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Finding the Theory and Method for the Pedagogy of Teaching Legal Research: A Response to Callister's "Time to Blossom"

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Finding the Theory and Method for the Pedagogy of Teaching Legal Research: A Response to Callister's "Time to Blossom"

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ABSTRACT

In his article "Time to Blossom," Callister invites legal research experts to begin a discussion as to what theory and methodology would be most effective for teaching legal research. This article suggests that utilizing a tailored form of systems theory in conjunction with active learning methods would allow legal educators not only to teach students in an effective and understandable manner but also to adapt their teaching methods to correspond to changes in the legal research field.

KEYWORDS

legal research; Bloom's Taxonomy; systems theory; active learning; teaching pedagogy

Introduction

The traditional methods of lectures, library tours, and research assignments no longer meet the ABA's requirements for teaching law students how to conduct legal research or prepare students for the research expectations of future employers.[1] The traditional methods of teaching legal research focus on the historically controlling print sources and engrained patterns of the law dictated by the those sources.[2] Exercises and projects based on the traditional methods of teaching legal research have trouble replicating the variety of situations and research questions that a law student may face when trying to find information on a legal topic.[3] The Carnegie Report and the Best Practices for Legal Education both encourage law schools to adapt their teaching methods to prepare students for the practice of law and to include clinical and experiential training.[4] To meet the challenges that legal education faces, the

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[1] Aliza B. Kaplan & Kathleen Darvil, *Think [and Practice] Like a Lawyer: Legal Research for the New Millennials*, 8 Legal Comm. & Rhetor. 153, 173–175 (2011).

[2] Ian Gallacher, *Forty-Two: The Hitchhikers Guide to the Google Generation*, 39 Akron L. Rev. 160–163 (2006).

[3] Paul Maharg, *Transforming Legal Education Learning and Teaching the Law in the Early Twenty-First Century* 172–182 (2007).

[4] Karen Tokarz et al., *Legal Education at a Crossroads: Innovation, Integration, and Pluralism Required!*, 43 Wash. U. J. L. & Policy 11, 17–19 (2013).

pedagogy of legal research must evolve to better prepare students to conduct legal research as they would as practicing professionals.[5]

In "Time to Blossom," Callister calls upon legal research educators and professionals to open a debate on which theories and methodologies should form the pedagogical foundations for teaching legal research.[6] Callister then introduces his adapted version of Bloom's Taxonomy, along with possible exercises, to begin the discussion on teaching legal research and serve as a possible foundational model for legal research courses.[7] This article will examine Bloom's Taxonomy and suggest that legal research education could be bolstered by adopting systems theory as the framing theory for teaching legal research and by using active learning methods to teach students how to go about legal research in a logical and flexible manner. This article also will discuss how the use of a combination of systems theory and active learning methods can develop students' understanding of the legal research process, teach them how to use a variety of approaches and tools to find the information they need, and enable them to reflect on legal research as a collection of actors and items as a whole to gain metacognitive skills.

Bloom's Taxonomy

Bloom's original and revised taxonomies

Bloom's Taxonomy was created as a tool to classify different educational programs and to test the ability of programs to meet the goals of teaching students materials and developing their understanding of a topic.[8] Bloom's Taxonomy also is used by individual educators to structure their classes and to test their students' level of comprehension of materials.[9] The goal of Bloom's Taxonomy is to provide a framework that allows educators to determine what level of understanding a student has on a topic from memorizing basic facts, to understanding a concept and reflecting on it, and mastering the concept in a broad sense.[10]

Two models of Bloom's Taxonomy have been developed: the original model drafted in 1956 and the revised model published in 2001.[11] The first model focused on a student's understanding of a concept and divided the levels of understanding into a hierarchy that included six categories: Knowledge, Comprehension,

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[5] Paul D. Callister, *Time to Blossom: An Inquiry into Bloom's Taxonomy as a Hierarchy and Means for Teaching Ordered Legal Research Skills*, 102 Law Libr. J. 191, 191–193 (2010).

[6] *Id*. at 191–196.

[7] *Id*. at 196–218.

[8] Mary Forehand, *Bloom's Taxonomy*, 41 Emerging Persp. on Learning, Teaching & Tech. 47 (2010) (available at http://s3.amazonaws.com/academia.edu.documents/29569858/mary_forehand_discussion-blooms_taxonomy.pdf? AWSAccessKeyId=AKIAIWOWYYGZ2Y53UL3A&Expires=1489155546&Signature=IbhM%2BW8uDYiwJcYrGTKccIJV73o %3D&response-content-disposition=inline%3B%20filename%3DBlooms_taxonomy.pdf).

