Connecting Learning Across Contexts: Teaching for Learning Transfer

Dr. Dana Lynn Driscoll, dana.driscoll@iup.edu
Professor of English, Jones White Writing Center Director

Learning Transfer: How knowledge, practices, strategies, tools, and learned in one context are adapted for use—or recognized as not usable or only partially usable—in new contexts including education, professional/workplace, personal, and civic (Driscoll, 2016).

What can transfer?
What kinds of learning can students transfer? Learning transfer research demonstrates that students not only transfer knowledge, but also skills, tools, strategies, and dispositions (Driscoll, 2016; Bronfenbrenner, 1994; Dweck 2006; Driscoll and Wells, 2012):

- **Knowledge:** Knowledge of the content of a discipline or field.
- **Practices:** How students can apply knowledge in hypothetical and real-world ways. This involves knowing how to implement that knowledge in a way that achieves a goal.
- **Tools and strategies:** Tools and strategies can help learners more effective at learning and transferring knowledge and practices. These include time management skills, study habits, research skills. These may also be how to behave as a professional in a field.
- **Learning-related Dispositions**: The "dispositions" are internal qualities that students bring to learning situations. They include persistence/perseverance, self efficacy, help-seeking behavior, emotional maturity, their mindset towards struggle and failure, etc.

Mechanisms that Support Transfer

Mindful Abstraction (Salmon and Perkins, 1989). The process where students "abstract" or generalize their knowledge from a specific context so that it can be applied in a variety of contexts.

Detection, Election, and Connection (Salmon and Perkins, 2012): In order for students to successfully transfer knowledge, they have to be willing to *detect* where knowledge might be used, *elect* to make the connection, and finally, *connect* that knowledge directly.

Preparation for Future Learning: Bransford and Schwartz (1999) argue we should teach for transfer by focusing on *preparation for future learning*. That is, we can emphasize an individual's preparation for learning in new contexts and should put students on a "trajectory toward expertise" (e.g. how well is a student prepared to engage in new learning which can aid the, in new settings? What tools do they have that move with them?)

Teaching for Transfer:
Transfer in, Transfer out, and Mindful Abstraction

"Transfer in" (Prior transfer): Knowledge that was learned in the past and can be used, adapted, and repurposed in new contexts.

- Creating a "toolkit" metaphor for their knowledge at the start of the term; students can repurpose or add tools as the course progresses
- Reflecting on previous learning experiences and key knowledge

- Asking them to engage with use prior knowledge and then showing how it will be built upon in course
- Activities that require them to draw upon previous prerequisite course knowledge in explicit ways

"Transfer Out" (Forward-Reaching transfer): Setting up students for knowledge transfer in the future. In order to be successful in transferring their knowledge, students must mindfully abstract their knowledge from the present and be prepared to adapt it in future settings.
- Asking students to use the same developing skillset for a variety of different problems in the course to "generalize" the knowledge
- Encouraging transfer between courses and subjects
- Reflective activity and self-identity as a growing professional with a key set of expertise
- Reflect on the learning in the course and where it goes next
- Discussion of the "box under the bed" metaphor to explicitly talk about transfer. (Students have what teachers call the "box under the bed" where, at the end of the semester, you put everything from your head into the box and shove it under the bed, to collect dust and you to forget about it. How can you make sure this course doesn't just go "under the bed"?) (Driscoll and Jin, 2018)

Mindful Abstraction: Helping students "generalize" or "abstract" their learning beyond a specific activity, course, or context:
- **Disciplinary courses**: Drawing upon real-world examples and real-world experts
  - Interviewing professionals practicing in the field, professional problems and case studies, professional practices, statements, procedures
  - Interviewing and internship experiences
  - For all of these: giving students opportunities to integrate their knowledge, reflect on their learning, and build key connections
- **General Education courses:** Stressing professional competencies gained through coursework
  - Connection of skills to career goals, Developing a professional knowledge bas, Encouraging transfer between your course and other major courses

Teaching for Transfer: Other Theories and Strategies

Transfer as an explicit course goal: build transfer as a goal for your course, consider it in class activities, assignment design, expert modeling, feedback and conferencing, larger program design, internship and field experiences, and more. (Driscoll, 2013).

Teach for transfer explicitly. For major assignments and concepts, allow students to explore connections between other courses, previous knowledge, future professional contexts, and so forth. It is better for students to discover these connections for themselves if possible (Driscoll, 2013).

Teach and engage students in productive theories of learning. Students often have unrealistic expectations about learning (e.g. handling struggle as part of learning, feeling you have to be

"born" successful or talented, etc.) that being challenged and struggling is part learning (Dweck, 2006)

Help students understand "Threshold concepts" (Meyer and Land, 2005). These are overarching concepts in a discipline that help students navigate many specific situations. For example, in writing studies, the idea that all writing has a specific audience, purpose, and fits a particular genre is a threshold concept—if you understand this, you will be a much more successful writer.

Give students achievable tasks that are substantially more challenging and distinct from previous experience both content-wise and genre-wise. (Haskell, 2000) Learning transfer happens more often when students build upon and go beyond previous experience.

Be mindful of students' dispositions and set positive learning objectives (Driscoll and Wells, 2012). Positive dispositions and habits of mind curiosity, persistence, openness, metacognition, and self-efficacy that help them approach learning more effectively and thus, be more able and willing to transfer.

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