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Insights from Educational Psychology Part 5: Learning as a Social Act

Steve Black
seblack@colgate.edu

James D. Allen
The College of Saint Rose, jimallen1700@gmail.com

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Insights from Educational Psychology Part 5: Learning as a Social Act

"... sociocultural theory does not avoid or deny recognition of the role of the individual in 'making sense' but examines that role in the context of processes of collective thinking activity and the creation of socially shared knowledge." Neil Mercer (2013, p. 164)

Learning is a cognitive constructive act. That is, people actively build meaning as they learn. This perspective on how people learn is known as individual *cognitive constructivism*, and is based on Piaget's cognitive development theory (Miller, 2010). Cognitive constructivism suggests that everything individuals learn is due to the mental schemes we construct as we interact with our environment (Schunk, 2016). However, learning is also almost always a social act. The view of learning as an individual cognitive construction is incomplete, because much of a student's academic learning occurs through reading and social interactions.

Reading is a social act, because engaged reading involves social interaction between the reader and the author. The authors of the works in our libraries wrote to reach an audience. Authors communicate with the intent of interacting with readers through their written words. Experienced readers conduct an internal dialogue between the author's words and their individual contextual understandings. Kintsch (1986) describes effective reading of texts as finding meaningful connections within the text that the author is trying to communicate to the reader, or between the author's expressions to the reader and the knowledge the reader already possesses. Either way, the reader is cognitively engaged in an implicit social interaction with the author. When we consider the case of library instruction, much of what a student learns comes from exchange of information between librarian and students, or perhaps exchange among students if collaborative learning is part of the instruction. Both types of information exchange

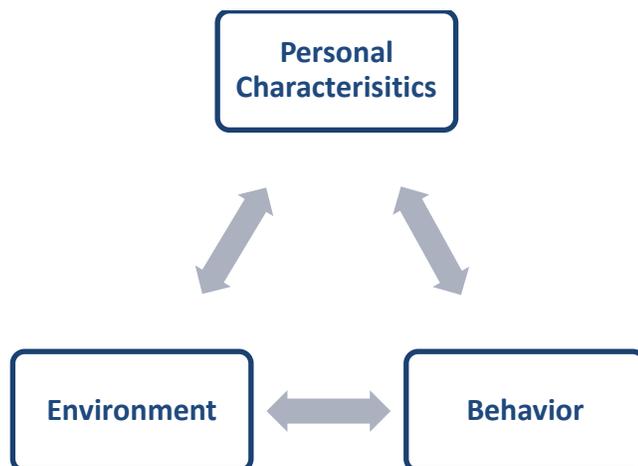
are social acts. Since most academic learning involves social interaction, many educational psychologists base their work on the theory of *social constructivism*. Social constructivism views learning as a product of interactions with others. For example, an individual can develop interest in a topic through interactions with parents, friends, teachers, or librarians (Bergin, 2016).

Two theories of learning have predominated in the last several decades of educational psychology research on how people learn. Both are grounded in the idea that learning is the product of social interactions. We will first introduce the *social-cognitive theory* (Bandura, 1989) and then describe highlights of the *socio-cultural theory* (Vygotsky, Cole, John-Steiner, & Souberman, 1980; Wertsch, 1979; Wertsch & Tulviste, 1992).

Social-cognitive View of Learning

According to Bandura (1989), a majority of what we learn in an academic environment is learned through observing and interacting with others. This is illustrated by the reciprocal influence of environment, personal characteristics, and behavior as depicted in Figure 1.

Figure 1: Triadic Reciprocity



Environment is both the physical setting (e.g., classroom, library, home) and the elements within the setting with which the individual observes or cognitively interacts. For example, elements of the environment could be teachers and their comments, other students and their comments, library collections, computer programs, or research assignments. Personal characteristics are the cognitive and affective characteristics that each individual brings with them to the learning environment. These include previous content knowledge, literacy skills, self-efficacy beliefs, motivational levels, attitudes, values, and emotions. Behavior includes the observable performances of the individual. Observable behaviors include academic performance, social and interpersonal interactions, and level of effort. Each of these three components mutually influences one another in a reciprocal manner.