[9] E. Pappas, O. Pinakos, & R. Nagel, *Using Blooms Taxonomy to Teach Sustainability in Multiple Contexts*, 48 J. Cleaner Prod. 54, 56 (2013).

[10] *Id*.

[11] Ifran Hyder & Shelina Bhamani, *Bloom's Taxonomy (Cognitive Domain) in Higher Education Settings: Reflection Brief*, 3 J. Educ. & Educ. Dev. 288, 290–291 (2016).

Application, Analysis, Synthesis, and Evaluation.[12] The Knowledge category of learning is achieved when a student knows the basic facts or steps of a concept.[13] The Comprehension category is achieved when a student is able to take the facts that they have learned along with the basic ideas of a concept and explain them using their own examples and terms.[14] When a student can utilize what they have learned to solve a specific problem, they have achieved the hierarchy's Application category.[15] When a student can break down an item presented to them to understand its components and how they work together, they have entered the Analysis category of understanding.[16] The category of Synthesis is reached when a student can use components of what the student has learned to create new concepts.[17] The final category that a student can reach, Evaluation, is reached when a student can use the knowledge they have to examine other ideas or materials using their understanding of the topic.[18]

Bloom's Taxonomy was revised in 2001 by Anderson and Krathwohl to integrate information from modern learning studies and to include shifts in understanding about the learning process.[19] The revised Bloom's Taxonomy focuses on a student's ability to understand concepts so they can be used to create new ideas or works.[20] The revised Bloom's Taxonomy renamed and shifted the categories of Bloom's hierarchy to Remember, Understand, Apply, Analyze, Evaluate, and Create.[21] The Remember category focuses on whether a student can recall information presented in the classroom or gained through their own studies.[22] The Understand category replaced the Comprehension category to encourage evaluators to focus on whether a student could explain or identify concepts rather than engage in more abstract forms of understanding.[23] The categories of Apply and Analyze remained much the same from the first version of the taxonomy to the second and retained their respective ordering positions.[24] The categories of Evaluate and Create swapped the positions of Synthesis and Evaluate to promote a focus on inductive thinking and the creation of new ideas or projects.[25]

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[12] Pappas, Pinakos, & Nagel, *supra* n. 9.

[13] Nancy E. Adams, *Bloom's Taxonomy of Cognitive Learning Objectives*, 103 J. of Med. Libr. Assn. 152, 152 (2015).

[14] Tatyana V. Ramirez, *On Pedagogy of Personality Assessment: Application of Bloom's Taxonomy of Educational Objectives*, J. Personality Assessment 146, 148 (2016).

[15] Dennis Castleberry & Steven R. Brant, *The Effect of Question Ordering Using Bloom's Taxonomy in an e-Learning Environment*, in *International Conference on Computer Science Education Innovation & Technology (CSEIT). Proceedings*, Global Sci. & Technical Forum 22, 22 (2016).

[16] *Id*.

[17] Haq Nawaz Anwar & Malik Muhammad Sohail, *Assessing the Learning Level of Students through Bloom's Taxonomy in Higher Education in Punjab*, 4 J. Educ. & Soc. Research 83, 83 (2014).

[18] *Id*.

[19] Jack Conklin, *Book Review*, 83 Educ. Horizions 154, 155–159 (2005)(Reviewing *A Taxonomy for Learning, Teaching and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives*).

[20] Charlie Sweet, Hal Blythe, & Rusty Carpenter, *Why the Revised Blooms Taxonomy Is Essential to Creative Teaching*, 26 Natl. Teaching & Learning Forum 7, 7–9 (2016).

[21] *Id*.

[22] Conklin, *supra* n. 19, at 157.

[23] Mary J. Prickard, *The New Bloom's Taxonomy: An Overview for Family and Consumer Sciences*, 25 J. Fam. & Consumer Sci. Educ. 45, 46–48 (2007).

[24] Conklin, *supra* n. 19, at 157–158.

[25] *Id*.

