

Stargate:¹ Malleability as a Threshold Concept in Legal Education

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What legal theorists now acknowledge with uneasiness,
 first-year law students with terror and confusion,
 and lawyers with prosaic calm
 is that there may not be a right answer to every legal question.
 Two reasonable minds, both analyzing the same set of legal materials,
 may differ as to their proper application.²

Teaching students to “think like a lawyer” is the overall objective of legal education. Thinking like a lawyer—or processing information as a disciplinary expert—can be defined to include these skills: identifying legal issues and locating relevant authority; using inductive reasoning to evaluate relevant authorities; reconciling and synthesizing prior cases; engaging in rule-based and analogical reasoning; identifying relevant policy considerations; recognizing the malleability of legal principles; identifying and evaluating ethical and professional considerations in analyzing a client matter; identifying and evaluating competing arguments and weighing their relative strength; predicting probable results and making recommendations from among alternative courses of action; adopting a client-centered approach to legal reasoning; applying critical reasoning and judgment to evaluate an issue; critically evaluating the reasoning and rationale for prior determinations.

Thinking like a lawyer requires students to employ the sophisticated and discipline-specific reasoning process unique to the law-educated; it is an aspirational attribute of legal education. The skills listed above are individually complex, and may require the mastery of a number of core concepts. Thinking like a lawyer also likely requires mastery of certain threshold concepts. These differ from core concepts insofar as they represent a cognitive shift in the

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Editors' note: Except for article and book titles, British spellings have been changed to American English spellings for consistency and readability.

1. In the motion picture, Stargate, while translating the symbols on a cover stone and revealing a portal to a distant planet, Egyptologist Daniel Jackson acknowledges, “It’s not ‘Door to Heaven’ . . . it’s . . . Stargate.” Stargate (Metro Goldwyn Mayer 1994)—Quotes, IMDB, available at <http://www.imdb.com/title/tt0111282/quotes>.
2. Linda Ross Meyer, When Reasonable Minds Differ, 71 N.Y.U. L. Rev. 1467, 1468 (1996).

thinking process of one within a discipline.³ I argue that mastering the concept of malleability of law is such a threshold concept.

Malleability of law is a concept *bounded* within the discipline, because it serves as a demarcation of law as a disciplinary area. It is a concept that is *integrative*, because, once revealed, it exposes students to interrelated concepts. Once mastered, the concept is *irreversible*. Understanding the malleability of law is *troublesome* for most students and may seem counterintuitive or alien. Finally, it is *transformative* as it occasions a shift in the student's perception of the law and how it applies to society. To the extent that malleability encompasses these unique characteristics of a threshold concept, it represents a "jewel in the curriculum."⁴ Legal educators therefore should focus on making malleability an explicit learning objective in the first-year curriculum and by coordinating instruction and assessment of it to marshal students across the threshold. In this way, threshold concept theory provides a beneficial lens to the ultimate educational objective of teaching students to think like a lawyer.

In Part I, I trace threshold concepts theory and explore more fully the characteristics of a threshold concept. I also distinguish between threshold and core, or key, concepts. Finally, I introduce the reader to liminality, or being stuck within the threshold. In Part II, I survey the development of threshold concept theory across disciplines, including an examination of their relatively limited study in legal education. I then consider malleability as a threshold concept in legal education and explore the implications of characterizing it as such.

I. Introduction

Researchers have proposed that threshold concepts exist within disciplines and that their identification can assist educators in evaluating curricular outcomes and pedagogies to support student learning.⁵ The term "threshold concept" emerged from the *Enhancing Teaching Learning Environments in Undergraduate Courses* project.⁶ This project involved teams of academics from universities in the United Kingdom and was intended to "develop conceptual frameworks

3. See Section I(B) and accompanying notes *infra*.
4. Glynis Cousin, An Introduction to Threshold Concepts, 17 *Planet 4*, 5 (2006) (noting that "[t]hreshold concepts can be used to define potentially powerful transformative points in the student's learning experience") [hereinafter Cousin, Introduction].
5. See generally Noel Entwistle, Threshold Concepts and Transformative Ways of Thinking within Research into Higher Education, in *Threshold Concepts Within the Disciplines* 21, 21-35 (Ray Land, Jan H.F. Meyer & Jan Smith eds., Sense Pub. 2008).
6. See Ray Land, Glynis Cousin, Jan H. F. Meyer & Peter Davies, Threshold Concepts and Troublesome Knowledge: Implications for Course Design and Evaluation in *Improving Student Learning: Diversity and Inclusivity* 53, 54 (Chris Rust ed., Oxford Centre for Staff & Learning Development 2005) (noting that threshold concepts "have attracted particular interest from economics communities in the UK . . . and Australia") [hereinafter Land et al., Implications].

directed at the quality of learning achieved in higher education institutions.”⁷ Threshold concepts within a discipline can be “considered akin to passing through a portal, or conceptual gateway, thus opening up a new and previously inaccessible way of thinking about something.”⁸ “Such concepts lead to a transformed way of understanding, or viewing something that may represent how people ‘think’ in a particular discipline, or how they perceive, apprehend or experience particular phenomena within a discipline.”⁹ Understanding a threshold concept helps a student move from a lay to disciplinary manner of constructing knowledge. According to Meyer and Land, the principal developers of theory on them, threshold concepts “bind a subject together, being fundamental to ways of thinking and practicing in that discipline.”¹⁰

Threshold concepts differ from those that are core or foundational primarily in their transformative quality. Core concepts “build layers upon the learning foundations already possessed.”¹¹ Threshold concepts, in contrast, possess additional, distinctive characteristics. They have been defined to be bounded, integrative, irreversible, troublesome, and transformative.¹² From a practical perspective, they “represent ‘potential blockages in the path of growing understanding,’ or the bits of the course where students ‘get stuck.’”¹³ “When mastered, [threshold concepts] are what enable students to look at problems in completely new ways and to ‘think, practice and talk’ in the manner of scholars of a particular discipline.”¹⁴

Because a threshold concept may be transformative, irreversible, and troublesome, mastering it can shift in the learner’s identity.¹⁵ As a result, some students may become stuck within the threshold, in a state referred to as “liminality.”¹⁶ There are two difficulties associated with this state: the

7. Sarah Barradell, *The Identification of Threshold Concepts: A Review of Theoretical Complexities and Methodological Challenges*, 65 *Higher Educ.* 265-66 (Feb. 2013) (on file with author).
8. Jan H. F. Meyer & Ray Land, *Threshold Concepts and Troublesome Knowledge: Linkages to Ways of Thinking and Practising Within the Disciplines*, in *Improving Student Learning: Ten Years On 1* (Chris Rust ed., Oxford Centre for Staff & Learning Development, 2003) [hereinafter Meyer & Land, *Linkages*].
9. Peter Davies & Jean Mangan, *Recognising Threshold Concepts: An Exploration of Different Approaches 2* (unpublished paper) (copy on file with author).
10. Land et al., *Implications*, *supra* note 6, at 54.
11. Barradell, *supra* note 7, at 266.
12. *See generally* *Overcoming Barriers to Student Understanding: Threshold Concepts and Troublesome Knowledge* (Jan H. F. Meyer & Ray Land, eds., Routledge 2006) [hereinafter *Overcoming Barriers*].
13. Guy Walker, *A Cognitive Approach to Threshold Concepts*, 65 *Higher Educ.* 247 (Feb. 2013) (copy on file with author).
14. *Id.*
15. *See* Land et al., *Implications*, *supra* note 6, at 55.
16. *See id.* In an earlier work, Meyer and Land “develop the argument that acquiring a threshold

student may become frustrated and give up;¹⁷ or some students develop “a partial, limited or superficial understanding of the concept to be learned which [researchers] have characterized as a form of ‘mimicry.’”¹⁸ A focus on the distinct characteristics of a threshold concept and how these contribute to students getting stuck, may help inform instruction that enables them to cross the threshold and to begin to analyze material in a disciplinary-specific manner.

A. Characteristics of Threshold Concepts

Since the introduction of the theory of threshold concepts, researchers have identified an array of their probable, likely, or essential¹⁹ characteristics. They have been described as likely bounded²⁰ within a discipline. Meyer and Land

concept may be likened in some disciplines to a ‘rite of passage.’” See Jan H. F. Meyer & Ray Land, *Threshold Concepts and Troublesome Knowledge: Issues of Liminality, in Overcoming Barriers*, *supra* note 12, at 19, 22 [hereinafter Meyer et al., *Liminality*]. Discussing the changes experienced after the liminal state, the authors note “[t]his point raises some interesting thoughts about what it means, for example, when a student for the first time becomes conscious . . . that they are, or are beginning to *think* like, an accountant, chemist, economist, historian, lawyer, mathematician, physicist, statistician, and so on.” *Id.* at 23 (emphasis in original).

17. See Land et al., *Implications*, *supra* note 6, at 55.

18. *Id.* The authors explain: “[w]e might speculate that a student in a ‘stuck place,’ having glimpsed the outline of a threshold portal and perhaps only vaguely aware of what lies beyond it, but conscious of the failure to cross it, may engage in two forms of mimicry.” Meyer et al., *Liminality*, *supra* note 16, at 24. “Compensatory mimicry” is described “as assuage of self that something is understood—witness the novice student who rehearses what is known (but irrelevant) in learning for examinations, rather than what is required to be known for them.” *Id.* The second form of mimicry is “conscious mimicry, when a student is aware that what is required is beyond grasp . . .” *Id.*

19. Barradell, *supra* note 7, at 266.

It is worth noting that at the time of these early writings on threshold concepts, the term itself was still evolving. The intention was ‘to open up discussion of threshold concepts as an important but problematic factor in the design of effective learning environments within disciplines’. Recently, Land formally spoke of seven characteristics—adding discursive and reconstitutive. Others have added their own ideas including threshold capabilities, and function, experiences and practice. It is clear that threshold concepts have generated a great deal of scholarly interest and judging by the wealth of literature that now exists, the idea has resonated with many academics in a range of disciplines. However, this ready acceptance of something that still is emerging has meant that aspects of the discussion around threshold concepts have not necessarily been undertaken with the rigour they perhaps should, and that a number of important questions remain unanswered. For example, how many of the five characteristics should a concept possess to be regarded as a threshold concept? Are some characteristics more important than others? If a concept is troublesome and integrative but not transformative, is it still a threshold concept?

Id. (citations omitted).

20. Meyer & Land, *Linkages*, *supra* note 8, at 6 (noting that threshold concepts are “[p]ossibly often (though not necessarily always) bounded”).

explain that they are bounded in a manner that “that any conceptual space will have terminal frontiers, bordering with thresholds into new conceptual areas.”²¹ This characteristic also shows in the extent that a threshold concept informs expert understanding within a discipline; each threshold concept “does not generally explain the whole of the discipline, only a specific sub-domain, or related aspects.”²² Moreover, this characteristic informs the limit of a concept’s applicability to other disciplinary boundaries: “It might be that such boundedness in certain instances serves to constitute the demarcation between disciplinary areas, to define academic territories.”²³

Threshold concepts also tend to be integrative, revealing relationships between concepts once viewed as distinct. Meyer and Land explain that threshold concepts “expos[e] the previously hidden interrelatedness of something.”²⁴ Mastery of a threshold concept may enable a student “to make connections that were hitherto hidden from view.”²⁵ The integrative quality helps students begin to process information in a disciplinary-specific manner.²⁶

21. *Id.*

22. Caroline Baillie, John A. Bowden & Jan H. F. Meyer, Threshold Capabilities: Threshold Concepts and Knowledge Capability Linked Through Variation Theory, 65 Higher Educ. 229 (Feb. 2013) [hereinafter Baillie et al., Knowledge Capability] (copy on file with author).

23. Meyer & Land, Linkages, *supra* note 8, at 6. The authors explain:

Within the field of Cultural Studies a threshold concept that has to be understood early is the breakdown of the barrier between high and popular culture. This is fundamental to the Cultural Studies approach. This is a significant departure from practice in English Literature where that concept not only doesn’t really exist but if it did (i.e. if you crossed that threshold) it would undermine the discipline of Eng. Lit. itself.

Id. (citations omitted).

24. Jan H. F. Meyer & Ray Land, Threshold Concepts and Troublesome Knowledge (2): Epistemological Considerations and a Conceptual Framework for Teaching and Learning, 49 Higher Educ. 373 (2005) [hereinafter Meyer & Land, Epistemological Considerations]. Other experts explain the integrative quality: “[P]reviously occluded relationships between former disparately perceived aspects of the subject landscape are revealed. This revelation may be protracted or sudden in the sense of something ‘clicking together.’” Baillie et al., Knowledge Capability, *supra* note 22, at 229.

25. Cousin, Introduction, *supra* note 4, at 4.

26. As Peter Davies and Jean Mangan explain:

Thus we are not looking for a set of isolated “magic concepts” but for a web of concepts that stand in a particular relationship to each other, arising partly from the historical development of thinking in a subject. Where successive developments in a subject incorporate previous thinking, a tightly structured set of discipline understanding develops. When successive developments in a subject stand largely in opposition to each other the relationships between ways of thinking in the subject becomes looser. However, in both cases a learner who grasps the significance of a theoretical development in the subject attains a new perspective on other aspects of the discipline.

Davies & Mangan, *supra* note 9, at 6.

