International Journal of Teaching and Learning in Higher Education 2019, Volume 31, Number 1, 139-146
http://www.isetl.org/ijtlhe/ ISSN 1812-9129

The Continuous Case Study: Designing a Unique Assessment of Student Learning

Matthew W. Grimes
Radford University

The case study approach is one form of problem-based learning (PBL) that results in deeper understanding of content, and it involves pushing students to think beyond the answers appropriate for class (Hmelo-Silver, 2004; Nilson, 2010, 2013). Case studies prompt students to consider the realistic implications of how they use course content in realistic scenarios that are relevant to their future practice. According to Nilson (2010), continuous case studies are one form of case-based learning that often leads to a uniquely deeper learning experience for students. This paper describes the design of a continuous case study assignment for use in the classroom—as an interactive lecture or independent assignment—and as a data collection tool. Continuous case studies are useful at both the undergraduate and graduate levels and are highly adaptable across disciplines. The focuses of this paper are a) to define and describe the continuous case study, including the evidence-driven design process, and b) to offer practical examples of how to implement the design for classroom or scholarly use.

It is not uncommon to find faculty and students who are frustrated with the lack of variety in their courses. Ambrose, Bridges, DiPietro, Lovett, and Norman (2010) advised college instructors to put time, effort, and imagination into their courses—such as developing course activities based in real-world application—to provide a more engaging learning environment. Nilson (2010) suggested that case studies provide students with a different form of coursework that often holds their attention more effectively due to its realism, relevance, and (when done well) direct connection to course objectives. When students have the opportunity to learn through case-based instructional strategies, they not only perform at a high level, but also enjoy course content (Albanese & Mitchell, 1993).

There are a number of multidisciplinary examples of how case-based instructional strategies can prove effective in helping students develop valuable skillsets. In teacher education, Koehler (2002) explicated the value of using a narrative approach to provide rich descriptions of teaching and learning in classrooms that led to enhanced applications of learned content. Chaplin (2009) showed that using case studies to assess student learning in an undergraduate biology course (vs. traditional, lecture-based methods) resulted in higher critical thinking skills and increases in academic performance. In leadership studies, Atkinson (2014) found that using case studies as teaching tools resulted in Ph.D. students' increased creativity. Raju and Sankar (1999) explained how case studies in engineering courses help connect student learning to real-world scenarios, resulting in their further development of essential skills like problem solving and critical thinking. In an intriguing and unique instance, Egleston (2013) developed an "interactive, progressive case study" that helps instructors avoid repeated (and at times plagiarized) case responses, as well as leads students toward more comprehensive learning experience.

While existing literature is clear that instructional strategies employing realistic scenarios and real-world learning opportunities lead to positive outcomes in student learning, why are there so few evidence-based procedures for designing such activities? Most examples in existing literature are to establish how using a standard case study design in instruction is an effective departure from traditional instructional methods. So, maybe a better question is: Where is the variety within case-based instructional strategies intended to engage students in important, evidence-based learning?

It is safe to assert that case-based learning is effective, but is there a way to effectively design a more progressive format for the standard case-based assignment? Nilson (2010) explained the continuous case as presenting "an unfolding story in segments over real or condensed time" (p. 183). A continuous case study is intentionally segmented to gradually reveal a story that maintains the essential components necessary in case study design.

The purpose of this paper is to describe the process of designing a progressive version of the standard case study: that is, the continuous case study. Continuous case studies are effective as assignments, in-class activities, or as data collection tools to assess student learning. This paper begins with an evidence-based account of relevant scholarship that supports the case study as an effective instructional approach. Next, the paper presents a walkthrough of the continuous case study design process. This paper concludes with some practical examples of how this design adds wonderful and welcomed variety to the classroom that deeply engages students in learning course content.