The revised Bloom's Taxonomy also created two subcategories from the original knowledge category, the subcategories being Conceptual and Factual knowledge, to differentiate the kinds of knowledge students would need to understand and apply the concepts.[26] The creation of the subcategories caused the form of the taxonomy to change from a one-dimensional hierarchy to a two-dimensional structure that examines students' progress through the categories of cognitive process and their depth of knowledge through the Factual, Conceptual, Procedural, and Metacognitive levels.[27] The Factual level covers the basic ideas that a student needs to know to begin to understand a concept.[28] The Conceptual level includes the foundational connections between the facts of a concept that a student must form.[29] The Procedural level encompasses the knowledge needed to work with the facts and concepts that have been learned to accomplish a task.[30] The Metacognitive level is gained when a student understands the information presented to them, their own knowledge of the topic, and how the topic fits into their area of practice or study.[31]

Callister's adaptation of Bloom's Taxonomy

In "Time to Blossom," Callister modifies Bloom's Taxonomy to fit the fundamentals of legal research instruction.[32] Callister changes the category of Remember to Recognize to stress that legal researchers must learn to identify the legal concepts and issues they are working with.[33] Under Callister's revision, the Understanding category transforms into Articulate to stress a researcher's ability to put into context the legal matter they are researching.[34] Callister merges the categories of Analysis and Synthesis to emphasize that a researcher must be able to comprehend the legal issues and facts they were given and be able to work with them and the materials that they find on their topic in combination.[35] Callister adds the category of Concluding to his taxonomy to recognize that researchers take the information they have and create a legal argument or document.[36] Rather than having a knowledge level alone, Callister assigns Metacognition as the final category in the learning process for legal researchers to achieve.[37] Callister writes that students must learn legal research beyond rote memorization and achieve metacognition so they can adapt to situations in the classroom or they will face troubles in their professional practice.[38]

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[26] David R. Krathwohl, *A Revision of Bloom's Taxonomy*, 41 Theory into Prac. 212, 215–218 (2002).

[27] David R. Krathwohl & Lorin W. Anderson, *Merlin and the Revision of Bloom's Taxonomy*, 45 Educ. Psychologist 64, 64 (2010).

[28] Krathwohl, *supra* n. 26, at 214.

[29] *Id*.

[30] *Id*.

[31] *Id*.

[32] Callister, *supra* n. 5, at 199–212.

[33] *Id*. at 199–202.

[34] *Id*. at 202–203.

[35] *Id*. at 205–209.

[36] *Id*. at 209–210.

[37] *Id*. at 210–211.

[38] *Id*. at 211–212.

Systems theory and teaching legal research

Overview of systems theory

Systems theory was created by Bertalanffy to enhance studies observing biological systems and to direct scientific observations into a universal framework.[39] The central theme of systems theory is that a system, whether organic or artificial, can be studied in its natural state to understand its components, its goals, and how it adapts itself to change to continue to function or to improve its efficiency as it intakes and outputs matter, information, and energy.[40] Systems theory can be applied to almost any field of study; it is often referred to as general systems theory when used to study mathematical, mechanical, or scientific systems and systems theory when used to study sociological interactions and issues.[41]

Systems theory focuses on the behavior, the organization, and the makeup of the items or people to be examined and how each part of the system allows the whole to accomplish its goals.[42] Using systems theory to evaluate a process, such as learning or teaching new skills, takes into consideration changes in the human members, professional processes, and tools composing a system that can cause shifts in how a system operates to meet its needs.[43] Due to systems theory's adaptive nature, it can be difficult to articulate what steps are needed to apply it in an overarching manner.[44] To be able to apply systems theory to their studies, students must be able to define a system and its subsystems, if any, realize that the system that they are observing is an arbitrary construction by the observer that may or may not have all the components included in it to understand the system, observe the system, and then analyze the system's inputs and outputs.[45]

Systems theory and teaching legal research

Often students enter law school with inadequate problem-solving skills, which makes it imperative for legal research instructors to instill in students a broad understanding of legal research and its goal of solving issues posed to them by clients.[46] One of the main aims of teaching legal research is to get students to think about their research queries analytically and not to rely on computer-aided searching to

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[39] Debora Hammond, *The Science of Synthesis: Exploring the Social Implications of General Systems Theory* 9–11 (University Press of Colorado, 2003).

[40] David Chen & Walter Stoup, *General System Theory: Toward a Conceptual Framework for Science and Technology Education for All*, 2 J. Sci. Educ. & Tech. 447, 451–457 (1993).