These concepts are “[p]robably *irreversible*, in that the change of perspective occasioned by acquisition of a threshold concept is unlikely to be forgotten, or will be unlearned only by considerable effort.”²⁷ This does not mean that mastery of one cannot be enhanced. In fact, irreversibility “does not exclude subsequent modification or rejection of the concept for a more refined or rival understanding.” However, once learned, threshold concepts may be difficult to reject. This may be due, in part, to their integrative quality. “If a concept integrates a spectrum of prior understanding it is more likely to be irreversible because, once acquired, it holds together a learner’s thinking about many different phenomena.”²⁸

Threshold concepts also have been described as troublesome; they are “challenging, difficult to come to terms with, counter-intuitive or requiring a suspension of disbelief.”²⁹ They may be conceptually challenging because understanding them requires learners to understand and communicate within a new discourse community.³⁰ “Specific discourses have developed within disciplines to represent (and simultaneously privilege) particular understandings and ways of seeing and thinking. Such discourses distinguish individual communities of practice and are necessarily less familiar to new entrants to such discursive communities or participants who are peripheral to them.”³¹ These concepts also may seem alien or counter-intuitive to students.³² “From this view, mastery of a threshold concept can be inhibited by the prevalence of a ‘common sense’ or intuitive understanding of it.”³³ These concepts may be sufficiently troublesome so as to require the learner to reject previously held knowledge, causing emotional challenge. They “demand an

27. Meyer & Land, *Linkages*, *supra* note 8, at 5 (emphasis in original). Cousin notes, “[f]or teachers this can produce a low ability to empathize with student[s] who have yet to gain mastery. They cannot get back to ‘innocence’ so to speak.” Glynis Cousin, *Threshold Concepts, Troublesome Knowledge, and Emotional Capital: An exploration into learning about others*, in *Overcoming Barriers*, *supra* note 12, at 134,136 [hereinafter Cousin, *Emotional Capital*].
28. Davies & Mangan, *supra* note 9, at 2
29. Baillie et al., *Knowledge Capability*, *supra* note 22, at 229.
30. Meyer & Land, *Linkages*, *supra* note 8, at 11 (noting that the “discursive practices of a given community may render previously ‘familiar’ concepts strange and subsequently conceptually difficult”).
31. Land et al., *Implications*, *supra* note 6, at 55. “It is hard to imagine any shift in perspective that is not simultaneously accompanied by (or occasioned through) an extension of the student’s use of language. Through this elaboration of discourse new thinking is brought into being, expressed, reflected upon and communicated.” Meyer & Land, *Epistemological Considerations*, *supra* note 24, at 374. Baillie et al. further explain, “[D]iscourses have developed within disciplines to represent ‘ways of seeing and knowing’—but these can be troublesome for the newcomer especially if the words have alternative, everyday, but varying interpretations.” Baillie et al., *Knowledge Capability*, *supra* note 22, at 244.
32. Meyer & Land, *Linkages*, *supra* note 8, at 2 (noting that troublesome knowledge “is knowledge that is ‘alien’, or counter-intuitive or even intellectually absurd at face value”).
33. Cousin, *Introduction*, *supra* note 4, at 4.

integration of ideas and this requires the student to accept a transformation of their own understanding.”³⁴ “This transfiguration and extension of the subjectivity of the learner might be exhilarating but might incur a sense of disquietude or even loss on the part of the learner as they let go the security of a previously held conceptual stance to enter less certain terrain.”³⁵

Finally, there is an inherently transformative characteristic of a threshold concept. In fact, while researchers do not agree that all of the above characteristics exist for each threshold concept,³⁶ there is general agreement regarding their transformative quality. “The essential property of a threshold concept is its transformative character; one that occasions in varying degrees (attributable to individual differences) epistemic and ontological shifts in the learner.”³⁷ The transformative quality can also represent a reconstitution, or “a shift in learner subjectivity, a transconfiguration of self, of identity; an ontological shift.”³⁸

The characteristics of a threshold concept are related to one another.³⁹ Their bounded and troublesome aspects may be related to their integrative and transformative qualities. Integration, transformation and irreversibility can be viewed as “necessarily interwoven.”⁴⁰

[A] threshold concept helps delimit the boundaries of a subject because it integrates a particular set of concepts, beliefs and theories. The stronger the integration, the sharper the boundaries of a subject will appear The looser the integration, the more the boundaries of a subject become open to debate. The more transformative a concept, the more likely it is to be troublesome because it requires reconfiguration of previously acquired understanding.

A concept that integrates prior understanding is necessarily transformative because it changes a learner’s perception of their existing understanding. If a concept integrates a spectrum of prior understanding it is more likely to be irreversible because, once acquired, it holds together a learner’s thinking

34. Land et al., Implications, *supra* note 6, at 54. Cousin further explains, “Getting students to reverse their intuitive understandings is also troublesome because the reversal can involve an uncomfortable, emotional repositioning.” Cousin, Introduction, *supra* note 4, at 4.
35. Land et al., Implications, *supra* note 6, at 58.
36. See Barradell, *supra* note 7, at 266–67.
37. Baillie et al., Knowledge Capability, *supra* note 22, at 229.
38. *Id.* See also Cousin, Emotional Capital, *supra* note 27, at 135 (noting that “[n]ew understandings are assimilated into the learner’s biography, becoming part of what he knows, who he is and how he feels”).
39. See, e.g., Jan H. F. Meyer & Ray Land, Editors’ Preface to *Overcoming Barriers*, *supra* note 12, at xiv, xv. Meyer and Land explain that a “threshold concept represents a transformed way of understanding, or interpreting, or viewing something However, such transformation, though necessary for progress within a subject, may prove troublesome to certain learners for a variety of reasons, not the least of which is that such transformation entails a letting go of earlier, comfortable positions” *Id.*
40. Davies & Mangan, *supra* note 9, at 2.

about many different phenomena. To abandon such a threshold concept would be massively disruptive to an individual's whole way of thinking.⁴¹

B. Threshold Versus Core and Key Concepts

Threshold concepts differ from core, or key concepts. In fact, leading threshold concept expert Jan “Meyer’s notion of a threshold concept was introduced . . . as a particular basis for differentiating between core learning outcomes that represent ‘seeing things in a new way’ and those that do not. A threshold concept is thus seen as something distinct within what university teachers would typically describe as ‘core concepts.’”⁴²

Threshold concepts possess distinguishing characteristics. They are bounded, integrative, irreversible, troublesome, and transformative. On the other hand, core concepts “are the building blocks, fundamental for building a discourse of syllabus or syllabus.”⁴³ As building blocks, they “can only be put in position once other necessary layers of understanding have been laid down. This perception leads to an emphasis on the role of . . . key concepts in determining the overall shape and structure of understanding.”⁴⁴ Key concepts “open up the ‘portal’, but not in the sense that the term is often used in some educational contexts, as interchangeable with ‘core’ concepts . . .”⁴⁵ “A key is not the foundation that a building is constructed upon; it is what you use to open the door.”⁴⁶

In contrast, becoming a member of a discourse community who processes information in a disciplinary-specific manner⁴⁷ “requires more than understanding these ideas.”⁴⁸ Threshold concepts represent conceptual

41. *Id.*

42. Meyer & Land, Linkages, *supra* note 8, at 1.

43. Anna-Karin Carstensen & Jonte Bernhard, Threshold Concepts and Keys to the Portal of Understanding: Some Examples from Electrical Engineering, *in* Threshold Concepts within the Disciplines 143, 153 (Ray Land, Jan H. F. Meyer & Jan Smith, ed., Sense Pub. 2008). Noel Entwistle explains that “basic concepts that help students initially to see the subject in a different way are not integrative and so not threshold concepts as such, although they can act as transformative thresholds for individual students.” Entwistle, *supra* note 5, at 21, 32.

44. Davies & Mangan, *supra* note 9, at 3 (explaining that “[b]y implication, one concept is more advanced than another because it requires more layers or prior understanding”). Meyer and Land note that a “core concept is a conceptual ‘building block’ that progresses understanding of the subject; it has to be understood but it does not necessarily lead to a qualitatively different view of subject matter.” Meyer & Land, Linkages, *supra* note 8, at 4.

45. Carstensen & Bernhard, *supra* note 43, at 143.

46. *Id.* at 153. The authors explain that “we use the term as a more precise metaphor to mean that the concept in question acts like a key to *open up* the ‘portal’ of understanding.” *Id.* at 143 (emphasis in original).

47. Davies & Mangan, *supra* note 9, at 4 (referring to this as “acquiring the ‘way of thinking and practice’ in a subject”) (citations omitted).

48. *Id.*

change,⁴⁹ and “help the learner to employ newly acquired discipline concepts in making sense of each new set of phenomena they encounter.”⁵⁰

[C]onceptual change may also operate at a more profound level through the acquisition or organizing schemas of thought that may be associated with the development of disciplinary thought New developments within subjects change the way that members of academic communities think about other ideas that have been developed within the discipline However, in other cases old ideas are re-worked and subsumed within new theories. In these cases the acquisition of a new concept is transformative insofar as it integrates and reworks other disciplinary ideas that the learner has previously acquired⁵¹

C. Liminality

Because threshold concepts are troublesome and transformative, they represent areas in the curriculum where students struggle. Because “transformation . . . can . . . entail a shift in the learner’s identity . . . [some] students [can] remain stuck in an ‘in-between’ state in which they oscillate between earlier, less sophisticated understandings, and the fuller appreciation of a concept that their tutors require from them.”⁵² This has been referred to as a state of liminality,⁵³ “a suspended state of partial understanding, or ‘stuck place’, in which understanding approximates to a kind of ‘mimicry’ or lack of authenticity.”⁵⁴

49. *Id.* at 3-5.

50. *Id.* at 4. The authors explain that when “a concept is used to make sense of novel situations . . . we may talk of it being transformative.” *Id.* “Transformation occurs when a student finally grasps a key concept within the discipline’s view of the world and . . . experiences a change of world view themselves.” Aidan Ricketts, Threshold Concepts: ‘Loaded’ Knowledge or Critical Education, in *Threshold Concepts and Transformational Learning* 45, 45 (Jan H. F. Meyer, Ray Land & Caroline Baillie, eds., Sense Pub. 2010) [hereinafter Ricketts, Loaded Knowledge]. Ricketts cautions, however, that “[t]ransformative experiences may enhance a student’s critical awareness, but this should not be assumed; in some cases the nature of the transformation may actually reduce the scope for critical thinking.” *Id.*

51. *Id.*

52. Land, Implications, *supra* note 6, at 55.

53. “This in-between state we have termed a state of ‘liminality’, from the Latin meaning ‘within the threshold.’” *Id.*

54. Ray Land, Jan H. F. Meyer & Caroline Baillie, Editors’ Preface to *Threshold Concepts and Transformational Learning* ix, x (Ray Land, Jan H. F. Meyer & Caroline Baillie, eds., Sense Pub. 2010) [hereinafter Land et al., Preface]. The authors further explain:

Insights gained by learners as they cross thresholds can be exhilarating but might also be unsettling, requiring an uncomfortable shift in identity, or, paradoxically, a sense of loss. A further complication might be the operation of an “underlying game” which requires the learner to comprehend the often tacit games of enquiry or ways of thinking and practising inherent within specific disciplinary discourses.

Id.

The state of liminality is “within the threshold,”⁵⁵ and signifies an attempt to engage with the material.⁵⁶ However, some students get stuck within the threshold, and may “present a partial, limited or superficial understanding of the concept to be learned which [is] characterized as a form of ‘mimicry.’”⁵⁷ Progression between the pre-liminal, liminal, and post-liminal state is not necessarily linear. “[T]he acquisition of threshold concepts often involves a degree of recursiveness, and of oscillation.”⁵⁸ However, because “mastery of a threshold concept often involves messy journeys back, forth and across conceptual terrain,”⁵⁹ students may “become frustrated, lose confidence and give up.”⁶⁰ By identifying troublesome and transformative points in the curriculum and those where students get stuck, educators can structure learning to help move students through the liminal state.⁶¹

D. The Relational View of Threshold Concepts Features

While the characteristics of threshold concepts discussed above have been broadly considered, particularly with regard to whether each is essential, the five foregoing remain relatively unchallenged. Moreover, in their most recent compilation of papers, *Threshold Concepts and Transformational Learning*,⁶² Meyer and Land were “emboldened to see the consolidation of the characteristics of threshold concepts, and of learning thresholds more generally.”⁶³ Their chart below⁶⁴ demonstrates the relationship between the concepts and the progression through the liminal state.