For example, a student goes to the library to work on a research project on the internment of American-Japanese during World War II. Let us name this student Pat. The library and the assignment are key elements of Pat's learning environment. Pat has done the assigned reading for the course and therefore has a personal characteristic of prior knowledge. But Pat also happens to have a low sense of self-efficacy about how to use the library. Unfortunately Pat also wants to avoid revealing confusion about how to use the library. Pat's low self-efficacy and reluctance to reveal confusion cause Pat to not ask help from the librarian, and instead just find a random book and sit at a table. In this case the library environment activated Pat's personal characteristic of low self-efficacy, which then prompted the non-engaged behavior of not asking for help. The environment influences personal characteristics which then influence behavior. However, a classmate joins Pat at the table in the library, and immediately goes to the librarian to ask for help. The classmate comes back a few minutes later with a book on the topic and a strategy for how to find more information, and mentions how helpful the librarian was. Having

observed this, Pat overcomes reluctance and asks the reference librarian for help. The interaction goes well and Pat is relieved to save time and worry. In this case the behavior of the classmate influenced the environment, which in turn influenced the personal characteristics of the student in a way that changed Pat's behavior.

During this exchange in the environment, the student behavior was to observe the interaction between the librarian and the classmate and notice the effect of the exchange. This shifted the student's personal characteristics by inducing a positive attitude toward asking for help. The classmate's question also primed the librarian to be ready for a similar question, thus influencing the environment. Our example of Pat's experience shows how environment, behavior, and personal characteristics reciprocally influence the others in iterative processes.

Our example of this triadic reciprocity in the library is an example of vicarious or observational learning. In the social environment of the library where students engage in interactions with each other and the librarian, students observe the models set by classmates' behaviors. Students imitate classmates' academic behaviors via processes of attention, retention, reproduction, and motivation. That is, a student may direct cognitive attention to the specific behavior a model exhibits, retain it in memory, be capable of reproducing the observed behavior, and be motivated act. Pat's observation of a classmate interacting with a librarian is an example of how attention, retention, reproduction, and motivation can influence learning. To reiterate the crux of Bandura's theory, observational learning is based on these four processes: attention, retention, reproduction, and motivation (Bandura, 1989). All four processes are required for effective learning.

Observational learning only occurs when the observer has a reason to attend to the teacher, librarian, peer tutor, or whoever is offering the instruction. The social-cognitive theory labels the source of instruction the model. There are two major types of models that individuals generally focus their attention on, known as the *mastery model* and the *coping model* (Schunk, 2016). Mastery models are individuals who through expertise and skill have obtained a deep understanding and mastery of a subject. Content specialists, such as college professors and librarians, are examples of mastery models. Students who recognize the value of a mastery model will pay attention and learn, especially if the content being taught is personally meaningful. In our experience college students tend to appreciate mastery models within their majors, and be less attentive to mastery models in required general education courses. However, if the professor or librarian possesses mastery of pedagogical skills as well as content mastery, they can trigger students' attention to the subject. A truly attentive student is likely to retain information, be able to reproduce it, and be motivated to succeed academically. Librarians as mastery models can significantly influence students' interest in academic work.

The second type of model in social-cognitive theory is the *coping model* (Schunk, 2016). Students attend to a coping model because they share similar characteristics. Shared characteristics might include academic ability, age, major, or gender. A mastery model is typically a teacher or librarian, while coping models tend to be peers. A student who attends to a coping model has observed the model move from a less knowledgeable state to a more knowledgeable state in a content area within which the observer may be struggling. Coping models are often beneficial to students working on academic assignments in small groups. Each member of the group observes some peers overcome struggles to achieve success. Peer observation of a coping model who applies effort and determination to overcome difficulties and

succeed academically can inspire greater engagement. Tutors can be good coping models. Often the most effective tutors are individuals who at one point in their studies struggled with the same academic content that is the topic of the tutoring. These coping models often have insights that help them make clearer explanations to students than instruction from mastery models who may have seldom struggled with mastering the content.