[41] Rudolf Stichweh, *Systems Theory*, in *International Encyclopedia of Political Science,* vol. 8, 2579, 2579–2582 (B. Badie, D. Berg-Schlosser & L. Morlino, eds., Sage, 2011).

[42] Vincenzo De Florio, *Behavior, Organization, Substance: The Three Gestalts of General Systems Theory*, in *Norbert Wiesner in the 21st Century (21 CW) 2014* IEEE Conference on 1, 1–8 (2014).

[43] Chen & Stoup, *supra* n. 40, at 451–457.

[44] Keven MacG. Adams et al., *Systems Theory as the Foundation for Understanding Systems*, 17 Systems Eng'g 112, 112–113 (2014).

[45] Fremont E. Kast & James E. Rosenzwieg, *General Systems Theory: Applications for Organizations and Management*, 15 Acad. Mgt. J. 447, 452–456 (1972).

[46] Susan Stuart & Ruth Vance, *Bringing a Knife to the Gunfight: The Academically Underprepared Law Student & Legal Education Reform*, 48 Val. U. L. Rev. 41, 43–48 (2013).

provide the answer they need.[47] Berring has suggested that the research process can be explained as a mechanical process whose aim is to understand and solve a legal issue no matter what sources are available.[48] Such an approach to teaching the legal research process to students would lend itself to systems theory's aim of providing a complete understanding of a process and its goals. In the cognitive sciences, Tops et al. found that individuals who are taught the principles of being mindful and employing a systematic way of analyzing a situation and the individual's involvement in the situation helps them be objective, feel less stress, and act deftly as they navigate the situation.[49]

The fundamentals of teaching legal research have had to adapt due to the increasing amount of information being made available, often exclusively, on the Internet and will have to continue to change as information sources and technologies shift.[50] Beyond the amount of information available on the Internet, legal research systems are adopting a Google-like approach to searching, which has led to the deterioration of students' understanding of legal rules and theories.[51] Causing students to reflect on their efforts and how they have used their knowledge and sources, whether while completing a task or afterwards, often causes them to see their weak points and make efforts to improve.[52] Using systems theory as a foundation for lessons can provide students with a repeatable pattern that would allow them to choose a starting concept without making assumptions, understand that concept's internal workings, and place the concept in the area they are studying so they can solve problems presented to them in an efficient and logical manner.[53]

Teaching legal research through active learning methods

Introduction to teaching using active learning

While the traditional lecture-and-exercise format can be effective in teaching aspects of legal research, it emphasizes teaching facts rather than research skill development.[54] Davis, Neary, and Vaughn have found that using active learning techniques that combine exercises, differing presentation methods, and group work helps students learn materials in a way that is reflective of legal practice.[55] Active learning can be defined as any teaching method that causes students to be actively

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[47] Suzanne Rowe, *Out of the Glass Cockpit: Teaching Legal Analysis in Legal Research*, J. Legal Writing Inst. 41, 42–44 (2015).

[48] Mathew C. Cordon, *Task Mastery in Legal Instruction*, 103 Law. L. J. 395, 402–405 (2011).

[49] Mattie Tops et al., *Internally Directed Cognition and Mindfulness: An Integrative Perspective Derived from Predictive and Reactive Control Systems Theory*, 5 Froncatagorys Psycho. 1, 13–17 (2014).

[50] Ellie Margolis & Kristen E. Murray, *Say Goodbye to the Books: Information Literacy as the New Legal Research Paradem*, 38 U. Dayton L. Rev. 117, 117–121 (2012).

[51] Yasmin Sokkar Harker, *"Information Is Cheap, but Meaning Is Expensive": Building Analytical Skill into Legal Research Instruction*, 105 Law Libr. J. 79, 80 (2013).

[52] Ruth Vance & Susan Stuart, *Of Moby Dick and Tartar Sauce: The Academically Underpowered Law Student and the Curse of Overconfidence*, 53 Duq. L. Rev. 133, 142–145 (2015).

[53] Barbara G. Hanson, *General Systems Theory Beginning with Wholes* 8–10 (Taylor & Francis, 1995).

[54] Alyson M. Drake, *The Need for Experiential Legal Research Education*, 108 Law Libr. J. 511, 513–520 (2016).