55. Land, Implications, *supra* note 6, at 55.
56. “[O]nce a learner enters this liminal space, she is engaged with the project of mastery unlike the learner who remains in a state of pre-liminality in which understandings are at best vague.” Cousin, Emotional Capital, *supra* note 27, at 139.
57. Land et al., Implications, *supra* note 6, at 55. However, that mimicry is not simply a superficial understanding or modeling. Rather, it “seems to involve both attempts at understanding and troubled misunderstanding, or limited understanding, and is not merely intention to reproduce information in a given form.” Meyer & Land, Epistemological Considerations, *supra* note 24, at 377.
58. Land et al., Preface, *supra* note 54, at xi.
59. Cousin, Introduction, *supra* note 4, at 5.
60. Land et al., Implications, *supra* note 6, at 55.
61. So, for example, Meyer and Land argue that an identification of threshold concepts should inform instructors in several ways. The identification of threshold concepts should: 1) influence the sequence of material within a program of instruction; 2) identify “the processes through which learners are made ready for, approach, recognize, and internalize threshold concepts; and 3) illuminate “the ways in which learners and teachers recognise when threshold concepts have been internalized.” Land et al., Implications, *supra* note 6, at 56–57.
62. *Threshold Concepts and Transformational Learning* (Ray Land, Jan H.F. Meyer & Caroline Baillie eds., Sense Pub. 2010).
63. Land et al., Preface, *supra* note 54, at xi.
64. *Id.* at xii (the chart appears in the preface of *Threshold Concepts and Transformational Learning*—and can be verified here: <https://www.sensepublishers.com/media/1177-threshold->

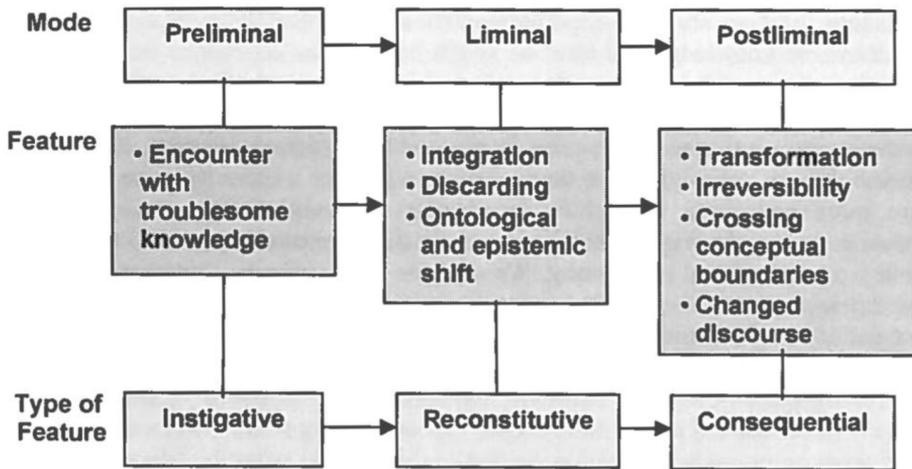


Figure 1. A relational view of the features of threshold concepts.

The progression begins with a student encountering troublesome knowledge.⁶⁵ “The troublesome knowledge inherent within the threshold concept serves here as an instigative or provocative feature that unsettles prior understanding rendering it fluid, and provoking a state of liminality.”⁶⁶ When a student enters the liminal state an integration of information begins to occur. This integration “requires a reconfiguring of the learner’s prior conceptual schema and a letting go or discarding of any conceptual stance.”⁶⁷ This reconfiguration is viewed as reconstitutive.⁶⁸ Finally, in the post-liminal state, the student is transformed in a way that is irreversible.⁶⁹ “These latter effects—the crossing of conceptual boundaries, transformation, irreversibility and changed discourse—can be characterized as consequential features of the threshold concept.”⁷⁰ It should be stressed, however, that this relational view does not have an “overly rigid

concepts-and-transformational-learning.pdf).

65. *See id.* (noting that “the journey towards the acquisition of a threshold concept is seen to be initiated by an encounter with a form of troublesome knowledge in the pre-liminal state”).

66. *Id.* (emphasis in original).

67. *Id.* (emphasizing that “[t]his reconfiguration occasions an ontological and epistemic shift”).

68. *See id.* (“[t]he integration/reconfiguration and accompanying ontological/epistemic shift can be seen as reconstitutive features of the threshold concept. Together these features bring about the required new understanding”).

69. *See id.* (“As a consequence of this new understanding the learner crosses a conceptual boundary into a new conceptual space and enters a post-liminal state in which both learning and the learner are changed.”).

70. *Id.*

sequential nature,” and that the “acquisition of threshold concepts often involves a degree of recursiveness.”⁷¹

II. Threshold Concepts in the Disciplines

Economics educators in the United Kingdom who participated in a joint project of the Economic and Social Research Council⁷² and the Teaching and Learning Research Programme⁷³ first introduced the notion of a threshold concept in 2003.⁷⁴ Many disciplines since have come together to identify widely accepted threshold concepts. An examination of a few of these helps provide a backdrop to the complexity of the concepts within the disciplines and to illustrate how they represent transformative, disciplinary ways of thinking.

One of the first and often cited threshold concepts to be explored by researchers was opportunity cost in economics.⁷⁵ “Fundamental to the discipline of economics is the issue of choice: choosing between scarce resources or alternatives. Economists are interested in how individuals, groups, organizations, and societies make choices, particularly when faced with the reality that resources and alternatives are limited.”⁷⁶ Opportunity cost was defined as “the evaluation placed on the most highly valued of the rejected alternatives or opportunities.”⁷⁷

71. *Id.* (further noting that “running throughout this transformational process, in what we might call the ‘subliminal’ mode, there is often an ‘underlying game’ in which ways of thinking and practicing that are often left tacit come to be recognized, grappled with and gradually understood”).

72. The Economic and Social Research Council is “the UK’s largest organization for funding research on economic and social issues.” About us, Economic and Social Research Council (2013), available at <http://www.esrc.ac.uk/about-esrc/>.

73. “The Teaching and Learning Research Programme had six distinct aims [that were] related to performing and promoting excellent educational research and ensuring that it was used to enhance learning.” TLRP: AIMS—Outcomes, Teaching and Learning Research Programme, available at <http://www.tlrp.org/aims/index.html>. The six aims included 1) Learning; 2) Outcomes; 3) Lifecourse; 4) Enrichment; 5) Expertise; and 6) Improvement. *Id.*

74. Meyer & Land, Linkages, *supra* note 8, at 1:

This paper arises from ongoing research undertaken by the Economics team of the ESRC/TLRP Project ‘Enhancing Teaching and Learning Environments’ (ETL). This forms part of the large scale ESRC Teaching and Learning Research Programme Phase 2. ETL is seeking to identify factors leading to high quality learning environments within five disciplinary contexts across a range of HE institutions. Meyer’s notion of a *threshold concept* was introduced into project discussions on learning outcomes as a particular basis for differentiating between core learning outcomes that represent “seeing things in a new way” and those that do not.

Id.

75. *Id.* at 3 (citations omitted).

76. *Id.* at 4 (citations omitted).

77. *Id.* (citations omitted).

Thus opportunity cost captures the idea that choices can be compared, and that every choice (including not choosing) means rejecting alternatives. A student who has a good grasp of this concept has moved a long way toward breaking out of a framework of thinking that sees choices as predetermined, or unchangeable. They have also moved toward seeing “two sides” of every choice, and in looking beyond immediate consequences, and even just monetary “costs” towards a more abstract way of thinking.⁷⁸

Because opportunity cost is both “influenced by prior choices that have been made, but with respect to this choice itself, [it] is [also] *choice-influencing* rather than *choice-influenced*,” once the concept is understood and “accepted” by the individual student as a valid way of interpreting the world, *it fundamentally changes their way of thinking about their own choices, as well as serving as a tool to interpret the choices made by others.*⁷⁹

Educators in mathematics have also arrived at a degree of consensus on threshold concepts. “In pure mathematics the concept of a *limit* is a threshold concept; it is the *gateway* to mathematical analysis and constitutes a fundamental basis for understanding some of the foundations and application of other branches of mathematics such as differential and integral calculus.”⁸⁰ This illustrates how an understanding of the concept of limits is integrative and transformative.

Since the introduction of threshold concepts in 2003, many disciplines have endeavored to identify these notions. Published in 2008, *Threshold Concepts within the Disciplines*⁸¹ is a compilation of papers from a variety of disciplinary-specific inquiries into threshold concepts. Chapters include an examination of

78. *Id.* (citations omitted).

79. *Id.* (citations omitted) (emphasis in original).

80. *Id.* at 3. Mathematicians may have identified some of the characteristics of threshold concepts prior to the theory being fully articulated by Land and Meyer.

That mathematicians themselves are aware of issues that surround threshold concepts is evident from the work of Artigue who refers to ‘a theory of epistemological obstacles’ and, by way of summary, gives as a first example of such obstacles: “...the everyday meaning of the word ‘limit,’ which induces resistant conceptions of the limit as a barrier or as the last term of a process, or tends to restrict convergence to monotonic convergence...” The idea is then developed by way of more complex examples that, as forms of knowledge, ‘epistemological obstacles’ constitute ‘resistant difficulties’ for students.

Id. (citations omitted).

81. Entwistle, *supra* note 5, at 21–35.

threshold concepts in computer science,⁸² electrical engineering,⁸³ biology,⁸⁴ and grammar,⁸⁵ among others. These examples, while undoubtedly challenging for non-disciplinary experts, are included here to illustrate how other disciplines have identified concepts that are troublesome to student understanding, but also crucial to disciplinary learning.

A. Exploration of Threshold Concepts in Legal Education

Examination of threshold concepts within legal education has been more limited. As recently as 2008, in an issue of *Directions*, a newsletter of the UK Center for Legal Education, Julien Webb noted that “[s]o far, I am not aware of any published work examining legal threshold concepts in any depth, but I suggest, intuitively, that some potential examples of the latter could include constructs such as analogy, materiality, responsibility, allocation of risk, and

82. In the chapter, “Threshold Concepts in Computer Science: A Multi-National Empirical Investigation,” researchers explored the concept of “object-oriented programming” as a threshold concept. Carol Zander et al., *Threshold Concepts in Computer Science: A Multi-National Empirical Investigation*, in *Threshold Concepts within the Disciplines*, 105, 110–11 (Ray Land, Jan H. F. Meyer & Jan Smith, eds., Sense Pub. 2008). With regard to object-oriented programming, the authors note, “[i]deally, the graduates of computer science programmes should be able to produce high quality software that is correct, efficient, reusable, extensible, and easy to use. Object-oriented programming languages support these goals” Because learning object-oriented programming is troublesome, integrative, irreversible, and transformative, the authors conclude it is a threshold concept. *Id.* at 110–12.

83. See, e.g., Carstensen & Bernhard, *supra* note 43, at 143–54. Authors Carstensen and Bernhard considered troublesome concepts in the learning of electrical circuits and control theory, such as frequency response [T]hey found that certain concepts, such as the Bode Plot in circuitry, can function like a specialist ‘key’ that opens up the disciplinary portal of understanding. Moreover, teaching a ‘key’ concept . . . does not just open up that particular concept, but also the learning of other concepts related to it.

Land et al., Preface, *supra* note 54, at xv (emphasis in original).

84. See Charlotte Taylor, *Threshold Concepts, Troublesome Knowledge and Ways of Thinking and Practising—Can We Tell the Difference in Biology?*, in *Threshold Concepts within the Disciplines* 185, 185 (Ray Land, Jan H. F. Meyer & Jan Smith, eds., Sense Pub. 2008). Author Charlotte Taylor interviewed biology teachers and graduates and noted that the interviews “provide clear evidence of the complexity of the discipline of biology, and build a distinct picture of key areas of troublesome knowledge and potential thresholds.” *Id.* at 193. There was consensus on “a number of areas of biology which possessed the characteristics of threshold concepts, and most of these areas dealt with the complexity, dynamics and variability of biological systems.” *Id.*

85. See Marina Orsini-Jones, *Troublesome Language Knowledge: Identifying Threshold Concepts in Grammar Learning*, in *Threshold Concepts within the Disciplines* 213 (Ray Land, Jan H. F. Meyer & Jan Smith, eds., Sense Pub. 2008). Author Marina Orsini-Jones notes that “individual grammar components—morphemes, words, clauses, phrases— . . . [are each] self-standing threshold concept[s], which, once mastered, open[] up a new door into the next one.” *Id.* at 219. Alternatively, “it could be argued that the *rank scale* concept underpinning functional grammar is the overarching threshold concept . . . and that is in turn composed of what could be defined as the *rank scale threshold concept’s components*, each of which needed to be crossed in order to grasp the overarching concept.” *Id.* (emphasis in original).

the like.”⁸⁶ In addition, there are a few international scholars who posit that legal reasoning, or thinking like a lawyer, is a threshold concept.

A group of law and physics educators in Australia convened to identify threshold concepts within their respective disciplines.⁸⁷ The Akerlind et al. group was

initially drawn to the overall concept of *uncertainty* as a threshold concept. That is, that new students in both these disciplines often assume there is one correct answer, and that a key goal of a university education in law or physics, particularly in the first year, is to make students comfortable with conceptual ‘greyness’—the notion of uncertainty, and hence complexity.⁸⁸

In addition, the law group considered “other possible concepts such as the rule of law, and the notion of precedent.” However, “[a]s discussions progressed . . . the key threshold objective in the learning of law was identified as being able ‘to think like a lawyer.’”⁸⁹ The group defined this concept to

86. Julian Webb, Threshold Concepts: A New Tool for Learning Law? (Directions Autumn 2008) at UKCLE, UK Centre for Legal Education, July, 9, 2010, *available at* <http://www.ukcle.ac.uk/resources/directions/previous/issue17/threshold/> [hereinafter Webb, New Tool]. Webb notes that the cited examples are “most cases, quite big, relatively abstract (but also highly practical) concepts.” *Id.* He further highlights the value of trying to identify threshold concepts, noting that “we can certainly begin to see how a stronger focus on such concepts could open up some very different ways of organizing and conceptualizing the undergraduate curriculum, particularly in the first year, when so much of our students’ way of knowing and learning becomes established.” *Id.* In later research, Webb suggests values as a threshold concept in legal education. *See* Julian Webb, Dealing (with) uncertainty—Values as ‘threshold concepts’ in legal education, Slidefinder, April 23, 2009, *available at* http://www.slidefinder.net/d/dealing_uncertainty_values_threshold_concepts/32270285. Within doctrinal areas there may be other threshold concepts, or portals, necessary to being able to think like a lawyer.