The Scholarly Roots of Case-based Design

In designing a curriculum, instructors have a responsibility to ensure that the methods used are both relevant and effective in guiding students toward

specific learning outcomes, which often include application of course content (Nilson, 2010). Curricular alignment includes developing activities that effectively connect learning outcomes with assessment of those outcomes (Gareis & Grant, 2015). One such instructional activity involves using problem-based learning as a mechanism to encourage real world, applicable learning. Included in the broader family of problem-based learning instructional strategies are case studies, which engage students using realistic scenarios that require experiential problem solving and decision making, as well as critical thinking skills (Hmelo-Silver, 2004). Before detailing continuous case design, it is important to explore its roots in problem-based learning scholarship.

Problem-based learning. Problem-based learning (PBL) was introduced in the mid-20th century as a learning method used in medical education to enhance reasoning and problem solving (Barrows & Tamblyn, 1980). PBL has expanded across disciplines and in a tremendous variety, in most instances centered on fostering deeper learning, as well as problem-solving and reasoning skills (Barrows, 1996; Kim & Kee, 2013). PBL has also shown to reduce the time learners spend attempting to focus on the inundation of information and instead points them toward what is relevant to creating a solution (Nilson, 2013).

PBL involves meaningful, experiential, and reflective learning practices (Hmelo-Silver, 2004). By situating learning in realistic problem-solving scenarios, PBL encourages learners to be active in the learning process and to take responsibility for their own learning. Barrows and Tamblyn (1980) developed a student-led PBL process that included two critical elements: a richly designed problem for learners to consider and a student-centered problem solving procedure.

Hmelo-Silver (2004) has since added to the scholarship on PBL with two equally critical elements: an active and collaborative construction of knowledge and students taking responsibility for their own learning. It is important for students to experience self-generated inquiry as this level of responsibility contributes to a learning environment that is both experiential and learner-centered. Learning through case studies produces students who better understand the process of problem-solving in a given context. In fact, understanding the problem-solving process might be a more important learning outcome than is achieving the perfect solution to a given problem (Nilson, 2013).

Case studies. Case studies are one type of PBL that focuses on presenting students with difficult decision-making and problem-solving dilemmas that course content can help clarify how course content may translate into the real world (Stanford Center for Teaching and Learning, 1994). There are many benefits of using case studies to reinforce course content. Case studies can help add variety to the typical course content delivery in a course (Foran, 2001). A simple change of pace can help students re-focus—or focus more deeply—on paying attention and retaining course knowledge. Case studies also offer active learning, a key component to instructional innovations in any classroom format (Herreid & Schiller, 2013). Cases can be designed as individual or group activities, which makes them highly adaptable to whatever course or course setting (e.g., in-person, online, or a hybrid), and highly customizable to nearly any discipline (Nilson, 2013).

Case studies give instructors the freedom to specify discipline-relevant content; that is, no matter the course, an instructor can write a relevant narrative to engage students in using whatever competencies are necessary to progress toward the course learning outcomes. Well-designed case studies often challenge students' preconceptions about how learning happens (Nilson, 2013) and present opportunities for students' realistic applications of content, resulting in a higher likelihood for learning transfer (Perkins & Salomon, 1992). In a more traditional, transmission-of-knowledge instructional method, students learn to wait until information is presented to them, and they then attempt to remember it when prompted to do so. Case studies push students to think about problems with unclear answers, devise their own process for learning content, and guide themselves rather than rely on instructor guidance.

The continuous case study. Nilson (2010) offered a unique approach to case-based assignment development called the continuous case study. In a continuous case, the narrative developed is still a story, but it is revealed in segments. A practical example could be comparing different children's books along the developmental timeline. In Pre-K and primary grades, a ten-page story is likely developmentally appropriate as it contains a singular theme or lesson. However, once children approach and enter adolescence, they are ready for chapter books, which provide more richness and detail, deeper storylines, and a longer narrative.

