

Socioculturalism

Bohdana Allman

The sociocultural theory of learning and teaching is widely recognized in fields of educational psychology and instructional technology. The focus of this theory is on the role social interaction and culture play in the development of higher-order thinking skills. Vygotsky (1978), a Russian psychologist and the founder of sociocultural theory, believed that human development and learning originate in social and cultural interaction. In other words, the ways people interact with others and the culture in which they live shape their mental abilities.

Sociocultural theory is considered primarily a developmental theory. It focuses on change in behavior over time, specifically on changes that occur as individuals mature from infancy, to childhood, to adolescence, and finally to adulthood. The theory attempts to explain unseen processes of development of thought, of language, and of higher-order thinking skills with implications to education in general and is especially valued in the field of applied linguistics. The theory's focus on a developing child is the reason for referring to a child or children when discussing theoretical underpinnings throughout the text. However, because many implications and practical applications related to sociocultural theory are applicable to learners of all ages, when implications are discussed, the object

is generally a learner or learners.

The term sociocultural theory represents a variety of theoretical positions and perspectives. This chapter will briefly introduce the theory's origins, identify the fundamental tenets of the theory with general implications, review strengths and limitations, and discuss implications related to instructional design.

Sociocultural Theory Origins

Origins of sociocultural theory are most closely associated with the work of a Russian psychologist Lev Vygotsky (1896 - 1934). He was a talented scholar with broad interests, an accomplished researcher, and a prolific writer. Vygotsky's goal was "to create a new and comprehensive approach to human psychological processes" (Miller, 2011, p. 168). He was closely familiar with works of his contemporaries such as Pavlov as well as Piaget, Binet, and Freud and often commented on their ideas. His thinking was also influenced by philosophers such as Hegel, Marx, and Engels. He died of tuberculosis at the age of 37, only ten years after his professional career in psychology began (Miller, 2011).

Shortly after Vygotsky's death, his manuscripts were banned in the USSR for political reasons. It was not until the late 1960s when his work was allowed to be published again. Vygotsky first became known in the West when his *Language and Thought* was translated in 1962. His work continues to be disseminated through efforts of scholars such as Cole, Wertsch, John-Steiner, Lantolf, and Rogoff (Miller, 2011). Vygotsky's ideas markedly influenced theories of psychology and education

(Driscoll, 2000) and continues to significantly affect educational practices today (Miller, 2011). Vygotsky's theories are often contrasted with Piaget's theories mainly because both psychologists focused on understanding cognitive processes and development in children. However, their theories were described by Bruner as incommensurate because they highlight "two ways human beings can make sense of their world: by means of logical necessity (Piaget) or by means of interpretive reconstruction of circumstances (Vygotsky)" (Driscoll, 2000, p. 240). Generally, Vygotsky's theories are viewed as complementary to Piaget's and other Western approaches since the broad sociocultural perspective balances the focus on the individual (Miller, 2011).

Fundamental Tenets of the Sociocultural Theory

There are three fundamental concepts that define sociocultural theory: (1) social interaction plays an important role in learning, (2) language is an essential tool in the learning process, and (3) learning occurs within the Zone of Proximal Development. Each idea will be discussed in more detail together with related concepts and implications to learning and education.

Social interaction plays an important role in learning. Vygotsky believed that thinking has social origins and that cognitive development cannot be understood without reference to the social context within which it is embedded. He proposed that social interaction plays a critical role in the process of cognitive development, especially in the development of higher order

thinking skills. Social activity between a parent and a child or a teacher and a learner lays a foundation for how and what the child will think and do in other situations (Driscoll, 2000).

Vygotsky wrote: "Every function in the child's cultural development appears twice: first, on the social level, and later, on the individual level; first between people (interpsychological) and then inside the child (intrapsychological)" (Vygotsky, 1978, p. 57). This process is characterized as guided participation where a child actively acquires new cognitive skills and problem-solving capabilities through a meaningful collaborative activity with an assisting adult (Rogoff, 1990). It is through working together on a variety of tasks that a learner internalizes or adopts socially shared experiences and associated effects and acquires useful strategies and knowledge (John-Steiner & Mahn, 1996; Scott & Palincsar, 2013). The processes of guided participation and internalization reveal the Vygotskian view of cognitive development "as the transformation of socially shared activities into internalized processes," or an act of enculturation, thus rejecting the Cartesian dichotomy between the internal and the external (John-Steiner & Mahn, 1996, p. 192).