Examples could include the duality of control and obligation that persists in the law of trusts (legal and beneficial ownership, fiduciary duties), the rather bizarre metaphor of the business corporation as a type of legal person, or the almost self-contradictory duplicity of English constitutionalism (the monarch has powers that the monarch never uses). These ideas are certainly not forgotten; they are in fact internalized, rendered normal, natural and largely unquestioned for the legal thinker and, as already observed, can even become the very form of abstraction upon which we quietly boast the intellectual integrity of our discipline. To the neophyte, however, they can be bizarre and counter-intuitive, if not just plain repugnant.

Aiden Ricketts, Threshold Concepts in Legal Education, 26 Directions: J. Educ. Studies 2, 6 (2006) (noting that “[a]s previously transformed legal thinkers we can so easily forget just how counter-intuitive established common law ideas actually are”) [hereinafter Ricketts, Legal Education].

87. *See* Gerlese Akerlind et al., A Threshold Concepts Focus to First Year Law Curriculum Design: Supporting Student Learning Using Variation Theory, presented for an Australian Learning and Teaching Council (ALTC) funded curriculum renewal project, *available at* http://www.fyhe.com.au/past_papers/papers10/content/pdf/12B.pdf (copy on file with author) [hereinafter Akerlind et al., Threshold Concepts Focus].

88. *Id.* at 2.

89. *Id.*

include “an understanding of uncertainty, that there is not necessarily a quick or simple or one right answer.”⁹⁰ However, it extended the term “more broadly to accepting different ways of arguing and different possibilities for analysis of the facts and problem at hand.”⁹¹ The group concluded that “the central threshold concept for law, the most important threshold concept for the first year of legal education, was legal reasoning.”⁹²

Similarly, Aiden Ricketts, a professor at the University of the South Pacific, identified “thinking like a lawyer” as a threshold concept of legal education.⁹³ Without specifically defining the term, Ricketts observed that

Law is famous for its specialized language (jargon) and for the peculiar forms of reasoning (legal reasoning) that are routinely employed. . . . A term often used by legal educators that aptly describes the transformations required of aspiring law students is that of training students to “think like a lawyer.”⁹⁴

As for the threshold concepts characteristics, Ricketts notes that “[t]he very idea of teaching students to think like a lawyer invokes the idea that students need to transform their thought processes, and it is strongly suggestive of a counter-intuitive form of discourse that is central to the discipline’s self image.”⁹⁵ Moreover, “‘legal’ forms of thinking and analysis become not only essential tools of practice, but key and often exalted aspects of professional identity for the trained (and transformed) legal thinker.”⁹⁶ Finally, “[i]t can be difficult for experienced legal scholars to appreciate and even remember how counter-intuitive much of the discipline is, as they have long since internalized their own excursion through the thresholds.”⁹⁷

Ricketts also proposed two related critical thinking skills as threshold concepts in legal education, assuming that one of its objectives is to encourage students to critically question the law.⁹⁸ He argues that “students would be

90. *Id.*

91. *Id.*

92. *Id.*

93. Ricketts, *Legal Education*, *supra* note 86, at 5.

94. *Id.*

95. *Id.* at 6.

96. *Id.*

97. *Id.*

98. *See generally* Ricketts, *Loaded Knowledge*, *supra* note 50. Noting that such an approach to legal education would be radical, he explains that

One of the most common criticisms of traditional legal education is the tendency to treat lawful authority and legitimacy as a given. The combination of students with little pre-existing inclination to question the fundamental foundations of the legal system with a traditional legal educational approach that puts such questions firmly out of bounds is a classical example of why so much legal education could be described as anti-critical by nature.

most challenged when provoked to deeply question: 1) existing assumptions about the legitimacy of centralized legal authority; and (to a lesser degree) 2) the usefulness of law as a tool for social control.”⁹⁹ Ricketts posits that “these two ideas could be described as the most likely threshold issues that students would be challenged to traverse in the process of developing a critical approach to legal phenomena”¹⁰⁰

Finally, Nick James, an Associate Professor at the TC Beirne School of Law, University of Queensland, argues that “thinking like a lawyer” is a threshold concept of legal education.¹⁰¹ James acknowledges the varying definitions for what it means to think like a lawyer. He notes that “[f]or many, the phrase is interpreted narrowly to mean engaging in formal legal reasoning: recognizing legal issues, locating the relevant legal rules, applying the rules to the facts of a problem, and reaching a rational and convincing conclusion.”¹⁰² The term can also include “the ability to identify and work with the policies underlying the legal rules and take advantage of the fundamental indeterminacy in the law.”¹⁰³ Even more broadly, legal reasoning can serve “as a style of thinking that is logical, rigorous, value-neutral and unemotional, or characterized by certain traits such as resistance to jumping to conclusions, a tolerance of ambiguity, a tendency to engage in ‘devil’s advocacy’, and a preference for facts over emotions.”¹⁰⁴ James explains that

The common characteristic of these proffered definitions is the explicit or implicit insistence that to think like a lawyer a student must not only know the law but also be willing and able to set aside their intuitive or emotional response to a legal issue and to ignore their personal beliefs about “right or

Id.

99. *Id.* at 53.

100. *Id.*

101. See Nickolas James, Teaching First Year Law Students to Think Like (Good) Lawyers, in *First Year Experience in Law School: A New Beginning?* (Leon Wolff & Maria Nicolae eds., Halstead Press: Sydney 2013) (copy on file with author). James asserts that

[I]nstead of treating “thinking like a lawyer” as something to be learned by law students immediately and treating an appreciation of ethical practice and social justice as something to be learned by law students by the time they graduate, “thinking like a lawyer” should be redefined to include an appreciation of ethical practice and social justice, and the redefined notion of “thinking like a (good) lawyer” should be repositioned as an explicit threshold concept for first year law students.

Id. at 1.

102. *Id.* (citing Frederick Schauer, *Thinking Like a Lawyer: A New Introduction to Legal Reasoning* (Harvard Univ. Press, 2009)).

103. *Id.* (citing Kenneth J Vandeveld, *Thinking Like a Lawyer: An Introduction to Legal Reasoning* (Westview Press, 2d ed. 2010)).

104. *Id.* (citations omitted).

wrong” and “fair or unfair.” . . . [T]hey must be rational and objective in the application of legal rules to reach a logically defensible conclusion.¹⁰⁵

James argues that because “[l]aw students are taught from their first day of law school to separate what they do as a lawyer from their personal values in order to be neutral and objective,”¹⁰⁶ they are given the incorrect impression that ethics and justice “are of marginal importance to the study and practice of law.”¹⁰⁷ Thus, James would redefine thinking like a lawyer to “include an appreciation of ethical practice and social justice.”¹⁰⁸ Further, “the redefined notion of ‘thinking like a (good) lawyer’ should be repositioned as an explicit threshold concept for first year law students.”¹⁰⁹

These scholars support legal reasoning, or thinking like a lawyer, as a threshold concept by assessing it against such concepts’ characteristics. Legal reasoning is bounded “in that it marks a line of differentiation between the discipline of law and other disciplines.”¹¹⁰ It is integrative “because it facilitates student understanding about what lawyers (solicitors, barristers, judges etc.) are doing; why it is possible to have multiple perspectives and arguments.”¹¹¹ Learning to think like a lawyer is irreversible because once students “learn how to think like a lawyer it is difficult to return to their earlier way of thinking about law—they can’t go back to being ‘naïve.’”¹¹² Put simply, “The ability to apply legal reasoning is irreversible. Once you are able to reason, analyze and

105. *Id.*

106. *Id.* at 2 (noting that law students “are taught to disregard what they believe to be good and fair in favour of identifying the relevant legal rules and applying them objectively to the facts of a legal problem”).

107. *Id.* To the contrary, James contends “[e]thics and justice *are* relevant considerations when lawyers engage with the law, and when called upon to engage with the law a lawyer’s personal values frequently *do* come into play.” *Id.* (emphasis in original).

108. *Id.*

109. *Id.* James concludes that

By expanding the notion of “thinking like a lawyer” to include an appreciation of the importance of ethical practice and social justice, we acknowledge that questions of “right or wrong” and “fair or unfair” are appropriate topics for lawyerly reflection, which in turn gives the students permission to incorporate their personal beliefs and values into the legal reasoning process.

Id. at 17.

110. James, *supra* note 101, at 5.

111. Akerlind et al., Threshold Concepts Focus, *supra* note 87, at 3. The authors further explain that “[l]egal reasoning inculcates students into the integrated nature of the culture of legal argument and the importance of authority and evidence to the efficacy of legal argument.” *Id.* James asserts that thinking like a lawyer, or legal reasoning as he has broadly defined it, “unites the various law topics studied at law school.” James, *supra* note 101, at 5.

112. James, *supra* note 101, at 5

argue like a lawyer, and use authority to provide evidence for a position and assertions, you cannot undo that skill.”¹¹³

Legal reasoning is also troublesome. “[I]t contradicts some of the students’ prior assumptions (or everyday ways of knowing things) up to the point of entry to law school, and therefore it takes them out of their comfort zone.”¹¹⁴ Finally, learning to think like a lawyer is transformative. “[O]nce understood law students think differently not only about the subject of their studies but the legal, political and social issues they hear about in the media and encounter in their daily lives.”¹¹⁵ “Legal reasoning is transformative because being able to engage in it provides students with a sense of self-identity as a lawyer; they pass through a portal of knowing what it means to be a lawyer.”¹¹⁶

B. Malleability as a Threshold Concept in Legal Education

While the foregoing arguments for legal reasoning—or thinking like a lawyer—as a threshold concept are alluring, I would suggest that it is too broad to be considered a threshold concept. Rather, I define *thinking like a lawyer* expansively to include ability to do the following:

- Identify legal issues and locate relevant authority;
- Use an inductive reasoning to evaluate relevant authorities;
- Reconcile and synthesize prior cases;
- Engage in rule-based and analogical reasoning;
- Identify relevant policy considerations;
- Recognize the malleability of legal principles;
- Identify and evaluate ethical and professional considerations in analyzing a client matter;
- Identify and evaluate competing arguments and weigh the relative strength of those arguments;
- Predict probable results and make recommendations from among alternative courses of action;

113. Akerlind et al., *Threshold Concepts Focus*, *supra* note 87, at 3.

114. *Id.* Legal reasoning

[i]nvolves learning how to take responsibility for your position and your argument. It contradicts the possibility of simply making assertions without backing them up, or of finding the one ‘right’ answer. It forces students to re-consider, and possibly to change, their preconceptions about what law is and what law can achieve.

Id. Further, James explains, “students must learn to both set aside their personal views and values in favour of objectivity and neutrality, and accept the fundamental contingency of law and legal reasoning.” James, *supra* note 101, at 5.

115. *Id.*

116. Akerlind et al., *Threshold Concepts Focus*, *supra* note 87, at 3. The authors observe that “[o]nce inducted into legal reasoning a student is able to look at the other side, accept there isn’t a right answer, know that they have to think deeply about meaning and argument, and be persuasive.” *Id.*

- Adopt a client-centered approach to legal reasoning;
- “Apply critical reasoning to legal issues through independent thought and judgment informed by an understanding of legal principles and the concepts, principles, policies, and values that underpin and permeate the law;”¹¹⁷ and
- “Evaluate opinions, make decisions, and reflect critically on the justifications for decisions in the light of legal principles.”¹¹⁸

Many of these skills are complicated and difficult for students. And, many may exhibit characteristics of a threshold concept. Malleability exhibits all of them and is a portal to understanding *how to think like a lawyer*. In contrast, thinking like a lawyer, read broadly to encompass the sophisticated skills listed above, is an aspirational goal of legal education, or a graduate attribute.¹¹⁹

James argues that while “[t]he ability to think like a lawyer is usually identified as an *outcome of* legal education—as a graduate attribute,”¹²⁰ “[t]hinking like a lawyer is a key idea, concept or process that needs to be understood by a student before they can understand other parts of the degree—a ‘portal or gateway which once the learner has passed through it will illuminate and underpin much subsequent understanding.’”¹²¹ I heartily endorse James’ suggestion that teaching students to think like a lawyer should include an explicit emphasis on considerations of ethics and social justice.¹²² However, I am not persuaded that thinking like a lawyer “is something a law

117. James, *supra* note 101, at 2.

118. *Id.*

119. By “graduate attribute” I simply mean the information and skills that law students should be expected to know or understand when they graduate. See Vicki Waye & Margaret Faulkner, Embedding E-Portfolios in a Law Program: Lessons from an Australian Law School, 61 J. Legal Educ. 560 (2012). The authors explain

Australian law schools aim to impart skills and values such as leadership, effective communication, problem solving, organization, critical reflection, adaptability, creativity, and social responsibility. These general understandings and competencies are collectively known as graduate attributes or graduate qualities. In Australia and the United Kingdom, graduate attributes transcend specific fields of study given the likelihood that graduates will pursue a range of career paths over their lifetimes. Nevertheless, because graduate attributes are developed within the context of particular programs of study, they are interpreted and cultivated with specific discipline practices in mind.

Id. at 565 (citations omitted).

120. James, *supra* note 101, at 2.

121. *Id.* at 4.