The continuous case offers a format that follows a similar pattern as do chapter-books. The segmented narrative deepens the student learning experience by presenting complexities that require advanced cognitive engagement. First, the continuous case adds increasingly realistic scenarios that often increase in depth of content. Second, the continuous case builds on the uncertainty of good case design by creating an ongoing plot ripe for cliffhangers meant to encourage a sense of urgency in students as they advance through the story. While students are aware that new information is coming or may change, they remain uncertain as to the future of the story. It is critical to develop a well-designed continuous case that meets a number of criteria. The next section of this paper details one such design process.

Designing a Continuous Case Study

While case study use is well documented in existing scholarship, and across a wide variety of disciplines, there is little to no evidence of a "how to" for designing a continuous case study. This section presents one such "how to" as a process for designing an evidence-based continuous case study.

Effective case-based design. Designing case studies to facilitate and assess student learning involves more than just writing a story. According to Nilson (2013), case studies relevant to course content can be found or adapted from other sources or created from scratch. As with any course activity, it is important for case studies to meet the established learning outcomes of the course. In designing a continuous case study, instructors can purposefully select the most appropriate course content to include. Additionally, instructors can more easily incorporate continuous case studies as a formative assessment of learning that follows the natural flow of the course. By scaffolding the course content over time (as opposed to a singular, summative case study), instructors can more accurately provide students with specific, attainable learning goals that align with the broader collection of course learning outcomes.

Nilson (2010) described four, must-have components of good case design. First, a case must be realistic. Students will be able to better identify with case content that has lifelike characters, historical context, and details relevant to their lives. Next, a case should prompt students to draw on prior knowledge, preferably using course content familiar to them. Then, a case needs enough ambiguity for students to create their own unique problem-solving processes and solutions. Without a unique process or result, students are less likely to remain attentive and engaged in the task. Finally, a case must rouse a sense of urgency in students. Although students will know that the case is merely illustrative of something real, stimulating their responses to time-sensitive and/or serious solutions is more likely to capture their attention.

Writing a case story. Atkinson (2008) described the creative writing elements that strengthen case study content, including setting, plot, characters, conflict, and a fitting conclusion. Writing an effective story takes time (Egleston, 2013; Nilson, 2010). However, by using creative writing techniques, instructors can integrate course content into the broader scope of the detail necessary for a highly realistic scenario. Additionally, and maybe most critically, time spent writing a case study with rich detail and intentional curricular alignment means that instructors are prepared to effectively assess student learning.

Selecting course content. It is important to select course content that will contribute to students' knowledge bases from which to draw as they respond to the case study (Nilson, 2010). A good, two-pronged approach to selecting course content is guided by two questions:

1. What course content is already segmented? In other words: Do I already have some course content that would be more effective presented over time rather than in one chunk? For example, if one course objective in a course for pre-service teachers is to introduce sources of classroom motivation and engagement, the MUSIC Model of Academic Motivations (Jones, 2009) is already segmented into five essential elements of academic motivation.
2. What course content is most critical for my students to apply in a real-world setting? Using the same example of a course for pre-service teachers, it is absolutely essential that they understand the various standards, codes of ethics, and principles of good teaching that exist in educational practice. Realistic scenarios depicting events that require a strong knowledge base would help pre-service teachers develop a deeper understanding of, and practice applying, critical concepts before entering the field.

Regardless of the discipline, it is important to be intentional in selecting course content that ensures applicability and alignment with course learning outcomes.

Aligning with course learning outcomes. Because any case-based learning should support the intended course curriculum (Nilson, 2013), it is critical that an instructor aligns course content with relevant course learning outcomes. Often, learning outcomes are explicitly aligned with course content. However, some learning outcomes are broken down into more detailed objectives, competencies, or skillsets that create a more indirect link to the broader curriculum. In this case, an instructor should consider two factors:

1. Will using a continuous case study effectively measure key learning concepts or competencies associated with the course learning outcomes? In a graduate-level course on assessing and evaluating student learning, a measurable learning outcome might involve students understanding the difference between the terms "assessment" and "evaluation." If so, designing a continuous case study that offers a realistic narrative depicting a teacher's curriculum planning to highlight the succinct differences between when and why the processes associated with each term is most effective.
2. Will using a continuous case study effectively measure multiple components associated with the course learning outcomes? Remember: A

continuous case means developing a segmented story over time. If time is going to be set aside for a continuous case study, then it is more likely time well spent if the activity covers multiple course learning outcomes. In the same graduate-level course on assessing and evaluating student learning, a series of segmented scenarios could target independent concepts in individual segments—e.g., reliability and validity of assessments—alongside broader concepts that offer a multi-segment narrative, such as why teachers might need to know whether or not their course activities are both reliable and valid.