Socio-cultural View of Learning

The socio-cultural view of learning is based on the premise that mental functioning is derived from the mastery and internalization of social interactions within one's cultural environment (Wertsch & Tulviste, 1992). The theory is rooted in the work of L. S. Vygotsky, a Marxist Russian psychologist who lived from 1896-1934. Vygotsky asserted that all learning comes from exchange of knowledge between individuals, and individuals are all products of their socio-cultural group. Exchange of knowledge between individuals leads to greater understanding of that knowledge within individuals. Translations of Vygotsky's work refer to interpersonal interactions as *intermental* functioning, and individual thought as *intramental* functioning. We will not use those terms here, but be aware that the extensive literature based on Vygotsky's ideas frequently refer to intermental (i.e. interpersonal) and intramental (i.e. individual) processes.

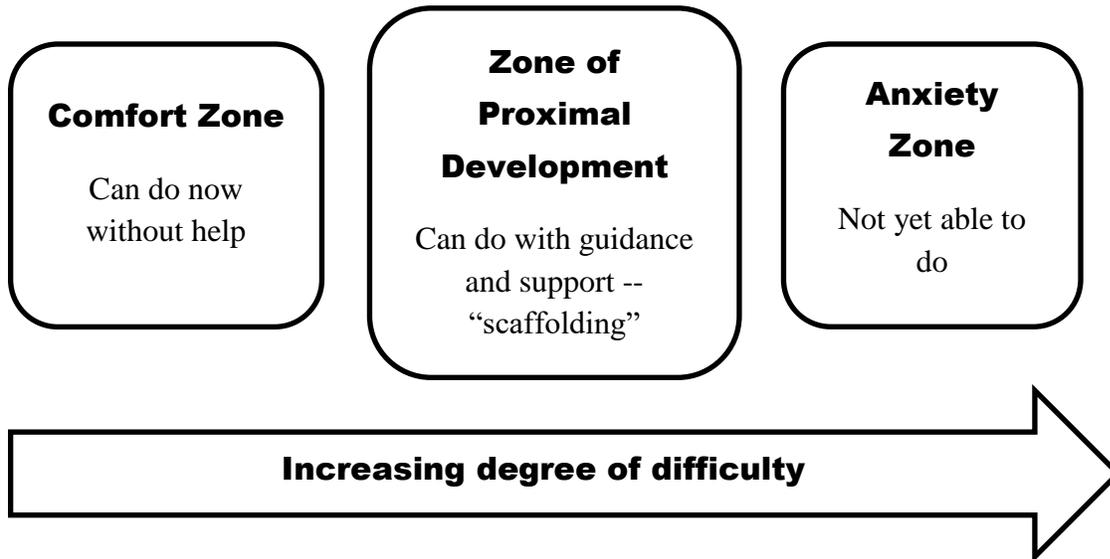
Vygotsky theorized that exchange of knowledge is accomplished through the psychological tools of a culture or social group that have developed historically over time (Wertsch & Tulviste, 1992). These culturally based psychological tools for the exchange of knowledge include verbal language and written texts. Language and writing develop within each socio-cultural group for the purpose of sharing information among the members of that group.

Thus, individuals living in different social or cultural groups will have different mental schemes about similar concepts. Individual understandings of concepts are based on how the person's socio-cultural group has historically learned those concepts.

The socio-cultural view has very important implications for education. The type of learning that occurs in very homogeneous groups of students is quite different from what happens in a heterogeneous group of students. The more homogeneous the group, the less diversity of thought is shared among the group members. The more heterogeneous the group members, the greater the diversity of ideas that may be shared within the group. Heterogeneous grouping provides wider and more diverse perspectives on what one is learning. When one brings people with different cultural backgrounds together, the diverse individuals bring to the group various cognitive constructions of relevant concepts. In other words, they bring to the table diverse assumptions about the world. Various assumptions and perspectives are the product of diverse socio-cultural constructions of knowledge. Thus, learning environments structured to foster social interaction among people with different ideas and conceptual knowledge expand both the breadth and depth of what can be learned.