122. *Id.* at 2-5, 17. See also Melissa H. Weresh, Legal Writing: Ethical and Professional Considerations (Matthew Bender & Co., Inc., 2d. ed. 2009); Melissa H. Weresh, Fostering a Respect for our Students, our Specialty, and the Legal Profession: Introducing Ethics and Professionalism into the Legal Writing Curriculum, 21 Touro L. Rev. 427 (2005); Melissa H. Weresh, An Integrated Approach to Teaching Ethics and Professionalism, 18 No. 2 Prof. Law 25 (2007).

student must be able to do from the very beginning of their studies to succeed in their study of the law¹²³ or that it “is a pre-requisite to engaging with the content of almost every law subject.”¹²⁴ The difference may be in semantics, or in how we define “thinking like a lawyer.” Read broadly to include the features James suggests, I would argue, makes the concept too expansive to be considered threshold.

I think the aspirational graduate attribute of thinking broadly as a lawyer requires the mastery of core and threshold concepts. Core concepts that “help students initially to see the subject in a different way are not integrative and so not threshold concepts as such, although they can act as transformative thresholds for individual students.”¹²⁵ Threshold concepts, in contrast, open “up the subject through the integration of other concepts.”¹²⁶ Malleability, as explored below, is one of those concepts.

I would argue, however, that thinking like a lawyer falls into another category, one “too broad to be called a concept.”¹²⁷ Thinking like a lawyer may be better described “as a disciplinarily specific way of thinking, but it still does serve as an important transformative threshold for students.”¹²⁸ This way of thinking is “unlikely, however, to be experienced as a single event, as can happen with a threshold concept, but rather as a growing awareness of the nature of the discipline as a whole, along with the steady build up of professionally relevant knowledge and skills.”¹²⁹ Indeed, the Akerlind et al. group that identified legal reasoning as a threshold concept acknowledged the potential over-breadth of this concept, noting that “the transformative nature of legal reasoning can also be seen as a staircase rather than a portal—that is, its development might take three or four semesters (or a lifetime), but the teaching of the concept in the first year is a critical first step on that staircase.”¹³⁰

123. James, *supra* note 101, at 4.

124. *Id.*

125. Entwistle, *supra* note 5, at 32.

126. *Id.*

127. *Id.*

128. *Id.*

129. *Id.* (noting that “[c]onceptions of knowledge and learning represent thresholds of this broader kind . . .”).

130. Akerlind et al., Threshold Concepts Focus, *supra* note 87, at 3. In terms of the depth and breadth of the concept, Akerlind et al. identified four levels of understanding for the concept of legal reasoning. They articulated these levels as follows:

1. a formulaic process for predicting a legal outcome; 2. an interpretative process of arguing for an outcome serving the needs of the client; 3. a dynamic, responsive and innovative process for allowing the existing law to reflect changes in society; and 4. a means by which law can be changed for the good of society, where it is necessary to use the law as an instrument to effect social change.

Id. at 304. It is likely that stages 3 and 4, and possibly stage 2, require an understanding of the malleability of law.

The concept of malleability, or, put another way, the latitude a lawyer has in articulating legal principles,¹³¹ is a threshold concept. As Elaine Webster observes, “a fundamental characteristic of law is its contingency, which encapsulates the existence of predictability alongside indeterminacy and contextual dependence in legal interpretation.”¹³² Webster and Claire McDiarmid, lecturers at the law school at the University of Strathclyde in Glasgow, assert contingency and contested narrative as threshold concepts in law.¹³³ As a threshold concept introduced in the first year, implicitly in courses relying on a Socratic dialogue and explicitly in many legal analysis and writing courses, malleability—standing alone¹³⁴—is bounded, integrative, irreversible, troublesome, and transformative.

The malleability of legal principles, in legal reasoning and advocacy, is *bounded* within the legal discipline; it informs how law-trained individuals approach the law not as a static set of rules but as a framework to scaffold legal argument. Malleability is also *integrative*. It brings together other concepts within legal analysis, such as jurisdiction, precedential value, rule

131. Of course, this flexibility is not without limits. Ethical and professional norms circumscribe the ability of an advocate to support an assertion with authority that, in fact, contradicts or falls short of supporting the position advanced.
132. Elaine Webster & Claire McDiarmid, Contingency in Practice: Applying a Threshold Concept in Law *in* Threshold Concepts: From personal practice to Communities of Practice 53 (2012), available at http://www.nairtl.ie/documents/BookofAbstracts_ONLINE.pdf?PH_PSESSID=begbregab9356a4ab602bb26cae384d9.
133. See Elaine Webster & Claire McDiarmid, Contingency and Contested Narrative: A Threshold Concept in Legal Education at UKCLE, UK Centre for Legal Education, July 9, 2010, available at <http://78.158.56.101/archive/law/resources/directions/issue-20-spring-2010/contingency-and-contested-narrative-a-threshold-co/index.html> [hereinafter Webster & McDiarmid, Contested Narrative].
134. By “standing alone” I mean to reinforce that understanding the malleability of law is itself a threshold concept. Webster and McDiarmid go further, adding contested narrative and indeterminacy to the threshold concept identification. Webster & McDiarmid, Contested Narrative, *supra* note 132, at 8. “We build into our exposition the idea of law as a contested narrative and survey some of the implications of this view.” *Id.* The authors acknowledge the “difficult questions that may follow from asserting that law is contested narrative (e.g. the implication that law is ‘only’ narrative; see Baron and Epstein 1997).” *Id.* at 9. While I find their observations regarding contested narrative persuasive, the narrower concept of malleability of law arguably stands alone as a threshold concept. In other words, I do not intend the term malleability to extend to the broader debate regarding indeterminacy in law. See Ross Meyer, *supra* note 2. Meyer condenses the debate to the following:

The theoretical dangers of legal indeterminacy, and the practical reality of it, have spawned a prodigious literature in legal theory. The participants agree that radical uncertainty desperately undermines the legitimacy of law and legal institutions. The question is whether law is, indeed, so radically indeterminate. On the one hand are those theorists who assert that it is—that there is never an easy case because a valid legal argument can be constructed on either side of even the “clearest” application of law to facts. On the other hand are those theorists who counter that the law is indeterminate only in a few hard cases, where there are legal gaps.

Id. at 1468–69 (citations omitted).

of law, and *stare decisis*. “Crossing the threshold allows student to recognize simultaneously law’s certainty—a quality which its continued credibility requires it to possess—alongside its essential malleability.”¹³⁵ It is *irreversible*; once a student understands that the law can be approached critically and with a degree of latitude, the concept cannot be unlearned.

Malleability of law is also troublesome and transformative. Students typically come to law school with an understanding that the law represents a set of rules that govern society. The idea that those rules are malleable may be counter-intuitive, alien, or even objectionable.¹³⁶ The “fundamental uncertainty over what ‘the law’ is—an issue which had hitherto been regarded as certain and definable—may indeed be conceptually difficult for students. Consequently, they may experience this turning point as challenging and it may give rise to further unsettling realizations.”¹³⁷ Once understood, however, students cross a threshold and their understanding of the law, and of legal reasoning, is transformed. They no longer will view the law as a fixed set of rules but will appreciate the role the advocate has in shaping legal argument and the resulting institution of law.¹³⁸

This idea is supported by the Akerlind et al. study that identified legal reasoning as a threshold concept. The researchers focused on variation theory, which posits “misunderstandings (or [a] less sophisticated understanding) of a disciplinary concept may be explained in terms of students’ lack of awareness of key features or aspects of a concept.”¹³⁹ In addressing variation

135. Webster & McDiarmid, *Contested Narrative*, *supra* note 133, at 8.

136. See Laura P. Graham & Miriam E. Felsenbug, *Beginning Legal Writers in Their Own Words: Why the First Weeks of Legal Writing are so Tough and What We Can Do About It*, 16 *Legal Writing: J. Legal Writing Inst.* 223, 256 (2010). The authors surveyed first-year law students during the first eight weeks of their first semester. *Id.* at 246–56. After approximately two months of instruction, students were asked how their opinions had changed as to what the study of law involves. *Id.* While most students did not acknowledge a change in opinion, for the ones who did “a common theme was that the law was not as concrete as they thought.” *Id.* at 256. Student responses included the following observations:

“Yes, it is researching in order to make an educated guess; the law is not as definite as I thought it would be.”

“Concepts are much more fluid than I anticipated. I am learning that there are few hard and fast ways to apply the concepts we learn.”

“Yes The law itself as a discipline is more subjective and less empirical than I could have imagined.”

“Yes, there is a great deal of ambiguity and lack of clarity.”

Id. These statements reinforce the counter-intuitive or alien nature of the malleability of law.

137. Webster & McDiarmid, *Contested Narrative*, *supra* note 133, at 9. See also Ross Meyer, *supra* note 2, at 1468.

138. Webster & McDiarmid, *Contested Narrative*, *supra* note 133, at 9 (noting that students “come to understand law as a normative institution shaped by actors within the law, after which it is impossible to view one’s role as an interpreter of law as the exercise of pre-determined, mechanical application of rules”).

139. Gerlese Akerlind, Jo McKenzie & Dr. Mandy Lupton, *Final Report: A Threshold Concepts*

in student understanding, the researchers noted, “students’ understanding of ‘the nature of legal rules’ was identified as a feature of overall understanding of legal reasoning.”¹⁴⁰ The researchers identified “the least sophisticated way of understanding legal reasoning as ‘a formulaic process for predicting a legal outcome,’ involve[ing] an understanding of legal rules as rigid, unchangeable and completely clear . . . in other words, the potential for variation in interpretation of legal rules has *not* been discerned.”¹⁴¹ However, once the malleability of law has been recognized, “a more sophisticated understanding of legal reasoning [emerges], as ‘an interpretive process of arguing for an outcome that serves your client,’ include awareness of legal rules as manipulable, interpretable and ambiguous.”¹⁴² These findings arguably support the position that malleability is a threshold concept for sophisticated and disciplinary-specific legal reasoning.

Professors who teach legal analysis seem to agree that malleability is likely a threshold concept. In an informal query of legal writing professors on the Legal Writing Institute¹⁴³ listserv, professors were asked to evaluate core and threshold concepts in a first-year legal analysis and writing course. Respondents were given a brief background on threshold concepts¹⁴⁴ and

Focus to Curricular Design: Supporting Student Learning through Application of Variation Theory 3 (2011), available at http://www.olt.gov.au/system/files/resources/PP8_885_Final_Report_Akerlind_2011.pdf [hereinafter Akerlind et al., Final Report].

140. *Id.* at 6.

141. *Id.* (emphasis in original).

142. *Id.* (stressing that, at this stage, “the potential for variation in that critical feature of legal reasoning has been discerned”).

143. The Legal Writing Institute (LWI) is a non-profit organization dedicated to improving legal writing by providing a forum for discussion and scholarship about legal writing, analysis, and research. See Legal Writing Institute :: LWI Online, available at <http://www.lwionline.org/index.html>

144. The query provided the following background material:

Researchers have proposed that threshold concepts (TCs) exist within disciplines, and that the identification of these TCs can assist educators in evaluating curricular outcomes and pedagogies to support student learning. TCs are considered central and essential to the mastery of a subject and have been generally defined to include four characteristics:

1. They are *transformative*—once grasped, they represent a conceptual shift in understanding.
2. They are (probably) *irreversible*—once understood, they are unlikely to be forgotten.
3. They are *troublesome*—they may appear counter-intuitive and are conceptually challenging for students.
4. They are *integrative*—mastery of a TC allows the learner to make connections and identify relationships that were previously unknown or unidentifiable.

TCs are distinguishable from core concepts in terms of the above characteristics. A core concept is better characterized as a building block, or a foundational concept that progresses the understanding of a subject. A core concept must be understood

then were asked to identify each of the following as either a core or threshold concept: identification and framing of legal issues; close case reading; contingency/malleability of statements of law; understanding *stare decisis*; understanding the difference between mandatory and persuasive precedent; identification of rule structures; inductive reasoning; deductive reasoning; analogical reasoning; rule-based reasoning; materiality of facts; understanding legal narrative; case synthesis; understanding of types of legal argument; understanding of hierarchy of authority; effective selection of legal authority; effective use of legal authority; adopting authoritative voice in legal writing; making predictions about application of law where appropriate; and critical analysis of law. Out of 79 responses, 54 identified malleability as a threshold concept.

Only case synthesis received a higher score. Out of 84 responses, 59 identified case synthesis as a threshold concept. Case synthesis is a complex skill associated with legal reasoning and requires an understanding of many legal principles. Joan Kent Gionfriddo describes the process as such: “Lawyers begin th[e] process of synthesis by first identifying the pieces of authority relevant to a legal issue and then fitting these pieces together to determine the overall analytical framework they reasonably support. This step requires understanding the nature and hierarchy of authority in our legal system.”¹⁴⁵ In addition to understanding hierarchy and *stare decisis*, lawyers must be able to identify the implicit and explicit rationale for each ruling,¹⁴⁶ and must be able to articulate legal principles from each case that can be tested back against the group of cases. “While an explanation does not need to have been articulated by any one court within the group, it must make logical sense in relationship to the facts and results of each individual case and its explicitly articulated doctrine and reasoning.”¹⁴⁷

in order to progress, but that understanding does not necessarily lead to a cognitive or qualitatively different understanding of a subject. In contrast, a TC represents a transformed way of understanding. Examples of TCs include *complex numbers* in mathematics, *opportunity cost* in economics, and *signification* in literary and cultural studies.

Identifying TCs can assist educators in designing a streamlined pedagogy focused on fundamental elements of a subject. To the extent TCs are troublesome, they also reveal the places in the curriculum where students struggle. Distinguishing between TCs and core concepts may further assist educators in identifying critical curricular pieces that, while perhaps not transformative, are essential building blocks to fundamental conceptual shifts.