Vygotsky's notion of social origins of learning stand in stark contrast to more popular views of Piaget's theory of cognitive development, who made a fundamental assumption that development through certain stages is biologically determined, originates in the individual, and precedes cognitive complexity. This difference in assumptions is significant, as it has important implications to learning and education. If "development is a precondition for learning," as Piaget states, then concepts and problems "should not be taught until children have developed

the necessary logical operations to understand them” (Driscoll, 2000, p. 249). If we believe, as Vygotsky did, that learning drives development and that “development occurs as children learn general concepts and principles that can be applied to new tasks and problems,” then we can structure curriculum and activities to actually promote individual student learning and development (Scott & Palincsar, 2013, par. 8). As children learn, they achieve a higher level of development, which in turn “affects their readiness to learn a new concept” (Miller, 2011, p. 197). In Vygotsky’s own words:

Learning awakens a variety of internal developmental processes that are able to operate only when the child is interacting with people in his environment and with his peers... learning is not development; however, properly organized learning results in mental development and sets in motion a variety of developmental processes that would be impossible apart from learning. Thus learning is a necessary and universal aspect of the process of developing culturally organized, specifically human, psychological functions (1978, p. 90).

Another implication based on the Vygotskian view of learning originating in social and historical contexts is that the sociocultural perspective acknowledges both individual differences and cross-cultural differences in development. This “sensitivity to diversity is quite important” because much of research and the resulting understanding of development is done on white, middle-class children of Western tradition and assumes universality (Miller, 2011, p. 198). Recognizing that “ideal thinking and behavior may differ for different cultures” and that “different historical and cultural circumstances may encourage different developmental routes to any given

developmental endpoint” may liberate educators from a constricting universalist view and allow them to provide a nurturing environment where diversity is valued as a resource (Miller, 2011, p. 198).

Language is an essential tool in the learning process. The second important notion on which Vygotsky elaborated is related to the role of language in the learning process.

Vygotsky reasoned that social structures determine people’s working conditions and social interactions, which in turn shape their cognition, beliefs, attitudes, and perception of reality (Miller 2011). He extended his reasoning further with a notion that human action on both the social and individual planes is mediated by tools and signs, or semiotics, such as language, systems of counting, conventional signs, works of art, etc. Vygotsky suggested that through the use of these tools, or semiotic mediation, co-construction of knowledge is facilitated and social and individual functioning is mediated. These semiotic means play an important role in development and learning through appropriation, a process of adopting or internalizing these socially available psychological tools by an individual to assist future independent problem solving (John-Steiner & Mahn, 1996). This means that children and learners do not need to reinvent already existing tools in order to be able to use them. They only need to be introduced to how a particular tool is used and then they can use it across a variety of situations, including novel events (Scott & Palincsar, 2013).

Vygotsky viewed language as a direct result of the symbols and tools that emerge within a culture. It is potentially the greatest tool at our disposal, a form of a symbolic mediation that plays two critical roles in development: to communicate with others

and to construct meaning (McLeod, 2014). First, language is used to assign meaning during social interaction to facilitate communication in social settings. This occurs as a child engages in the environment and through a variety of social events and processes acquires language of their closest community, the family. Generally, this so called social speech emerges around age two, and it is a form of an external or over speech directed toward others with a communicative function (McLeod, 2014). A child discovers that words have meaning, realizes that this meaning is shared within the language community, and begins to use these words to communicate with others to fulfill their needs. During this process of development a child also internalizes the tone of voice, the way concepts are talked about, and the signs and symbols used to attach value to things and events, which eventually shape value sets of that individual (Miller, 2011; Tharp, 2001). Vygotsky believed that language and thought are two separate systems at this initial stage (Vygotsky, 1986).

The other role of language is that it aids in construction of understanding. It is a powerful tool of intellectual development and adaptation. Around age three, children begin to develop what is referred to as private speech. This is an external or overt language, just as social speech, but it is directed to self. Furthermore, private speech serves intellectual and self-regulating functions rather than a communicative function (McLeod, 2014; Vygotsky, 1986). This can be visible as a child voices thoughts aloud, especially while solving difficult problems or challenging tasks. They use language to plan out a strategy, organize thoughts, or collaborate with themselves as they would with a more knowledgeable other. In this way, private speech is not just a part of a child's activity, but it

becomes a tool used by the child to facilitate their own cognitive processes and development (Miller, 2011). According to Vygotsky, at about age three language and thought begin to merge from two separate systems and become interdependent: thoughts become verbal and speech becomes representational (McLeod, 2014).