A key instructional implication of socio-cultural theory is that teachers or librarians need to present information in a way that connects to what a student already knows, but that also forces them to engage with different perspectives. Vygotsky (Vygotsky et al., 1980) asserted that instruction should target students' level of potential development, rather than target their present level of development. He defined the *Zone of Proximal Development* as the psychological difference (zone) between the cognitive level of what one currently understands and can do independently and the potential cognitive level of what one can understand with support and guidance. The space where students can learn with guidance and support is depicted in Figure 2.

Figure 2: Zone of Proximal Development

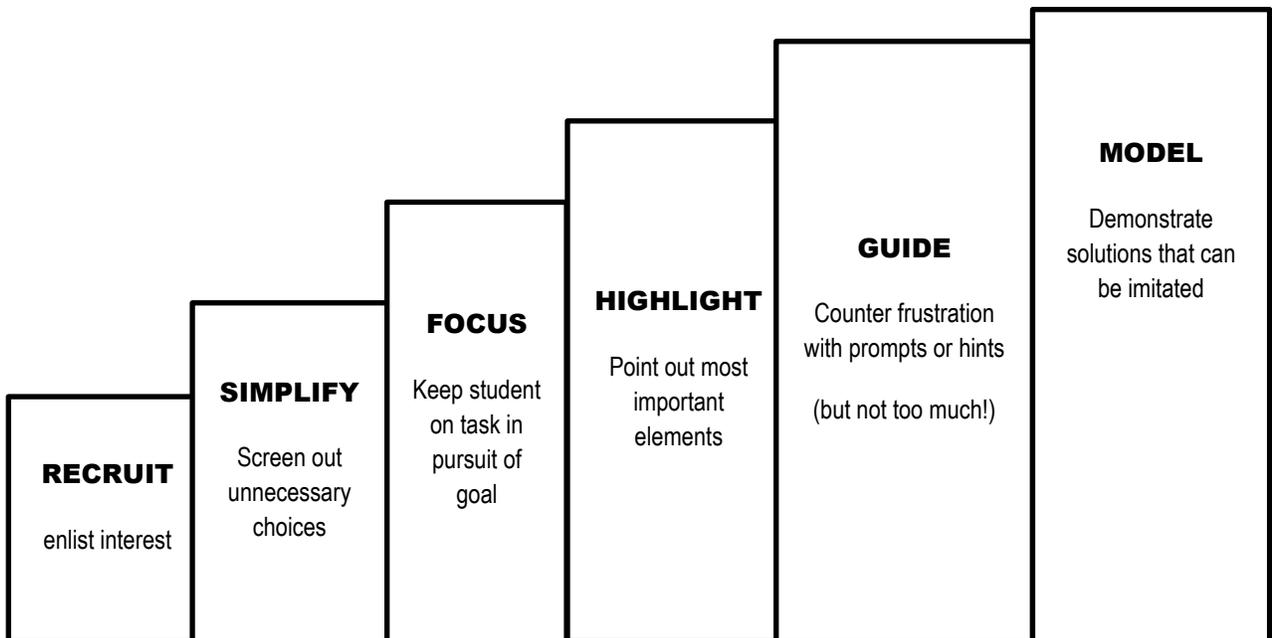


Support and guidance come from interacting with someone more knowledgeable about the concept or skill being learned (Wertsch & Tulviste, 1992). The exchange of one another's understandings of a concept helps each person develop a new understanding of that concept. The process of a well conducted reference interview is a good example of using the Zone of Proximal Development to help a student grow and learn. The librarian will probably have a more extensive understanding of how to do a literature search, but the student brings to the interactive dialogue a unique understanding of their chosen research topic. Through collaboration the librarian guides the student to learn beyond what they could do on their own. In educational psychology this type of guidance is often called *scaffolding*. Scaffold questions can be used to learn what knowledge the student possesses. Once the present level of abilities has been gauged, the librarian can engage in dialogue to connect the student's current knowledge with the librarian's knowledge. Modeling, explaining, and active listening are types of scaffolding strategies to help a student achieve more than they could on their own. A good reference interview is an excellent example

of scaffolding, even if librarians rarely use that term to describe the guidance and support we provide students.