E-mail from Melissa H. Weresh, Prof. of Law, Drake University Law School, to LRWPROF and DIRCON listservs, Threshold Concepts, July 10, 2012 (copy on file with author).

145. Jane Kent Gionfriddo, *Thinking Like a Lawyer: The Heuristics of Case Synthesis*, 40 *Tex. Tech L. Rev.* 1, 4 (2007) (citations omitted) (explaining a methodology for case synthesis) [hereinafter Gionfriddo, *Synthesis*].

146. *Id.* at 10–16.

147. *Id.* at 14–15 (citations omitted) (explaining that “lawyers must evaluate the significance of each case in relationship to all other cases in the group and then hypothesize possible explanations of the court’s implicit meaning. Depending on the particular group of cases,

Gionfriddo further explains that the process of case synthesis, and particularly the process of testing back explanations against the category of authority, may vary depending upon whether a lawyer is engaged in an objective analysis as opposed to when she is framing legal arguments.¹⁴⁸ There is a reasonable zone of interpretation of prior legal authority—a concept of malleability—that may differ in objective versus persuasive analysis. “In an objective analysis, the reasonable zone may include more than one explanation, but all of the explanations should be reasonably supported by the current body of case law, even if the lawyer has moved into inferential reasoning.”¹⁴⁹ However, “when lawyers craft arguments that push the parameters of the current case law, testing back explanations may take on a somewhat more expansive role that results in a broader reasonable zone of right explanations.”¹⁵⁰

Given this framework, malleability is likely a threshold concept for case synthesis. Examining the potential breadth of prior judicial decisions is part of the process of case synthesis.¹⁵¹ When synthesizing cases, “ideas are accurate because they fall within a *range of analysis*—even if creative or novel—that ‘reasonably’ interprets relevant, controlling legal authority, and ‘reasonably’ argues how that interpretation affects the client’s problem.”¹⁵² Understanding how broadly or narrowly a case may be construed—understanding the limits of its malleability—is therefore a threshold concept to synthesis. As Professor K.N. Llewellyn explains with respect to synthesis,

more than one explanation might reasonably be inferred from the cases”).

148. *Id.* at 16–18.

149. *Id.* at 16 (citations omitted) (noting that “these explanations should strictly test back on the cases in the sense of being consistent with each case’s relevant facts, results, and explicit reasoning”).

150. *Id.* Gionfriddo further explains that “[u]nder the doctrine of stare decisis, arguments in these circumstances need to generally consider the current body of precedent but do not necessarily need to test back on the cases in the same strict manner required in an objective analysis.” *Id.*

151. See, e.g., Michael D. Murray, Rule Synthesis and Explanatory Synthesis: A Socratic Dialogue Between IREAC and TREAT, 8 *Legal Comm. & Rhetoric: JALWD* 217, 234 (2011). Murray explains the process of explanatory synthesis:

Incremental principles of interpretation may be induced from different sets of precedents. Different, parallel storylines may be drawn out from several cases and depicted in such a way that the storylines converge with the client’s narrative. Public policies may be exhibited in a variety of factual settings to reveal that the client’s facts further the workings of the policies. Explanatory syntheses should explore the deeper, fundamental connections between cases whose outcome is favorable to the client and those that are not, so as to analogize to a whole group of favorable precedents and distinguish an entire group of unfavorable precedents.

Id.

152. Jane Kent Gionfriddo, The “Reasonable Zone of Right Answers”: Analytical Feedback on Student Writing, 40 *Gonz. L. Rev.* 427, 432 (2005) (noting that “[i]deas outside this ‘reasonable zone’ are incorrect”).

No case can have a meaning by itself! Standing alone it gives you no guidance. It can give you no guidance as to how far it carries, *as to how much of its language will hold water later*. What counts, what gives you leads, what gives you sureness, that is the background of the other cases in relation to which you must read the one. They color the language, the technical terms, used in the opinion. But above all they give you the wherewithal to find which of the facts are significant, and in what aspect they are significant, and *how far the rules laid down are to be trusted*.¹⁵³

Case synthesis also may be a threshold concept in legal education, and a threshold for sophisticated legal reasoning. It is likely bounded, insofar as it exists within the legal discipline, although it does replicate predictive reasoning in a non-legal environment. Case synthesis also may be integrative, as it requires students to pull together other, related core concepts such as formulating a rule of law, *stare decisis*, and inductive reasoning. Once mastered, it is likely irreversible. Case synthesis is challenging for first-year law students and may appear counter-intuitive or alien. It may, therefore, be troublesome. Finally, case synthesis, once mastered, may be transformative. However, I would argue that understanding malleability is a threshold concept for students to proceed to case synthesis. Moreover, an understanding of case synthesis is likely a threshold concept to understanding legal reasoning, or understanding how to think like a lawyer. In sum, malleability is likely a threshold for case synthesis, which is a threshold to more fully developed legal reasoning.¹⁵⁴

C. Implications of Identifying Malleability as a Threshold Concept

There are three potential implications of identifying malleability as a threshold concept in legal education. First, and most broadly, a consensus formed on this among faculty should provide a powerful lens for viewing student understanding across the curriculum. Second, once it or other discipline- or doctrine-specific threshold concepts are identified, these concepts can be made explicit to students in applicable courses. Finally, faculty can coordinate instruction on threshold concepts, including the use of consistent nomenclature and assessment techniques, and the development of appropriate benchmarks for student progress.

Threshold concepts research developed within a “teaching for understanding” conceptual framework underpinning the Enhancing Teaching and Learning project. “Threshold concepts have [] emerged as a set of transferable or portable ideas across disciplinary contexts, which offer new insights into teaching and learning.”¹⁵⁵ Teaching for understanding is “a

153. Gionfriddo, *Synthesis*, *supra* note 145, at n.13 (emphasis added) (citing K.N. Llewellyn, *The Bramble Bush: On Our Law and Its Study* 48 (Oceana Pub. Inc. 1996)).

154. I leave it to another legal educator to further explore this possibility.

155. Ray Land, Jan H. F. Meyer & Jan Smith, Editors’ Preface to *Threshold Concepts within the Disciplines* xi (Ray Land, Jan H. F. Meyer & Jan Smith, ed., Sense Pub. 2008) (noting that threshold concepts is “principally an analytical framework for trying to understand how students learn, where the barriers to their learning lie, be they epistemological or ontological,

way of developing a curriculum so as to focus directly on the development of understanding.”¹⁵⁶ Developing a curriculum for student understanding begins with the educator identifying “overarching goals for the course which guide the identification of generative topics. These goals are repeatedly presented to the students in the form of throughlines which help them to see how the topics and themes within the course hang together.”¹⁵⁷ Next, the educator develops “a set of generative topics” that are ‘issues, themes, concepts, ideas, and so on that provide enough depth, significance, connections, and variety of perspective to support students’ development of powerful understandings”¹⁵⁸ “From these generative topics follow the identification, first, of a series of understanding aims, and then of a range of tasks which will demand understanding performances.”¹⁵⁹ Teaching for understanding demands that students receive formative assessment so that both student and educator assess student understanding.¹⁶⁰ Finally, teaching and assessment processes should be aligned with intended learning outcomes.¹⁶¹

Just as identifying threshold concepts in other disciplines has informed their instruction, an identification of such concepts in legal education should help improve teaching of the law. It will help teachers understand where in the curriculum their students struggle. “The significance of the framework provided by threshold concepts lies in its explanatory potential to locate troublesome aspects of disciplinary knowledge within transitions across conceptual thresholds and hence to assist teachers in identifying appropriate ways of modifying or redesigning curricula to enable their students to negotiate such transitions more successfully.”¹⁶² This article intends primarily to introduce threshold-concepts theory to legal education, and to posit a potential threshold concept applicable across the law school curriculum.¹⁶³

and what appropriate pedagogical adjustments or modifications might overcome such difficulties”) [hereinafter Meyer et al. Preface].

156. Noel Entwistle, *Concepts and Conceptual Frameworks Underpinning the ETL Project*, Occasional Report 6 (ETL Project, Universities of Edinburgh, Coventry and Durham, 2003), available at <http://www.etl.tla.ed.ac.uk/docs/ETLreport3.pdf>.

157. *Id.*

158. *Id.* (citations omitted).

159. *Id.* (noting that “[t]hese performances focus on rather different aspects of the target understanding and so cumulatively help students to understand in ways accepted by the teacher”).

160. *Id.* (stressing that “the framework insists that assessment should be ongoing or formative, providing students with feedback about their work and also allowing both teacher and students to assess how well students’ understanding is developing”).

161. *Id.* (emphasizing that “that the main aims of any course should be oriented towards conceptual understanding and high level learning outcomes”).

162. Meyer et al., Preface, *supra* note 155, at xi.

163. My sense is that there may be two types of threshold concepts in legal education—discipline-specific concepts and doctrine-specific concepts. See Webb, *New Tool*, *supra* note 85, at 11. Webb questions whether “there is a network of legal threshold concepts

But there are apparent implications to identifying malleability as a threshold concept in the law school curriculum.

First, by simply incorporating this theory's concepts, a new lens is provided for evaluating how students learn. Legal educators may find that exploring these concepts is deeply informative, across the discipline and within doctrine specific areas. Threshold-concepts theory in other disciplines "has intrigued, confused and engaged many academics who would normally not consider thinking out loud about teaching."¹⁶⁴ We can't help but find weak spots, craft innovations in and improve our legal curriculum if we were to employ elements of this theory to evaluate where students struggle with it but where learning helps transform their thinking in a disciplinary-specific manner.

An evaluation of student learning and, particularly, a focus on where law students struggle, provides other ways to improve legal education. Judith Welch Wegner characterized the reform of legal education as a "wicked problem,"¹⁶⁵ and she examined the many dimensions in teaching students to

that are discipline-wide and fundamental to making sense of the discipline" that might be contrasted with subject-specific or, as I have termed them, doctrine-specific threshold concepts. *Id.* Malleability is a threshold concept that transcends the law school curriculum, as it is a concept that informs legal analysis broadly. Other universally applicable, discipline-specific threshold concepts might include precedent, materiality, and analogy. *See id.* at 11 (identifying materiality and analogy as "intuitive" threshold concepts in law). There are also likely doctrine-specific threshold concepts such as the corporation as entity, constitutional interpretive strategies, and allocation of risk. *See id.* at 11 (identifying allocation of risk as a potential threshold concept). As noted, the primary goal of this article is to spark a discussion within the legal academy about what threshold concepts exist in legal education and, if malleability is one, how an acknowledgement of that concept as a threshold concept might improve instruction for student understanding.

164. Baillie et al., Knowledge Capability, *supra* note 22, at 244.

165. *See* Judith Welch Wegner, Reframing Legal Education's "Wicked Problems," 61 Rutgers L. Rev. 867 (2009). Wegner explains the term "wicked problem" was "coined by Horst Rittel and Melvin Webber to describe a class of problems that cannot readily be resolved by conventional analytical means, particularly in the realms of public policy or design." *Id.* at 870 (citations omitted).

A "wicked problem" is one that cannot be definitively described or understood (since it is differently seen by differing stake-holders, has numerous causes, and is often a symptom of other problems). "Wicked problems" cannot readily be resolved (since they are characterized by a "no stopping rule" resulting from cascading consequences that are difficult to discern at the outset), and can only be addressed in 'better or worse' ways, rather than by proving solutions are "true" or "false." "Wicked problems" occur when the factors affecting possible resolution are difficult to recognize, contradictory, and changing; the problem is embedded in a complex system with many unclear interdependencies, and possible solutions cannot readily be selected from competing alternatives.

Id. at 870-71 (citations omitted). Wegner identifies legal education reform as a wicked problem, explaining that

There is no generally accepted definition of the problems faced (although the recent Carnegie Report and Best Practices study have suggested some dimensions). There's no "stopping rule" for reform since there are so many interrelated questions that one

“think like a lawyer.”¹⁶⁶ She observed that “a deep and fundamental shift occurs in the nature of knowledge and knowing in conjunction with the development of advanced reasoning routines, a shift that is recognized only in retrospect and rarely clearly stated or understood.”¹⁶⁷ Because threshold concepts are

can never be “done,” only exhausted for the moment. Solutions tend to be better or worse, rather than “true or false,” despite the tendency of many to wish for confirming evidence before acting. Every “one-shot” reform affects other dynamics within an ever-changing educational institution. There is not a set of standard solutions that takes into account the unique characteristics of individual schools (such as student characteristics, faculty preferences, location, institutional culture, available resources), even though faculty members typically want to know what others have done in order to borrow models from schools viewed as peers.

Id. at 876.

166. *Id.* at 894. The relationship between legal reasoning, and understanding the uncertainty or malleability of law, was identified as part of the skill of thinking like a lawyer. “A faculty member at a Canadian school explained that ‘thinking like a lawyer’ required development of analytical skills not previously understood by undergraduates: ‘Our goal is for them to think critically about what they’re doing. Don’t just take the law as the law . . . It will make them more versatile . . . [Get] them to question assumptions.’” *Id.* at 900. Students similarly pointed to the uncertainty of law as troublesome in terms of legal reasoning. “Some emphasized the inherent uncertainty of knowledge associated with the law. Said a scientist: ‘the material [in law] is not that hard, but science is black and white and law is gray . . . I’d been used to thinking there was one answer and making sure to put that down on paper.’ Others spoke of the way in which what counts as knowledge is constructed. A doctor explained that medicine and law are very different: ‘There are right answers in science. With law it’s a matter of making a case.’” *Id.* at 901.