Transformation of private speech into inner speech is a gradual process. It is around age seven when private speech becomes less visible, a child's monologue internalizes, and private speech becomes inner speech. A child is able to 'think in words.' Vygotsky explained that while external speech is embodied thought in words, inner speech is more idiosyncratic, abbreviated, and fragmented, and it is "to a large extent thinking in pure meanings" (1986, p. 249). Inner speech, just like private speech, remains directed at self and retains self-regulating and intellectual functions, however, it is covert and inaudible (McLeod, 2014). This internalization of language is important, because it drives cognitive development. Inner speech takes the form of ideas that remain within our minds and directly impacts our thoughts, behaviors, and the development of higher order thinking skills.

Vygotsky thought that private speech is strongly affected by an individual's social environment, which has been supported by high correlations between social interaction and private speech observed in children (McLeod, 2014). Children from higher socioeconomic backgrounds are often raised in cognitively and linguistically more stimulating environments, and they tend to begin using and internalizing private speech faster than their less privileged peers (McLeod, 2014). This brings interesting implications to education. Supportive educational

environments, especially during early elementary grades can provide additional cognitive and linguistic support and modeling of academic monologue, which may positively affect development of private and inner speech for children of all economic backgrounds and may in turn positively support their cognitive development and academic performance.

Learning occurs within the zone of proximal development. Probably the most widely adopted concept related to sociocultural theory is the concept of the Zone of Proximal Development (ZPD). It is “the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers” (Vygotsky, 1978, p. 86). It is essentially the zone where learning takes place. Vygotsky strongly believed that learning should be matched with a child’s developmental level and suggested that in order to understand the connection between development and learning it is necessary to distinguish the actual and the potential levels of development. He considered the ZPD to be a better and more dynamic indicator of cognitive development as compared to merely measuring what children can accomplish independently (Scott & Palincsar, 2013).

Vygotsky viewed the application of ZPD broadly, referring to “any situation in which some activity is leading children beyond their current level of functioning. Thus the zone can operate during play, work, school studies, and other ... activities” (Miller, 2011, p. 178). He argued that productive interactions “orient instruction toward the ZPD; otherwise, instruction lags behind the development of the child” (Scott & Palincsar, 2013,

par. 8). Providing sensitive instruction and guidance within the ZPD allows a learner to develop skills and strategies they will eventually apply on their own in other situations, which is characteristic of developing higher cognitive skills (Vygotsky, 1978). The role of a learner's social partner is also critical since the type of social interactions, tools they use, and skills they practice determine the outcome of the collaborative experience, which could lead to a normal and accelerated development as well as to developmental delays and an abnormal development (Driscoll, 2011). Thus an ideal partner, whether an adult or a peer, should be advanced enough in knowledge or skill to promote learning and at the same time be able to interact within the zone not too far beyond the learner's reach. Additionally, partners in a successful collaborative activity share a degree of common understanding about the task, a common goal, described as intersubjectivity. It is not sufficient for the partners to merely work together, they must co-construct the problem's solution through coordinated effort, which implies shared power and authority over the process (Driscoll, 2011).

In the 1970s, Bruner, Wood and Ross added the notion of scaffolding to sociocultural theory (Puntambekar, 2009). Scaffolding is the support mechanism that helps a learner successfully complete a task within ZPD and as such is the practical tool in actualizing guided participation. Scaffolding describes an ongoing support provided to a learner by an expert in a process of learning and completing a task they cannot complete without assistance. It connotes a mutual and dynamic nature of interaction where both the learner and the expert influence each other and adjust their behavior as they collaborate (Miller, 2011). Similar to a way physical scaffolding

provides both adjustable and temporary support to buildings under construction, scaffolding in a sociocultural context refers to a more skilled other providing a learner with necessary support as their emerging skills develop. These supports depend on the learner's needs and are gradually phased out as the learner become proficient, thus promoting movement toward autonomy (Miller, 2011). Scaffolding involves an expert knowledgeable about both content and pedagogy being able to adapt the task to the learner's ability. The expert motivates and guides the learner by providing just enough assistance, modeling, and highlighting critical features of the task as well as continually evaluating and adjusting supports as needed. Additionally, the expert facilitates reflection through suggestions and questions, which further promotes more complex, meaningful, and lasting learning experiences (Puntambekar, 2009).