[55] Laurel Davis, Mary Ann Neary, & Susan E. Vaughn, *Teaching Advanced Legal Research in a Flipped Classroom*, 22 Teaching Legal Research & Writing 13 (2013).

involved in the learning process.[56] The three main focuses of teaching through the active learning method are to develop a student's cognition, to motivate the student to work in a group to achieve an impactful goal, and to support healthy emotional responses to learning in a dynamic setting.[57]

Active learning supports the creation of knowledge-processing skills for students so they become familiar with materials and develop metacognitive skills that allow them to understand what they know in the broader context of the topic they are studying.[58] Lundahl found that active learning strategies not only allow students to understand how to conduct research on the practical and theoretical levels, they increase students' desire to participate in class and apply their skills in a manner that is analogous to real-life situations.[59] Active learning places students at the center of their own learning experience in a way that motivates them to work with others to complete a common task.[60] Cooperative learning, a subform of active learning, is effective in teaching research skills and problem-solving techniques while preparing students to work cooperatively as they would in their practice.[61] Active learning techniques also can be used by instructors to evaluate the methods and sources that are employed in the classroom to ensure they are effective and to be able to adjust their teaching as the course progresses.[62]

Developing legal research skills in students using active learning methods

Active learning and legal research's unique characteristics

Students appreciate the importance of developing their research skills but are concerned with the difficulty of learning how to conduct research in an effective manner.[63] Legal research methods are taught and applied in a different manner than research in other fields and require a unique approach to teach.[64] Callister states that active learning in the classroom is needed for students to learn legal research and should continue for students into their practice.[65] Using resource- and problem-based teaching methods, instructors can teach students what resources they should use to solve legal issues brought to them by clients, but resource-based teaching must be combined with problems based on critical thinking.[66] The challenge for

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[56] Marcie Lyn Jacklin, *Working Together: Librarian and Student Collaboration through Active Learning in a Library Eclassroom*, 5 Canadian J. Libr. & Info. Prac. & Research 1, 1–2 (2010).

[57] Bradford S. Bell & Steve W. J. Kozlowski, *Active Learning: Effect of Core Training Design Elements on Self-Regulating Process Learning and Adaptability*, 93 J. Applied Psychol. 296, 297 (2008).

[58] Hannele Niemi, *Active Learning—A Cultural Change Needed in Teacher Education and Schools*, 18 Teaching & Teacher Educ. 763, 764–774 (2001).

[59] Brad W. Lundahl, *Teaching Research Methodology through Active Learning*, 28 J. Teaching Soc. Work 273, 277–287 (2008).

[60] Bell & Kozlowski, *supra* n. 57, at 297.

[61] Marcia W. Keyser, *Active Learning and Cooperative Learning: Understanding the Difference and Using Both Styles Effectively*, 17 Research Strategies 35, 39–43 (2000).

[62] Eija Kimonen, *Active Learning in the Process of Educational Change*, 21 Teaching & Teacher Educ. 623, 623–630 (2005).

[63] Marina Morgeshtern et al., *Graduate Social Work Students Attitudes toward Research: Problems and Prospects*, 31 J. Teaching Soc. Work 552, 565 (2010).

[64] Judith Lihosit, *Research in the Wild: CALR and the Role of Informal Apprenticeship in Attorney Training*, 101 Law Libr. J. 157, 168–170 (2009).

[65] Callister, *supra* n. 5, at 207–208.

[66] Margaret Butler, *Resource-Based Learning and Course Design: A Brief Theoretical Overview and Practical Suggestions*, 104 Law Libr. J. 219, 221–225 (2012).

teaching legal research for instructors is the amount of information available that is in a changing state.[67] Due to the shifting array of sources and technologies available to students, teaching legal research must focus on the process of legal research while introducing them to the sources and research tools available.[68] Legal research requires students to take the skills they learn, know of them and the thought process associated with their use, and be able to apply them when presented with a novel research question.[69]

Active learning in cooperative settings to teach students legal research

Students come to law school with a level of information literacy often focused on finding information through online means, which can be adapted to the legal research process with less effort than trying to develop new skills.[70] Bandura found that individuals gain new skills or adapt previously learned skills for new applications with less effort when placed in social settings.[71] Morgeshtern et al. found that students follow the general social setting learning tendency and often have a more positive outlook to learning when placed in a cooperative setting.[72] In responses to surveys by Mattson and Tarves, students expressed that they prefer learning when materials are presented and then followed by drills, exercises, and discussions where they could learn from other students' approaches.[73]