These observations about understanding uncertainty of legal principles—or malleability—track the threshold concepts theory. As Wegner explains:

These subtle distinctions in the nature of knowledge and the ways in which knowledge is constructed seem illusive and in some respects hard to comprehend. Yet numerous students described the process of learning to “think like a lawyer” in terms that suggested they’d experienced a significant and illusive “phase shift” in the nature of their thinking. This realization that something had “clicked” is difficult to communicate and is often appreciated only in retrospect . . .

Students’ growing appreciation for the complex nature of knowledge (it is not absolute, is associated with evidence or argument, and depends on more than one’s personal view) parallels the findings of leading theorists who have studied intellectual development among college students and traced evolving relationships with certainty and doubt.

Id. at 901-02.

167. *Id.* at 903 (noting that “[k]nowledge is no longer simply received from experts, but must be constructed, since law is by its nature ‘gray’”). This retrospective awareness of an epistemological shift is consistent with other aspects of threshold concepts theory, including transformation, troublesome knowledge, and integration. “The developmental trend that is thus apparent is consistent with research in other contexts that suggests that such epistemological phase shifts may be closely related to development of capacities for abstract forms of reasoning, dissatisfaction with existing beliefs, and identification of intelligible and useful alternatives that can be linked to earlier conceptions, motivation and context.” *Id.*

embedded in faculty ways of thinking and practicing,¹⁶⁸ “[d]evelopmental struggles are therefore generally invisible and poorly articulated at best.” If faculty work together to make apparent and explicit the threshold concepts that students must master to become members of a discourse community, they may be in a better position to create teaching objectives and exercises to help students with them.¹⁶⁹

Similar collaborative efforts by educators could be a boon to students in mastering discipline-specific threshold concepts in legal education. This may mean different things in different courses. But I suggest two concrete ways in which the identification of malleability as a threshold concept might improve first-year curricular development. Educators could collaborate to 1) make it an explicit threshold concept across the first-year curricular development and 2) coordinate instructional materials and assessment techniques to broadly reinforce its understanding by all students.

Malleability, as defined here, is an understanding of the latitude or flexibility a lawyer has in articulating legal principles. Students would be well-served if they got started as early on as possible to grapple with it.¹⁷⁰ As one scholar has recognized, “Threshold concepts can be best understood as tacit constructs that often sit behind the explicit domain knowledge, and may therefore operate as unrecognized, or at least unacknowledged, assumptions in the tutor’s teaching.”¹⁷¹ To ensure students master this threshold concept, it must be made apparent, or explicit.¹⁷²

168. See *id.* (“Few faculty or students are conscious of their epistemological beliefs, let alone of ways in which they may change.”).

169. See *id.* (“Recognizing and explaining that students must confront uncertainty on this deeper and less obvious level may prove an important step in helping them more readily come to terms with the insistent questioning and sophisticated routines of reasoning associated with studying law.”).

170. See David Perkins, *Beyond Understanding*, in *Threshold Concepts within the Disciplines*, 3 (Ray Land, Jan H. F. Meyer & Jan Smith, eds., Sense Pub. 2008). Perkins explains:

The idea of threshold concepts carries an important pedagogical message: where we can find likely threshold concepts, we would do well to organize learning around them. But there is a cost, in fact an opportunity cost but one generally worth paying. Threshold concepts are likely to be troublesome. Their reorganizing power brings with it an unfamiliarity that sometimes proves acute and off-putting. You can’t rebalance the boat without rocking it.

Id. at 13 (citations omitted).

171. Webb, *New Tool*, *supra* note 86, at 10.

172. “[C]ognitive psychology suggests that metacognition, where students are aware of what they are trying to accomplish, enables students to learn more effectively because their focus is directed at the learning objective. Accordingly, educational practices have developed that encourage teachers to ‘make learning goals explicit’ and coach students toward these goals so that they can focus their efforts as learners.” Lori A. Roberts, *Assessing Ourselves: Confirming Assumptions and Improving Student Learning by Efficiently and Fearlessly Assessing Student Learning Outcomes*, 3 *Drexel L. Rev.* 457, 466–67 (2011).

This premise has been demonstrated in a study by researchers at UC Santa Barbara who, in a broader consideration of the goals and efficacy of general education instruction,¹⁷³ evaluated whether there were threshold concepts that spanned across first-year writing courses and a history survey course.¹⁷⁴ The researchers identified “ideas about interrelationships between audiences, purposes, contexts, and genres”¹⁷⁵ as threshold concepts common to both composition and history courses and said that these “accrue *across* learning contexts, such as those in History 17b and Writing 2, need to be reinforced even more strongly in multiple classroom settings by students *and* instructors.” The study concluded that

When these areas of shared concepts can be identified, it might then be possible for instructors to explicitly articulate the concepts for themselves . . . and work them explicitly into their teaching, perhaps in courses linked like History 17b and Writing 2, or perhaps in other instructional configurations. Then, working together, instructors can help students to explicitly, consciously enact these shared threshold concepts, facilitating more effective transfer across both.¹⁷⁶

173. See Linda Adler-Kassner, John Majewski & Damian Koshnick, *The Value of Troublesome Knowledge: Transfer and Threshold Concepts in Writing and History*, 26 *Composition Forum* (Fall 2012), available at <http://files.eric.ed.gov/fulltext/EJ985816.pdf>. The study was intended

to contribute to two, heated conversations that currently seem to operate parallel to one another. One concerns the purpose of first-year writing courses, especially the ways that they facilitate students’ abilities to transfer something—knowledge, strategies, habits of mind—to other courses and contexts beyond the academy [and] . . . [t]he second conversation . . . concerns the purpose and nature of general education (GE) in the modern-day academy and focuses on what GE does and how it does those things.

Id. at 1.

174. See *id.* The researchers concluded that “threshold concepts may provide a productive frame for faculty to productively engage with questions about the purposes of GE and to consider how to support students as they work to achieve these purposes.” *Id.*
175. *Id.* at 3. The authors note, “[t]he troublesome knowledge inherent in these concepts means that students need to engage in frequent practice with them across courses, rather than focusing on them in discrete instances.” *Id.* at 13.
176. *Id.* at 15. The study’s conclusion should be viewed against the background of the initial questions posed regarding the purpose of general education instruction. The study noted that “[d]efining what a general education should do requires an enormous effort to build consensus among faculty from across an institution.” *Id.* However, it is interesting to parallel the study with this article’s emphasis on a discipline-specific threshold concept—in part because there may be doctrine-specific threshold concepts where legal educators diverge in terms of content-specific threshold concepts. To the extent that legal educators therefore have additional layers of threshold complexity to consider, the study’s recognition of the following is instructive:

Faculty necessarily and by definition work within the professional standards of *their* disciplines, having worked long and hard to master their field’s threshold concepts, enact those concepts, and sometimes contribute to the development and dissemination of new concepts extending to new knowledge.

Thus, assuming that there are discipline-specific threshold concepts that span the first-year curriculum, including perhaps, malleability, some collaboration between faculty in terms of explicit acknowledgment and coordinated instruction should facilitate the “effective transfer” of these concepts.

Similarly, in evaluating whether threshold concepts exist in legal education, Julien Webb acknowledged the need for their explicit acknowledgement in curricular planning,¹⁷⁷ and noted the following benefits of such explicit instruction:

The explicit use of threshold concepts may thus help us achieve three things. First, it may provide a counter-balance to the tendency to overload the curriculum with substantive legal rules. This has often served to restrict students’ learning to a ritualized use of formal knowledge, at the expense of a deeper, more personalized, understanding of the law. Secondly, it may also help us provide students with greater opportunities to acquire independence in using legal concepts, since abstract knowledge is more likely to become personalized and transformative through use. Thirdly, it follows that a focus on threshold concepts also holds out perhaps greater potential for moving students beyond their established ways of thinking and problem-solving.¹⁷⁸

Finally, Wegner’s analysis of legal education reform supports the notion that malleability as a threshold concept might be better introduced to students as an explicit component of learning. She questions “should law students be taught explicitly about the need to make their thinking processes more visible and should more explicit attention be given to enhancing their capabilities as thinkers through monitoring, diagnosing, and assessing what they know? Might they prove to be more effective learners as a result?”¹⁷⁹

It is within *this* broader context, then, that we think the idea of focusing on threshold concepts within and across general education courses holds particular potential as a new perspective on considering the purposes and practices of general education courses. Working from this perspective enables us to consider, as we have done here, whether there are concepts that exist within specific disciplines, like composition and history, that then can also span *across* disciplines. This perspective positions these concepts not as all-purpose habits that exist within liberal learning, as in the distribution model, but as discipline-specific concepts that operate within some number (two, in our case) different contexts.

Id. (emphasis in original) Considering the above, it may be possible that there are doctrine-specific threshold concepts that operate across doctrinal areas but that are not as broadly applicable as a discipline-specific threshold concept. I invite others to explore this possibility.

177. Webb, *New Tool*, *supra* note 86, at 10. Webb states, “Critically, however, if Meyer and Land are correct, it is these threshold concepts that are the core drivers for the core concepts and discourses within a discipline, and things that must be made explicit to students if they are to think effectively in the ways of that discipline.”

178. *Id.*

179. Wegner, *supra* note 165, at 939. While Wegner’s notion of thinking like a lawyer covers a variety of skills, the issue of uncertainty about the law, or malleability of legal principles, is part of her characterization of this discipline-specific reasoning process. She further queries “If ‘thinking like a lawyer’ indeed serves as a metaphor for guiding students through areas

Consider for example legal analysis and communication courses, in which malleability is introduced and explored explicitly.¹⁸⁰ Students are introduced to the concept and helped to master it with opportunities to craft statements of law more broadly or narrowly depending upon the objective of the assignment¹⁸¹ and the interests of the client. Malleability may be examined more implicitly in doctrinal courses, as students explore how the law develops over time. In a Socratic exchange in a first-year doctrinal course, students typically understand the process of posing hypotheticals as a constant modification of the underlying facts and an emphasis on predicting the “right” result given a static rule.¹⁸² This corresponds with Christopher Columbus Langdell’s objective in introducing Socratic dialogue to the law school classroom.¹⁸³ He included this in an introduction to his contracts casebook:

Law, considered as a science, consists of certain principles or doctrines. To have such a mastery of these as to be able to apply them with constant facility and certainty to the ever-tangled skein of human affairs, is what constitutes a true lawyer; and hence to acquire that mastery should be the business of every earnest student of law.¹⁸⁴

of uncertainty as they begin to move forward on a professional path, are there other areas of uncertainty that need to be identified and more directly addressed to fuel the learning process and develop better lawyers as a result? If so, should these matters be addressed during law school’s first year or at a later point?” *Id.* at 939-40.

180. *See, e.g.*, Robin Wellford Slocum, *Legal Reasoning, Writing, and Other Lawyering Skills* 130-34 (Matthew Bender & Co., Inc., 3d. ed. 2011) (noting that “[t]he ambiguous nature of courts’ holdings will provide [the student] with a fair degree of latitude to express holdings broadly or narrowly, depending on which rule statements most effectively support your clients’ interests”).
181. Most first-year courses address predictive analysis first, and then proceed to persuasive analysis. As noted in section II(B) *supra*, the analytical process, including the formulation of rules and synthesis of prior authority, may differ depending upon the objective of the analysis.
182. *See, e.g.*, Stephen Wizner, *The Law School Clinic: Legal Education in the Interests of Justice*, 70 *Fordham L. Rev.* 1929, 1931 (2002) (“The Socratic [M]ethod also included a critical analysis of the arguments and conclusions contained in the case reports, often through hypothetical variations of the facts in the cases.”).
183. *See* Peggy Cooper Davis & Elizabeth Ehrenfest Steinglass, *A Dialogue About Socratic Teaching*, 23 *N.Y.U. Rev. L. & Soc. Change* 249, 261-64 (1997). The authors note, “Like Socrates, Langdell used questions to provoke critical thinking. But unlike Socrates, Langdell seemed to believe that he knew, and his students could be expected to discover, the truth of the matters being considered.” *Id.* at 262 (citations omitted).
184. *Id.* (citing Christopher C. Langdell, *A Selection of Cases on the Law of Contracts* viii (2d ed. 1879)). The authors note that “[f]rom his theories of law and legal education, we infer that when Langdell posed questions about cases, he expected students’ answers to reference the ‘correct’ underlying doctrine.” *Id.* *See also* Adam Neufeld, *Costs of an Outdated Pedagogy? Study on Gender at Harvard Law School*, 13 *Am. U. J. Gender Soc. Pol’y & L.* 511, 520 (2005) (noting that “legal realists and others have argued that the standard pedagogy exaggerates the determinacy of law”).