Once an instructor has determined the course content, and that the content aligns with the intended course learning outcomes, it is time to design the continuous case study.

The continuous case study design process. There are many examples of already developed case studies and PBL problems in a variety of disciplines (see Nilson, 2013, pp. 49-50). However, there are few examples of the guidelines for the case writing process. Nilson's (2010) guidelines for creating original case studies provided a "must-include" framework for case design. Atkinson (2008) offered key creative writing components for establishing compelling characters, setting, and plot that support the purpose of the case and invoke a high level of urgency in students' responses to the case. The Global Travel and Tourism Partnership (2015) recommended some of the research, analytical, and writing processes necessary to writing effective case studies. Informed by the aforementioned sources, the following are the recommended steps for designing an effective continuous case study:

1. Identify the course content to use in the case. The course content should support the course learning outcomes and a progressively revealed storyline.
2. Develop an overall story that is compelling and realistic. Ensure that the setting, characters, plot, and conflict are realistic and relevant to the learner and that the organization of the story makes sense sequentially.
3. Divide the story into the number of segments necessary to both adapt it to a continuous case format and to remain consistent with course content. Be sure to open with an introduction, which includes a clear indication of the most relevant course content, and close with a conclusion. Closure is critical to serve as a way to summarize key concepts one final time and to provide a concise summary of remaining problem(s) to solve.
4. Consider each segment of the case separately to ensure that segments function independently as well as collectively. Each segment will directly mention critical course content, but it must first provide a sense of urgency that compels the reader to be prepared to explore new information. The "flow" of the story is critical to student engagement.
5. Formulate the problem(s). The problem(s) should be clear and concise, and they should prompt students to access their prior knowledge of course content, and possibly of their own lived experiences, as appropriate.
6. Identify the content that will be included in the case, as well as the content that will not be included in the case. Because a case should maintain some ambiguity, it is important to decide what content students need (or do not need) in order to work toward solving the case.
7. Revise the case segments (as necessary) to best represent the course content and still fit the overall storyline.
    a. In a continuous case, each segment should be able to stand independently and fit into the overall story (see Step 3).
    b. After writing the overall case story, it is essential to re-read the story to determine whether or not it flows well (see Step 4).
8. Design prompts that explicitly instructs students on the format and content expected in their case responses. Prompts should follow each segment of the case. A good practice for writing the prompts for each case segment is to use question-based or action-based statements.
    a. A good question-based prompt might read: "Using (course content), how could (character or characters) respond to (clear, restating of the problem presented) most effectively?"
    b. A good action-based prompt might read: "Create a (something to be created) that uses (course content) to respond to (clear, restating of the problem)."

    In both instances, students are encouraged to engage in what Bloom's Taxonomy (revised; Anderson & Krathwohl, 2001) considers more advanced cognitive behavior. Student would be moving beyond more basic cognitive activities like remembering and understanding, and they would have to apply, analyze, evaluate, and create to best respond to the given scenario.
9. To determine some sense of the reliability of your continuous case, ask people with at least

baseline knowledge of the course content to complete all, or at least a few segments of, the case. This is particularly critical if the case responses are part of a research-driven data collection process. A good practice would be using an inter-rater comparison of at least three trusted colleagues' completed responses.

10. Facilitate (if the design is for an in-person or online, synchronous activity) or administer (if the design is for an individual or group assignment, outside of class, or as an online, asynchronous activity) the continuous case study.