Concepts of ZPD and scaffolding have quite revolutionary implications to assessment, instruction, and education in general. Traditionally, assessment measures what learners know and understand unaided at a given point of time. However, as briefly mentioned above, Vygotsky believed that taking into account both what a learner knows independently and what they can do or understand with assistance is a more accurate measure of that individual's learning. So-called dynamic assessment reveals performance improvements that are often not recognized by standard assessments and testing, which is especially apparent in underachieving children who commonly do not perform to their ability levels (Miller, 2011). Understanding what a child can accomplish without as well as with assistance can inform educators and other stakeholders, and it can also significantly improve quality and effectiveness of

instruction.

Furthermore, sociocultural theory suggests a different dynamic for the relationship between the learner and the teacher than is currently typical in a school setting. The learner takes on more responsibilities such as determining their learning goals, becoming a resource of knowledge for peers, and being collaborators in the learning process. The teacher is viewed as a guide, an assistant, and a facilitator of learning rather than a transmitter of knowledge or an enforcer of rules (Grabinger, Aplin, & Ponnappa-Brenner, 2007). This shift in roles promotes individualized, differentiated, and learner-centered types of instruction, which when accompanied with effective pedagogical practices provides a powerful alternative for reforming current educational systems and creating environments that may “make it possible for the majority of individuals to develop deep understanding of important subject matters” (Watson & Reigeluth, 2016., par. 13, quoting Bransford et al., 1999, p. 6).

Strengths and Limitations of Sociocultural Theory

Sociocultural theory has several widely recognized strengths. First, it emphasizes the broader social, cultural, and historical context of any human activity. It does not view individuals as isolated entities, rather it provides a richer perspective focusing on the fluid boundary between self and others. It portrays the dynamic of a child acquiring knowledge and skills from the society and then in turn the child shaping their environment (Miller, 2011). Second, sociocultural theory is

sensitive to individual and cross-cultural diversity. In contrast to many developmental theories that focus on universal aspects of development, sociocultural theory acknowledges both differences in individuals within a culture and differences in individuals across cultures. It recognizes that “different historical and cultural circumstances may encourage different developmental routes to any given developmental endpoint” depending on particular social or physical circumstances and tools available (Miller, 2011, p. 198). Finally, sociocultural theory integrates the notion of learning and development greatly contributing to our theoretical understanding of cognitive development. The idea of learning driving development rather than being determined by a developmental level of the learner fundamentally changes our understanding of the learning process and has significant instructional and educational implications (Miller, 2011).

There are also limitations to the sociocultural perspective. The first limitation is related to Vygotsky’s premature death as many of his theories remained incomplete. Furthermore, his work was largely unknown until fairly recently due to political reasons and issues with translation. The second major limitation is associated with the vagueness of the ZPD. Individuals may have wide or narrow zones, which may be both desirable and undesirable, depending on the circumstances. Knowing only the width of the zone “does not provide an accurate picture of their learning, ability, style of learning, and current level of development compared to other children of the same age and degree of motivation” (Miller, 2011, p. 198). Additionally, there is little known about whether a child’s zone is comparable across different learning domains, with different individuals, and whether the size of the zone changes over time.

There is also not a common metric scale to measure ZPD (Miller, 2011). Finally, Rogoff points out that Vygotsky's theories may not be relevant to all cultures as originally thought. She provides an example of scaffolding being heavily dependent on verbal instruction and thus not equally effective in all cultures for all types of learning (McLeod, 2014; Rogoff, 1990).

Instructional Design Implications

So far this chapter has highlighted some important implications of sociocultural theory, which are generally applicable to instruction, assessment, and education. This section will review additional implications taking into considerations issues specifically related to the field of instructional design.

Sociocultural theory is not commonly associated with instructional design methods. These methods traditionally rely on individualistic learning driven by set learning objectives and strands of often context-deprived topics being presented in a logical and structured sequence. Generally there is little or no consideration for already existing knowledge, relationships, or cultural richness. Systematic approaches to instructional design, often rooted in behaviorist theory, may be valuable for "teaching concepts, procedures and basic skills" (Grabinger, Aplin, & Ponnappa-Brenner, 2007, p.1). But Grabinger, Aplin, and Ponnappa-Brenner (2007) further propose that in order to

meet the goal of 'preparing people for an ever-changing world', instructional programs need to apply strategies that focus on the development of critical thinking, problem solving, research, and lifelong learning... (, which) require a sociocultural approach to instruction emphasizing learning from experience

and discourse (p. 1).