The idea of supporting student learning by providing scaffolds has been interpreted in myriad ways. The term originated from a study of how tutors supported young children's ability to complete a task (Wood, Bruner, & Ross, 1976). They identified six elements of effective scaffolding functions the tutors provided to support learning, depicted in Figure 3.

Figure 3: Effective Scaffolding



Scaffolding strategies take many forms and can focus on both cognitive and motivational aspects of learning. Effective scaffolding strategies are recognized by the student as relevant to their work, are capable of getting the student to think or act in new ways, and include dialogue that confronts confusion and inconsistencies in thinking (Greene & Land, 2000). The Zone of Proximal Development is inherently uncomfortable for students, as learning beyond what they can do by themselves involves taking risk and trusting others. The many possible goals of a

scaffolding strategy can include establishing task value, promoting mastery goals, promoting belonging, promoting expectancy for success, and promoting autonomy (Belland, Kim, & Hannafin, 2013).

Recent work on Vygotsky's socio-cultural theory connects it to principles of evolutionary psychology and anthropology. Mercer (2013) argues that human cognition is a direct result of evolution. Humans have evolved to have what he calls social brains. "The nature and size of the human brain might also reflect the survival advantages of a more subtle kind of mental capacity, that of being able to make sense of complex social relationships" (Mercer, 2013, p. 150). Social brains have evolved through the development of the psychological tools of verbal and written language. Language allows for collective interpersonal cognitive activity. Interpersonal thinking and communication leads to individual intellectual development and learning. Mercer (2013) proposes that collaborative learning leads to individual intellectual development and learning in three ways: *appropriation*, *co-construction*, and *transformation*.

Appropriation means students can absorb information and learn strategies by observing others during joint activities. Appropriating information as one's own is the least complex result of collaborative learning. Language is the medium for transmitting information from one mind to another. Appropriation is a straightforward means of transferring information that does not usually induce self-reflection or metacognition (Mercer, 2013).

A second, and more powerful type of collaboration is the co-construction of knowledge and conceptual understanding. Co-constructive learning activities include dialogue and productive argumentation of ideas. Argumentation leads to joint construction of new ideas and strategies for completing academic tasks. The process of weighing different perspectives and

collaborating on a solution gives greater personal meaning to what is being learned. As a consequence, learning based on productive argument and co-constructed understanding is more generalizable and transferable than learning by an individual working alone (Mercer, 2013).

Transformation is the most complex outcome of collaborative learning. Mercer (2013) argues that co-constructive interpersonal communication can transform the nature of subsequent individual reasoning. If the cooperative learning activity requires each student to explicitly explain and support their reasoning, the argumentative dialogue will transform individual student's metacognitive awareness and regulation. The different perspectives shared among group members causes each individual's theory of mind to develop in response to the different points of view. Engaging in dialogue teaches individuals to internally consider and debate different points of view. Such internal dialogue would not develop absent interaction with other perspectives and engagement with different assumptions about the world (Mercer, 2013).

Although collaborative learning may be transformative in nature, Kuhn (2015) suggests that students' abilities to learn effectively in groups does not occur naturally. Argumentation is a skill that has to be learned and practiced. As we discussed in Part 3 (Black & Allen, 2017), if students are not taught argumentative skills during their high school experience, they will often not have developed the skills necessary for transformative collaborative learning. Since a major purpose of collaborative learning is to develop the social cognitive and metacognitive skills students will need later in their professional lives, it is very important to include argumentation in the curriculum (Kuhn, 2015).