Students tend to have more motivation to learn when they can see how classroom exercises will match up with their future practice and see how others have approached the issues that they are facing.[74] Traditional first-year legal research and writing courses give students an introduction to legal researching, but it is during their clinic experiences that students are exposed to using their skills in a law practice setting.[75] Instead of workbook-style exercises, instructors can use legal clinic-based projects to teach students practical skills and to keep them engaged.[76] Using a group project with positive impacts on students' academic and professional careers motivates students and creates a drive for them to develop their research metacognition and the skills they will apply in practice.[77]

Lihosit found that attorneys approach legal research by using individual styles they have developed through experience and training, but they also turn to other

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[67] Vicences Felici & Helen Frayer, *Embedded Librarians: Teaching Legal Research as a Lawyering Skill*, 61 J. Leg. Educ. 540, 543 (2012).

[68] Filippa Marullo Anzalone, *Some Musings on Teaching Legal Research*, 20 J. Leg. Writing Inst. 5, 6–8 (2015).

[69] Nacy B. Talley, *An Old Problem Needs a New Solution: Incorporating Librarian-led Legal Research*, 33 Leg. Ref. Servs. Q. 292, 293–294 (2014).

[70] Ellie Margolis & Kristen E. Murray, *supra* n. 50, at 119–121.

[71] Albert Bandura, *Social Learning Theory* (General Learning Corp., 1971), http://www.esludwig.com/uploads/2/6/1/0/26105457/bandura_sociallearningtheory.pdf.

[72] Morgeshtern et al., *supra* n. 63.

[73] Rebecca A Mattson & Theresa K. Tarves, 20 AALL Spectrum 31, 32–34 (2017).

[74] Michael Hunter Schwartz, Gerald F. Hess, & Sophie M. Sparrow, *What the Best Law Teachers Do*, 200–226 (Harvard U. Press, 2013).

[75] Felici & Frayer, *supra* n. 67, at 542–543.

[76] Michael A. Millemann & Steven D. Schwinn, *Teaching Legal Research and Writing with Actual Legal Work: Extending Clinical Education into the First Year*, 12 Clinical L. Rev. 441, 444–446 (2006).

[77] Tonia A. Dousay, Diana Igoche, & Robert Mari Branch, *Self-Regulated Learning as a Foundational Principle for a Successful Strategy in Teaching Educational Research Methods to Doctor of Philosophy Students*, 36 Educ. Media & Tech. Y. B. 23, 27–34 (2011).

attorneys in their professional networks to find information.[78] In a study of law students' clinic research habits, Jones found that students developed their own legal skills while reaching out to their peers for assistance if they had difficulties finding the information that they needed, much like attorneys do in their practices.[79] While students often rely on their peers to find and learn about legal issues and research strategies, they need expert guidance to fully form their own research skills.[80] By using students' experiences in class discussions, research instructors can act as mediators for effective legal research training and group adhesion.[81] Having discussions on research conducted by individual students, in both digital and traditional sources, exposes students to a variety of research methods and sources while allowing them to develop their own research skills.[82] Discussing topics such as what apps are best for finding legal information on mobile devices allows students to explore the latest research tools while allowing instructors insights into the tools and methods that their students are using.[83]

Using active learning and systems theory in combination for teaching legal research

In his article "Beyond Training," Callister writes that to be successful in legal research students must have a conceptual framework of the legal research process along with a flexible approach to the resources available to them.[84] Patton et al. found that exposing students to the fundamentals of systems theory as part of their curriculum provided them a framework for understanding the materials they were introduced to and how they fit in the subject they were trying to learn as a whole.[85] In "Time to Blossom," Callister cites to Hess's article "Principle 3: Good Practice Encourages Active Learning"[86] as a source for more information on active learning in the legal research field but states that the citation is not meant as advocacy for the active learning method in all its forms.[87] Callister cautions that some forms of active learning, such as minimally guided instruction, have been found not to provide students the framework of understanding they need to understand concepts.[88]

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[78] Lihosit, *supra* n. 64, at 170–173.

[79] Yolanda Patrice Jones, *"Just the Facts Ma'am?" A Contextual Approach to the Legal Information Use Environment*, Ph.D. dissertation, Drexel University, 2008.

[80] Suzan Azyndar, *Work with Me Here: Collaborative Learning in the Legal Research Classroom*, 1 Leg. Info. Rev. 1, 3–4 (2016).