Three major implications of sociocultural theory to instructional design will be discussed as a reaction to the above description of traditional instructional design. These include: focus on the individual learner, use of effective pedagogies centered around collaborative practice and communities of learners, and attention to funds of knowledge.

Most instructional design models, such as ADDIE, take into consideration only the common learner, tying learning with concrete and measurable objectives. Recently, a strong call has been issued for a complete shift in our education and instructional design approaches requiring a learner-centered instruction to reflect our society's changing educational needs (Watson & Reigeluth, 2016). New methodologies, such as Universal Design for Learning based in the learning sciences recognize that every learner is unique and strive to provide challenging and engaging curricula for diverse learners. Watson and Reigeluth (2016) mention that there are two important features of learning-centered instruction: a focus on the individual learner and a focus on effective learning practices. Sociocultural theory and related methodologies may provide a valuable contribution to this effort as they focus on a learner in their social, cultural, and historical context and also offer sound pedagogical solutions and strategies that facilitate development of critical thinking and encourage lifelong learning (Grabinger, Aplin, & Ponnappa-Brenner, 2007).

Sociocultural theory allows instructional designers to apply principles of collaborative practice that go beyond social constructivism and create effective communities of learners

through effective pedagogies. The sociocultural perspective views learning taking place through interaction, negotiation, and collaboration in solving authentic problems while emphasizing learning from experience and discourse, which is more than cooperative learning. This is visible, for example, in situated learning theory and cognitive apprenticeship. In addition to the collaborative nature of learning, approaches grounded in sociocultural theory pay attention to and model the discourse, norms, and practices associated with a certain community in order to develop knowledge and skills important to that community (Scott & Palincsar, 2013). This approach is consistent with communities of practice and inquiry-based methods, which enculturate learners into the community of practice, highlighting the importance of effective pedagogical practices, quality of content, as well as strong social presence to increase the effectiveness of learning experiences and successfully facilitate critical thinking and higher-order learning outcomes (Garrison & Akyol, 2013). Furthermore, the emergence of new synchronous and asynchronous communication technologies and increased attention to computer-supported collaborative learning (CSCL) create new opportunities for applying sociocultural methodologies as their affordances allow quality collaboration and new ways of interacting in face-to-face, blended, and online environments (Garrison & Akyol, 2013).

Lastly, current instructional methodologies generally do not give much consideration for existing knowledge, established relationships, or cultural richness, commonly referred to as a learner's funds of knowledge. Garrison and Akyol (2013) explained that when social presence is established as part of a community of inquiry, which requires recognition and use of

these funds of knowledge, “collaboration and critical discourse is enhanced and sustained” (p. 108). Establishment of solid social presence further reflects in positive learning outcomes, increased satisfaction, and improved retention (Garrison & Akyol, 2013). Integrating sociocultural practices into learning design, for example through creation of communities of inquiry, spontaneously integrates a learner’s previous knowledge, relationships, and cultural experiences into the learning process and enculturate the learner into the new community of practice through relevant activities and experiences (Grabinger, Aplin, & Ponnappa-Brenner, 2007). Another interesting solution to supporting social and cognitive factors in learning is the creation of a third space for discourse where a learner’s primary discourse related to home and informal social interactions is merged with the secondary formal discourse of school. This allows students to share in less formal environments, which lowers the affective filter, encourages exchanges, and gives students control over when, how, and what to share. Third-space discourse also encourages educators to recognize students’ personal experiences and to incorporate their students’ funds of knowledge into instruction, which results in increased conceptual understanding and use of academic language (Scott & Palincsar, 2013). When learners feel valued as participants in the community, when their prior experiences and knowledge are recognized and integrated into learning experiences, and when instruction reflects culturally sensitive practices, their motivation and satisfaction increases, and learning becomes deeper, lasting, and more meaningful.