Collaboration, Learning, and Transfer

Most academic, professional, and daily living tasks involve solving problems. A major purpose of school is to prepare students for successful personal and professional lives filled with problems to be solved. Therefore the knowledge and skills one learns in school should be transferable to real life problem solving. The main thesis of this installment of our series on insights from educational psychology is that practically all learning comes from social interactions. Recall that social interaction includes the inner dialogue a reader conducts with an author. So if one is to have success in academic, personal or professional relationships, it is important to consider how collaborating to solve problems can transfer to school, career, and daily life settings.

Mayer (1998) suggests that three elements are key to develop transferrable problem solving: skill, metaskill, and will. First, individuals must have the necessary content knowledge and learning strategies to solve problems. An example would be basic information literacy skills such as how to find books and articles relevant to a specific topic. Individuals also need metaskills, meaning metacognitive awareness of when to apply a skill. Determining the extent of information needed and understanding that research is inquiry are examples of metaskills. Finally, individuals need to have the will or motivation to put forth the effort to apply their skills and metaskills to solving real problems. It is for good reason that the *Framework for Information Literacy* (2015) includes dispositions, as the listed dispositions capture the motivations students need to apply information literacy to real problems. Information literacy is of little use without the will to apply it to real world problems. So it is important for teachers, librarians, and parents to do their best to make sure students have the knowledge, skills, and strategies to collaboratively solve problems. Practice with collaborative learning and productive argumentation promotes

metacognitive awareness and self-regulation, which in turn strengthens transferability of learning. When skills and metaskills are combined with the will to solve problems, students can transfer their learning in the classroom or library to new problems in other contexts.

However, transfer of learning requires these three acts: detect a similarity between what one already knows with a new situation, connect the knowledge or skill one possess to the new situation, and elect to pursue the connection between two related situations (Perkins & Salomon, 2012). Failure to detect, connect, or elect derails transfer of prior learning to a novel problem. These failures are more likely when students have been taught content or a skill in an isolated or superficial manner. Collaborative engagement helps students learn how to detect knowledge that can apply to a different context. But even when students can detect similarities between what they already know and a new situation, competing stimuli in the environment may interfere with making a connection. While being able to detect and connect does not guarantee that one will elect to apply learned skills to new problems, experience working in groups reinforces the ability to transfer problem-solving abilities.

This issue of transfer is why social collaborative learning activities are so important. When individuals with different skills, metaskills, and motivation levels work together to solve a problem, interpersonal collaboration generates richer personal understanding and promotes greater transfer of learning for all. Much of the research on collaborative learning has focused on young children, but there has been increased interest in collaborative learning on the college level. Svinicki and Schallert (2016) assert that for collaborative learning in college to succeed, the instructor must focus on learning goals and match the type of collaboration to the goals. They define four broad categories of learning goals: knowledge acquisition, knowledge application, knowledge creation, and discipline-specific discourse (Svinicki & Schallert, 2016). Say the goal

is knowledge acquisition, such as building foundational understanding or learning a discipline's vocabulary. One appropriate approach would be to use the jigsaw technique, whereby individuals are responsible for learning one section of the material and then teaching it to others (Svinicki & Schallert, 2016).

The reciprocal questioning strategy is another collaborative way to support knowledge acquisition. Guided Reciprocal Peer Questioning has been shown to increase retention of content knowledge, promote metacognitive skills and motivation, and lead to greater transfer of knowledge (King, 1990). The Guided Reciprocal Peer Questioning method teaches students how to write effective group discussion questions based on course readings or lectures, and then use those questions to collaboratively help everyone in the group gain deep and broad understanding. The central element to the method is to provide prompts designed to elicit questions that solicit high-level cognitive processing (King, 2002). After reading or listening to lectures, students create higher-order application, analysis, synthesis, and evaluation questions build upon generic question stems provided by the instructor, such as:

- How would you use . . . to . . . ?
- What would happen if ... ?
- What are the strengths and weaknesses of ... ?
- How does ... tie in with what we learned before?
- Explain why . . . Explain how ...
- How does . . . affect . . . ?
- What is the meaning of ... ?
- Why is ... important?