[81] Judith Lihosit, *Breaking Down the Black Box: How Actor Network Theory Can Help Librarians Better Train Law Students in Legal Research Techniques*, 106 Law Libr. J. 211, 212 (2014).

[82] Nataliya V. Ivankova, *Teaching and Learning Mixed Methods Research in a Computer-Mediated Environment: Educational Gains and Challenges*, 4 Int. J. Multiple Research Approaches 49, 55–57 (2010).

[83] Melanie F. Michaelson & Diane L. Smith, *Teaching Legal Research with Mobile Technology*, 58 L. Libr. Lights 1, 1–3 (2015).

[84] Paul Douglas Callister, *Beyond Training: Law Librarian's Quest for the Pedagogy of Legal Research Education*, 95 Law Libr. J. 7, 35–45 (2003).

[85] Rikki Patton et al., *Teaching General Systems Theory Concepts through Open Space Technology: Reflections from Practice*, 35 J. Systemic Therapies 1, 8–9 (2016).

[86] Gerald Hess, *Principle 3: Good Practice Encourages Active Learning*, 49 J. Legal Educ. 401 (1999).

[87] Callister, *supra* n. 5, at 208.

[88] *Id*.

By using systems theory as their main instructional theory and introducing its concepts to students, legal research instructors would provide them with the conceptual framing of legal research's processes and goal of answering legal questions. Using active learning methods, instructors would engage students in class and be able to teach them in a manner that would reflect the methods they use to learn concepts, integrate the resources and technologies they use, and prepare them for practice more effectively than traditional research teaching methods. Using systems theory and active learning in combination would allow instructors not only to provide students with a solid educational experience but also to give them the mental framework to adapt their thinking and skills to be able to answer legal questions no matter the changes in resources and research technologies that will occur during their time as professionals.

Conclusion

Legal education is adapting to better prepare students for the practice of law. As part of that change, legal research instruction must find a theory and primary method to use as its pedagogical foundation. Callister has invited legal research professionals to offer their opinions and has begun the discussion of which theories and methods would be most effective by offering a modified version of Bloom's Taxonomy as a basis for future discussions. Bloom's Taxonomy is one of the fundamental education evaluation tools used to evaluate individuals, organizations, and teaching schemes as they work towards their educational objectives. The focus of Bloom's Taxonomy is to ensure that students understand the concepts they are introduced to starting from knowing basic facts and working toward understanding a concept, its components, and its place in the field they are studying so they can adapt it and utilize it in new situations.

Systems theory focuses on training individuals to understand a system, whether artificial or biological, through examination of its components, its inputs and outputs, and its goals. Systems theory has been adapted to study, understand, and refine a variety of processes and can be applied to the legal research realm. By looking at legal research as a system whose goal is to solve legal problems, students can better conceptualize the components of legal research and be able to adapt the skills they learn to changes in the legal research field and to use their knowledge to solve legal problems. Systems Theory's goal of training individuals to understand a system as a continuously active and changing endeavor fits with Bloom's Taxonomy's aim of complete and continuous understanding of a concept and should serve as a foundational theory for legal research.

The currently employed lecture-and-exercise method of teaching legal research has come under scrutiny and has been criticized as being ineffective in conveying legal research concepts in a manner that prepares students for practice. Using active learning methods of teaching, particularly cooperative exercises and projects, would not only engage students in the learning process, it also would better prepare them for the realities of practicing law. Working on projects based on clinic experiences

in a group setting allows students to learn in a way that mirrors how practitioners research and solve legal problems and allows them to discover the resources and steps needed from others who have faced similar legal issues. Making students an active part of classes not only motivates them, it also allows instructors to gauge how students are learning materials. Instructors can gain insights into the methods and technologies that students use to find the information they need during class discussions so they can adapt their teaching methods to better fit their students' knowledge levels and the tools their students use.

Legal research instruction must become more flexible and responsive to changes in order to meet the demands placed upon legal education. Using a combination of Callister's revision of Bloom's Taxonomy for evaluation and class structure, systems theory as an instructional foundation, and active learning methods to teach students legal research, instructors can develop a pedagogy that is adaptive, effective, and prepares students for solving clients' legal problems in practice. The application of the combination of evaluation tools, theory, and teaching method also would prepare students to think in a logical manner that could be applied outside the legal research realm so they could systematically evaluate problems, search for solutions, and solve issues in the most efficient manner.