Conclusion

The notion of social origins of learning, the interrelationship of language and thought, and the notion of ZPD are Vygotsky's most important contributions. However, it is the practical applications of sociocultural theory that create learner-centered instructional environments where learning by discovery, inquiry, active problem solving, and critical thinking are fostered through collaboration with experts and peers in communities of learners and encourage self-directed lifelong learning habits. Presenting authentic and cognitively challenging tasks within a context of collaborative activities, scaffolding learner's efforts by providing a structure and support to accomplish complex tasks, and providing opportunities for authentic and dynamic assessment are all important aspects of this approach. Sociocultural principles can be applied in effective and meaningful ways to design instruction across the curriculum, for learners of different ages and variety of skills, and it can be effectively integrated using a wide range of technologies and learning environments. The challenge remains for educators and instructional designers to elevate our practices from efficient systemic approaches for teaching and instructional design to focusing on individual learners and effective pedagogical practices to develop empowered learners ready to successfully negotiate the rapidly changing era of information. Technology is at our fingertips, it is up to us to competently implement its unique affordances to promote new ways to educate and support deep, meaningful, and self-directed learning. Grounding our practices in sociocultural theory can significantly aid our efforts.

References

Driscoll, M. P. (2000). *Psychology of learning for instruction* (2nd ed.). Needham Heights, MA: Allyn & Bacon.

Garrison, D. R., & Akyol, Z. (2013). The community of inquiry theoretical framework. *Handbook of Distance Education*, 3, 104-120.

Grabinger, S., Aplin, C., & Ponnappa-Brenner, G. (2007). Instructional design for sociocultural learning environments. *W-Journal of Instructional Science and Technology*, 10(1), n1.

John-Steiner, V., & Mahn, H. (1996). Sociocultural approaches to learning and development: A Vygotskian framework. *Educational Psychologist*, 31(3/4), 191-206.

Kozulin, A. (1990). *Vygotsky's psychology: A biography of ideas*. Cambridge, MA: Harvard University Press.

McLeod, S. A. (2014). *Lev Vygotsky*. Simply Psychology. Retrieved from www.simplypsychology.org/vygotsky.html

Miller, P. (2011). *Theories of developmental psychology* (5th ed.). New York, NY: Worth Publishers.

Puntambekar, S. (2009). *Scaffolding*. Education.com. Retrieved from <http://www.education.com/reference/article/scaffolding/>

Rogoff, B. (1990). *Apprenticeship in thinking*. New York: Oxford University Press.

Scott, S., & Palincsar, A. (2013). Sociocultural theory. Education.com. Retrieved from <http://www.education.com/reference/article/sociocultural-theory/>

Tharp, R. (2001). Roland Tharp. Teaching English Language Learners (TELL). Retrieved from http://education.byu.edu/tell/transcriptions/march_2001/roland_tharp.html

Vygotsky, L. S. (1978). Mind in society: The development of higher psychological processes. M. Cole, V. John-Steiner, S. Scribner, & E. Souberman (Eds.). Cambridge, MA: Harvard University Press.

Vygotsky, L. S. (1986). Thought and language. A. Kozulin (Trans.) .Cambridge, MA: The MIT Press.

Watson, S. L. & Reigeluth, C. M. (2016). The learner-centered paradigm of education. In R. West (Ed.). Foundations of Learning and Instructional Design Technology. Retrieved from <https://lidtfoundations.pressbooks.com/chapter/systemic-change/>.

Keywords

Sociocultural theory

Guided participation

Internalization

Semiotic mediation

Appropriation

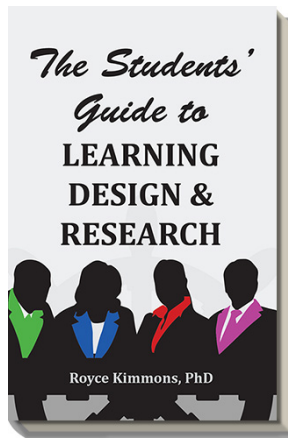
Zone of proximal development

Scaffolding

Sociocultural implications to instructional design

Suggested Citation

Allman, B. (2018). Socioculturalism. In R. Kimmons, *The Students' Guide to Learning Design and Research*. EdTech Books. Retrieved from <https://edtechbooks.org/studentguide/socioculturalism>



Kimmons, R. (2018). *The Students' Guide to Learning Design and Research*. EdTech Books.
Retrieved from
<https://edtechbooks.org/studentguide>



CC BY: This book is released under a CC BY license, which means that you are free to do with it as you please as long as you properly attribute it.