- How are . . . and . . similar?
- How are . . . and ... different?
- What is the best ... and why?
- Compare . . . and . . . with regard to ...
- What do you think causes . . ?
- What conclusions can you draw about ... ? (King, 2002).

With Guided Reciprocal Peer Questioning it is important to place students in heterogeneous groups by gender, major, culture, or other criteria to maximize the benefits of drawing on individual understandings. If the students all bring the same understandings to the group, no one will have to engage in different points of view. In a successful collaboration the interpersonal dialogue will lead the group to create shared meaning. The collaboratively produced shared meaning is richer when diverse personal understandings are brought to bear. This strategy of using question stems has been shown to effectively promote retention of course content and the ability to transfer the content to other contexts (King, 1990). Reciprocal questioning thus supports not only knowledge acquisition, it also supports knowledge application.

An effective technique for knowledge application and knowledge creation is *problem-based learning* (Svinicki & Schallert, 2016). Effective problem based learning requires students to work together to find solutions to ill-defined, open-ended problems. The key to problem based learning is to create good problems that allow room for disagreement and discussion, are open to elaboration, and that capture the interest of students (Svinicki & Schallert, 2016). *Project-based learning* is a variation of the same technique, with the added element that students are required to

create a presentation for a target audience. Project-based learning is particularly well suited to fulfilling the learning goal of knowledge creation.

The highest level learning goal to address with collaborative learning is the development of discipline-specific discourse, which fits with the information literacy concept that scholarship is a conversation. “Group activities associated with practicing disciplinary ways of talking and writing are helpful not only because they are effective and motivating but because they offer learning environments in which to practice the very discourse skills being learned” (Svinicki & Schallert, 2016, p. 545). Techniques for supporting this aspect of information literacy include peer response to writing and online discussion. These techniques can be effective for building fluency in a discipline so long as interaction among peers is both critical and supportive.

Librarians have an important social role to play in education. We influence the learning environment in many ways, and our interactions with students influence their developing personal characteristics and behaviors. A major theme in this part of our series is that diversity of perspectives enhances collaborative learning. Our next column will focus on insights educational psychologists have on the role of cultural difference in education.

Takeaways for librarians

- Be mindful that all aspects of the library environment can influence the development of personal characteristics and behaviors. The impact of students’ interactions in the library may not be immediately apparent.
- How we treat patrons impacts not only those individuals, but also potentially influences everyone those individuals interact with.

- When we model our mastery of information literacy, students can learn by observing what we do. Our modeling can significantly influence students' interest in academic work.
- Model not only what you know, but also the process of how you came to know it.
- In reference interviews show interest, stick to the most essential steps, encourage effort, accentuate key points, reduce frustration but leave ownership with the patron, and model how to find solutions to the problem.
- The guidance and support we give students should be recognized by them as relevant to their work and capable of getting them to think in new ways. Work to discover points of confusion or mistaken ideas and model solutions to overcome the confusion or error.
- The way we model problem solving and interact with students can transform how they reason.
- Learning collaboratively increases the transferability of knowledge and skills.
- If you use collaborative learning in library instruction, match the technique to the desired learning outcomes.

Recommended reading

Bandura, A. (1986). Social foundations of thought and action: A Social-cognitive theory.

Englewood Cliffs, NJ: Prentice Hall.

This classic work describes the primary principles of social-cognitive learning theory. The heart of the theory is a model of causal reciprocity between personal characteristics, environmental factors, and social behavior. The processes by which people learn from observing others is described in depth. Bandura also addresses how social interactions impact self-regulation and self-efficacy.

