess the requisite knowledge to efficiently continue their learning in conjunction with an ability to further develop what is known? Reflection on this preparation requires the educator to consider both the "learning in" and "learning out" with PFL in mind (Schwartz et al., 2005).

Learning In & Learning Out

Understanding what students understand and possess in the way of knowledge is important (the transferring in) because it will profoundly affect what they learn (Schwartz et al., 2005; Sousa, 2017). Sousa (2017) stated, "The more connections that students can make between past learning and new learning, the more likely they are to determine sense and meaning and thus retain the new learning" (p. 157). Transferring out, when knowledge is used to engage in future learning and/or solve problems is important as well; as educators, the transfer out problems should be relevant and preparatory for students for their pragmatic future learning needs. The challenge is to prepare learners to transfer the necessary domain-specific knowledge as well as develop their capacity to interpret to new learning scenarios (Schwartz et al.).

Many formal education curriculums are predicated on the assumption students possess an appropriate knowledge base before joining a course (transfer in) and by the end of the course will be prepared to further engage in other coursework (transfer out). Yet, as is the case in most views of transfer, replicative information is expected to transfer out and less attention is paid to whether students can use an application to solve problems and practice interpretation in the interests of making good judgements. A greater emphasis on PFL, coinciding with Broudy's (1997) applicative and interpretive knowing, would prepare students for future learning in coursework, jobs, and communities.

Integrative Learning

Many students find the learning they complete in one instance can then applied to another course. A review of any curriculum in higher education reveals learning transfer is an integral component and expectation of the learning process (Sousa, 2017). Integrative learning outcomes are prevalent for many adult and continuing education students as they complete a course curriculum on their way to a degree or other educational pursuits. According to Sousa, when connections can be extended across curriculum areas, they establish a framework of associative networks that will be recalled for future problem-solving. Reconceptualizing learning transfer as PFL is highly conducive to fostering learning within curriculums.

Conclusion

Efficiency and innovation are two ways in which to measure the effectiveness of learning transfer. Many of the learning scenarios adult and continuing education students find themselves demand both replicative, applicative, and interpretative learning. Prior learning affects future learning as learning is continually built upon and developed. Reconceptualizing learning transfer outcomes to PFL helps students become continuous learners in preparation for the next learning challenge.

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