To be fair, this unlikely is the approach taken in most Socratic classrooms, and instructors probably do explore the limits of the rule, or the malleability of the law, in their questioning.¹⁸⁵ In fact, in a contemporary Socratic classroom, the following may occur:

The professor may want to focus on how the facts and context of [a client's] situation test the contours and legitimacy of the rule. If she does this, she is likely to want the discussion to reveal relationships between the identified function of a rule and its interpretation; she is also likely to want to discuss ways in which case facts suggest a rule's functions and test its efficacy. Of course, she may also want to have a broader discussion of the functions, wisdom and efficacy of the rule, in which case the discussion will turn to policy analysis.¹⁸⁶

Such an "approach to case analysis acknowledges indeterminacy,"¹⁸⁷ or malleability. However, it is unclear that the concept is made explicit to students in the Socratic exchange, and, perhaps more importantly, it is unclear that students who are not actively engaged in the Socratic dialogue understand malleability as a critical component of legal reasoning.¹⁸⁸

If malleability is indeed a threshold concept, students might be better served if the concept was acknowledged explicitly in all first year courses, including those in which it is likely to be an implicit concept. So, for example, in doctrinal courses, instructors could reinforce during the Socratic dialogue that the law can be stated at differing levels of abstraction to modify the analysis.¹⁸⁹ Student understanding might be further facilitated not only by

185. Davis & Steinglass, *supra*, note 183, at 268.

186. *Id.*

187. *Id.*

188. "By the end of her dialogue, [the Professor] has used a variety of techniques with the potential to engage many students at many levels. But inevitably, many of [the Professor's] students have not participated in the dialogue; some, overwhelmed by the relief that they were not the one called on, have not even listened attentively." *Id.* at 275. Michael Hunter Schwartz describes the failing of the Socratic Method in terms of feedback coverage across the classroom:

Law schools fall far short of the goal of providing adequate practice and feedback. Practice opportunities implicitly exist every time a professor calls on any student; the other students can attempt to answer the professor's questions in their minds. Professors do not require students to do so. Moreover, only the selected student actually receives feedback, and the feedback often indicates only that the student has erred without helping the student discern the nature of the error or how to correct it. Students, as noted at the outset of this Article, are expected to learn from that feedback vicariously. Of course, even assuming the watching students are playing along, they may have committed different errors than the selected students.

Michael Hunter Schwartz, *Teaching Law by Design: How Learning Theory and Instructional Design Can Inform and Reform Law Teaching*, 38 *San Diego L. Rev.* 347, 416-17 (2001).

189. *See, e.g.,* Wegner, *supra* note 165, at 939 (2009). Wegner explains that law faculty members

making the concept explicit, but also by first year instructors' consistent and deliberate focus on the concept. Such consistency across the first year of instruction should begin with nomenclature¹⁹⁰ and, ideally, also implicate consistently sequenced instruction and assessment.¹⁹¹

For example, if instructors were to collaborate and jointly acknowledge malleability as a threshold concept within their teaching for first-years, faculty might identify additional core concepts, or learning activities to better help students master these. Malleability also could be viewed as a portal to understanding case synthesis, which could serve as a portal to understanding how to process information in a disciplinary-specific manner, or how to think like a lawyer. In this way, malleability would become a threshold concept across the curriculum and curricular sequencing and formative assessments could be crafted by faculty to help students advance through these portals.

As noted, assessments might vary somewhat from course to course to take into account course-specific goals, such as the communication of underlying doctrine. However, a collaborative effort to use similar nomenclature and assessments to reinforce what other courses address likely would benefit student understanding. In addition to assessment, instructors could

may not “fully appreciate the importance of legal writing courses in bolstering students’ analytical strengths, providing them with an important context in which to learn from experience, engaging them in solving poorly defined problems, [and] exposing them to the art forms and acts required of lawyers in practice” Because “legal education has not really embraced the need for students to learn to ‘do and act’ or appreciated the ways in which ‘doing and acting’ are powerful means to fuel learning of substance itself,” instructors may not recognize how an explicit acknowledgement of malleability as a threshold concept in a first year doctrinal course improves student understanding.

190. *See id.* at 936. Wegner emphasizes that “[t]hinking like a lawyer’ involves an array of sophisticated intellectual tasks that are generally not named or described explicitly, but which correspond to widely-recognized cognitive tasks associated with higher-order thinking often familiar to those students with strong earlier academic preparation and less well-known to others with more non-traditional backgrounds.” *Id.* However, “Law schools have historically been weak in articulating their institutional goals, recognizing and confronting comprehensive educational challenges facing their students, and committing to ongoing assessment of the effectiveness of their instructional programs.” *Id.* at 941. She questions whether “naming and addressing these issues [would] make a difference in student performance?” *Id.* at 936.

191. *See id.* at 938. Wegner observes that “Bloom’s taxonomy, as embodied in the ‘case-dialogue method’ of teaching, assumes a type of progression from less to more complex educational objectives, with each level building on the one that precedes it and moving toward another requiring greater sophistication of thought.” She then poses some related questions:

Might law faculty give further consideration to structuring some aspects of instruction with this notion of progression in mind? . . . Do students’ cognitive abilities develop in stages, as is the case with craft apprentices’ skills? If so, how might law teachers cement a sense of mastery step by step, build effectively on prior learning and develop increasing sophistication over time through movement toward more diverse and complex problems? Would more attention to sequencing educational tasks prove useful, and what would it entail?

Id. A focus on threshold concepts theory might inform the answers to these questions.

collaborate to identify appropriate levels of competence or benchmarks for student understanding of this concept.¹⁹² These benchmarks would set a foundational level for understanding this aspect of legal reasoning that could then be enhanced (and acknowledged) in upper-level instruction.¹⁹³

In addition, as a teaching tool for understanding technique, identifying threshold concepts helps educators select and organize material. Focusing content on these concepts helps educators avoid the “stuffed curriculum,”¹⁹⁴ and streamline content to enhance learning toward the core educational goals of the course of instruction.¹⁹⁵ A high volume of content in a course may “be more about what the teacher wants to include, rather than what the student needs to know to become a successful graduate.”¹⁹⁶ In contrast, students must, by definition, master threshold concepts to join the disciplinary community. The identification of a discipline-specific threshold concept such as malleability,

192. See generally Victoria L. VanZandt, *Creating Assessment Plans for Introductory Legal Research and Writing Courses*, 16 *Legal Writing: J. Legal Writing Inst.* 313 (2010). VanZandt explains the process of assessment of student learning in legal education, emphasizing that student learning outcomes should be developed by consensus. “Collaboration is used here in the broadest sense, meaning discussion, dialogue, and consultation with various individuals, institutions, and materials to aid in the creation of learning outcomes. The query is simple: ‘what [do] new lawyers need to know, understand, and be able to do when they begin practice?’” *Id.* at 325. Assuming that faculty can agree that students need to understand malleability in order to think and practice as a lawyer, assessment planning suggests that faculty should then adopt performance criteria, or benchmarks of competence, to assess student learning. See *id.* at 332–33. Doing so across the curriculum, as suggested here, should enhance student learning. Focusing on learning outcomes in a legal research and writing course, VanZandt explains how the development of criteria for student performance in that course informs instruction in other courses. “The use of performance criteria will inform other faculty of what skills have been introduced and what level of competency is to be obtained in those skills in an introductory LRW course.” *Id.* at 332.
193. See, e.g., Wegner, *supra* note 165, at 939. The author observes that “[i]nstruction in the forms of legal reasoning associated with ‘thinking like a lawyer’ is largely unbounded, that is, there is no real sense that a particular discernible level of mastery is to be developed by the end of the first year. Could meaningful benchmarks be set for determining when sufficient time has been spent on this endeavor and students have achieved an acceptable level of basic mastery, so that additional educational goals might be embraced more explicitly beyond the first year?” *Id.*
194. See, e.g., Cousin, Introduction, *supra* note 4, at 4. Educators have a “tendency . . . to stuff their curriculum with content, burdening themselves with the task of transmitting vast amounts of knowledge bulk and their students of absorbing and reproducing this bulk.” *Id.* An identification of “threshold concepts enables teachers to make refined decisions about what is fundamental to a grasp of the subject they are teaching. It is a ‘less is more’ approach to curriculum design.” *Id.*
195. See Webb, *New Tool*, *supra* note 86, at 10 (stressing that the explicit use of threshold concepts “provide[s] a counter-balance to the tendency to overload the curriculum with substantive legal rules”).
196. See Barradell, *supra* note 7, at 268. Barradell cautions that “[a] high volume of content has the potential to encourage students to adopt a superficial approach to learning,” but that “[t]hreshold concepts offer a way to streamline what is taught in a way that is valuable to both teachers and learners.” *Id.*

which is ideally explored in the first year, might assist educators in tightly focusing on which materials best help students.

Instructors also could work together to develop exercises to apply and to reinforce both underlying legal doctrine and the concept of malleability. In legal writing, for example, students often must perform synthesis exercises, reading a series of cases to develop an overarching rule that can be mapped back across them. A component of this exercise is its explicit acknowledgment of how broadly or narrowly a rule reasonably may be construed to comport with prior cases. Similar exercises could be developed for other doctrinal courses. This type of exercise also ensures that student understanding is broadly assessed. But it is the identification of the threshold concept and the collaborative effort by the faculty to identify the places in the curriculum where students struggle that should help to inform more consistent pedagogy across the first-year of study.

In sum, because threshold concepts point out spots in the curriculum where students struggle, they can help educators assess their methods and core-concept instruction to help students.¹⁹⁷ Identification of threshold concepts may reveal why some students do not even see the portal, why some remain on the doorstep, and why some get caught in a liminal state. Threshold concepts also may be mapped across the curriculum,¹⁹⁸ and educators can determine where to position not only the next logical portal but also how to position core-concept instruction to lead the way. Finally, threshold concepts have been characterized as “jewels in the curriculum.”¹⁹⁹ As such, they “can be used to define potentially powerful transformative points in the student’s learning experience.”²⁰⁰

197. See Land et al., Implications, *supra* note 6, at 62–63. The authors explain that

[t]he task for course developers and designers here is to identify, through constructive (and constructivist) feedback, the source of these epistemological barriers, and subsequently to free up the blocked spaces by, for example, redesigning activities and sequences, through scaffolding, through provision of support materials and technologies or new conceptual tools, through mentoring or peer collaboration, to provide the necessary shift in perspective that might permit further personal development.

Id.

198. See Barradell, *supra* note 7, at 268. Barradell explains that mapping curricular content includes “identifying *transformative* and *troublesome* aspects of curricula, recognizing the importance of *integrating* concepts vertically and horizontally and within prior knowledge constructs, considering what concepts need to precede and *integrate* others, and being aware of unique disciplinary ways of thinking and practising that will shape the curriculum.” *Id.* (emphasis in original).

199. Land et al., Implications, *supra* note 6, at 57.

200. *Id.* The authors explain that threshold concepts “can serve to identify crucial points in the framework of engagement that teachers may wish to construct [and they] . . . may also serve a helpful diagnostic purpose.” *Id.*

III. Conclusion

Identifying threshold concepts is not easy²⁰¹ and there may be disagreement about what these transformative jewels in the curriculum truly are. Moreover, the identification of threshold concepts may be more straightforward in some disciplines as opposed to others.²⁰²

In addition to the difficulty of identifying threshold concepts, this is a relatively new and developing area of inquiry. So the question arises: Does threshold concepts theory explain “empirical observations, or is it a concept incorporating and representing several abstract ideas?”²⁰³ Moreover, because much of the work on them has not been tested empirically, “[t]hreshold concepts carry not only theoretical complexity but also methodological challenges.”²⁰⁴

Still, “the intent behind threshold concepts is to improve the learning experience of students. Inextricably linked to this is the teaching of students. . . . Remembering why we want to identify threshold concepts in the first place ultimately helps the process.”²⁰⁵ And, just as important, “[t]heories are just ideas after all. But if an idea is a threshold concept, it can give us the possibility of a future. If it becomes a capability, that future becomes more reachable.”²⁰⁶ The threshold concepts inquiry is therefore engaging for educators, and holds

201. See Barradell, *supra* note 7, at 269 (noting that “[i]dentifying threshold concepts is not an easy task. Atherton et al. (2008) even go so far as to say ‘that the idea of a threshold concept is in itself a threshold concept’”).

202. See Meyer & Land, *Linkages*, *supra* note 8, at 12. The authors observe that:

Threshold concepts would seem to be more readily identified within disciplinary contexts where there is a relatively greater degree of consensus on what constitutes a body of knowledge (for example, Mathematics, Physics, Medicine). However within areas where there is not such a clearly identified body of knowledge it might still be the case that what the ETL project team have come to encapsulate in the term ways of thinking and practising also constitutes a crucial threshold function in leading to a transformed understanding.

Id. (citations omitted).

203. Walker, *supra* note 13, at 250.

204. Barradell, *supra* note 7, at 274. See also Ursula Lucas & Rosina Mladenovic, Potential of Threshold Concepts as a Research Field, 5 *London Review of Education*, No. 3, 237 (2007). In the article, the authors assert:

This raises a central question that is frequently asked about threshold concepts: to what extent does it comprise a field that will develop its own theoretical framework? It may be, however, that rather than representing a field in its own right, it may act as a catalyst, drawing together fields of research in a productive educative framework.

Id. at 245.

205. Barradell, *supra* note 7, at 269 (observing that “[t]his should be remembered during any conversation on threshold concepts, and the starting point should be the identification of these concepts—for if we cannot appropriately identify them, their subsequent use is limited in value”).

206. Baillie et al., *Knowledge Capability*, *supra* note 22, at 244.

great promise for student learning. “It has helped to redesign curricula with critical, transformational yet troublesome subject content in mind.”²⁰⁷

Therefore, considering threshold concepts within legal education—as a theory or as an idea—has potential benefits so we teachers may understand why and where students struggle. The process may also inform pedagogy and curricular development to further student understanding.

207. *Id.* (noting that the “Threshold Concept Framework is a powerful one that has literally swept the world, across many different disciplines”).