Belland, B. R., Kim, C., & Hannafin, M. J. (2013). A framework for designing scaffolds that improve motivation and cognition. *Educational Psychologist*, 48(4), 243-270. doi:10.1080/00461520.2013.838920

The authors assert that problem based learning does not necessarily engage students.

Scaffolding strategies need to address both cognition and motivation. They suggest guidelines for effective supports and provide a cited list of thirty scaffolding strategies. The comprehensive overview of what scaffolding is and the extensive citations make this an excellent entry point to the literature on effective scaffolding strategies.

King, A. (1990). Enhancing peer interaction and learning in the classroom through reciprocal questioning. *American Educational Research Journal*, 27(4), 664-687. doi:10.2307/1163105

King describes the socio-cultural foundations behind her research on reciprocal questioning, an instructional and learning strategy designed to promote retention and transfer of academic content. Reciprocal questioning is based on the need for students to relate to prior knowledge, reword ideas, note relationships, and generate new examples. Two studies compare the effectiveness of guided discussion versus non-guided discussion. Students who apply generic question stems to problems increase the quality of their learning.

Mayer, R. E. (1998). Cognitive, metacognitive, and motivational aspects of problem solving. *Instructional Science*, 26, 49-63. doi:10.1023/A:1003088013286

Mayer discusses the importance of developing cognitive skills, metacognitive strategies (metaskills), and the motivation (will) for students to become effective problem solvers. A main focus is on what it takes to transfer problem solving skills to novel situations. His discussion is

based on a constructivist view of learning and motivation based on interest, self-efficacy, and causal attributions. Skills, ability to recognize when to apply skills, and motivation are all necessary to transfer learning to new contexts.

Mercer, N. (2013). The social brain, language, and goal-directed collective thinking: A social conception of cognition and its implications for understanding how we think, teach, and learn. *Educational Psychologist*, 48(3), 1-21.

doi:10.1080/00461520.2013.804394

Mercer integrates research from the fields of anthropology and evolutionary psychology with Vygotsky's socio-cultural theory of cognitive development. He argues that collaborative learning towards a common goal leads to greater individual intellectual development. Interpersonal ("intermental") collaboration leads to individual ("intramental") understanding through the three processes of appropriation, co-construction, and transformation. Collective reasoning is a key element of a functioning society.

Perkins, D. N., & Salomon, G. (2012). Knowledge to go: A motivational and dispositional view of transfer. *Educational Psychologist*, 47(3), 248-258.

doi:10.1080/00461520.2012.693354

Transfer of knowledge and skills is often difficult to achieve because individuals often fail to detect, connect or elect to find the similarities between what they already know and how that might relate to a new situation. Transfer of learning comes easily if detect-elect-connect are prompted by prior learning, cues, or other clues. Perkins describes why seeing connections often exceeds students' capabilities.

Svinicki, M. D., & Schallert, D. L. (2016). Learning through group work in the college classroom: Evaluating the evidence from an instructional goal perspective. In M. B. Paulsen (Ed.), *Higher education: Handbook of theory and research*, v. 31 (pp. 513-558). New York: Springer.

The authors provide a thoroughly referenced overview of research on collaborative learning in college. Nine group work methods are described: jigsaw technique, guided reciprocal questioning, team-based learning, constructive controversy and collaborative argumentation, problem based learning, project based learning, computer supported collaborative learning, peer response to writing, and online discussion. Research findings and tips for maximizing effectiveness are provided for each method.

Wertsch, J. V., & Tulviste, P. (1992). L. S. Vygotsky and contemporary developmental psychology. *Developmental Psychology*, 28(4), 548-557. doi:10.1037/0012-1649.28.4.548

Although dated, this succinct and readable overview of Vygotsky's socio-cultural theory of learning and cognitive development remains a valuable introduction. The authors include Vygotsky's concept of psychological tools and the Zone of Proximal Development. Emphasis is placed on the role language plays in the social exchange of knowledge within a culture. Vygotsky's view that learning as beginning with a social intermental process that leads to an intramental process (thinking) within the individual is explained.

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