While following these steps will not guarantee a successful implementation, the intentionality of the design will most certainly offer a much higher likelihood that the continuous case study itself is content-driven and effectively constructed.

Assessing student learning using a continuous case assignment. After receiving responses, use the case responses provided by students who completed the case to assess student learning. Assessment is important to understand the extent to which students have learned course content, what they are able to do with what they learned, and the cognitive processes in which they engaged during the assignment. Some principles of good learning assessment include exploring whether or not students are integrating new concepts with their prior knowledge bases, to what extent their progress is indicative of course outcomes, and, directly linked to case-based learning, how self-directed students are during the learning process.

Regardless as to the method of learning assessment, it is critical to offer students clear and direct feedback. Offering ongoing feedback is one way to increase the likelihood that student responses will be more complete and in-depth in subsequent segments (Ambrose et al, 2010). In continuous case studies, instructors must offer feedback after each segment completed. Otherwise, instructors should expect to see similar patterns in students' expressions of learning, and students will rely on a routine response format instead of treating each segment as an opportunity for a novel response.

While the design of the continuous case study is the central focus of this paper, an essential question remains. In what ways can instructors use continuous case studies to better understand student learning? The next section of this paper details three exemplars from the college classroom, including models of content application.

Exemplars of the Continuous Case Study in Practice

The following section of the paper shifts gears from an evidence-based step-by-step guide into three exemplars of continuous case studies in practice. Each exemplar is from the perspective of the instructor and offers both observational and experiential accounts of the benefits and challenges of using continuous case studies in a classroom setting.

Exemplar 1: The continuous case as an in-class, instructor facilitated activity. Midterms offer a unique opportunity for instructors to gather information about their students' progress at or near the halfway point of a course. In an introductory course in a teacher education program at a regional, comprehensive university, students are required to learn about U.S. education through its history, philosophical underpinnings, theoretical frameworks, and effective teaching and learning practices.

To avoid what students often described as what "all the other professors do," I decided to incorporate a continuous case study as an in-class activity to better understand how my students were remembering, understanding, and applying the concepts we covered over the first half of the fall semester. As the midterm fell close to Halloween, I designed a case story using well-known monsters and stories of the macabre. I decided to present the continuous case by using a slideshow and by placing students in teams to solve problems as they arose in the case. I created a sense of urgency, not only by nature of the characters included, but also by designing an overall theme of behavioral issues throughout an imaginary school year.

I facilitated the activity as Professor Van Helsing and offered segmented scenarios about challenging parents originally from Translyvania (and who could only attend parent-teacher meetings after dark), excessively hairy students with anger issues, and an interesting little boy named Damien. I connected the segments to course outcomes focused on understanding the typical structure of school administration and classroom management techniques, as well as on applying various educational philosophies and approaches in the classroom.

Challenges of the in-class, instructor facilitated method. It took a long time to prepare for that day of class. For many years, I spent maybe two-to-three hours preparing selected-response midterms for previous courses. Designing a constructed-response mid-term activity that needed to last most, if not all of my 150 minute class was very time-consuming. Moreover, as was evidenced by what I might label students "running out of gas," my students' engagement and attention began to wane after about 90 minutes.

Benefits of the in-class, instructor facilitated method. Students loved the wordplay and creativity in the case story. It was clear that team-based problem-solving helped many of the students develop more comprehensive solutions, as well as unique methods for researching course and external content to use in those solutions. Additionally, the lighthearted tone that accompanied the midterm was, as one

student put it, "way less stressful" than the other mid-terms they were taking.

Exemplar 2: The continuous case as a progressive, out-of-class assignment. In a hybrid course (partially online and asynchronous and partially an in-person class), students need a healthy balance of self-driven work and facilitated activity. In an intermediate peer leadership course at a large research institution, students are required to learn about how to apply leadership theory in practice which, in the case of this course, involved each student having an actual peer leadership position at the institution.

To understand how students' experiences were helping them learn about the relevant components of peer leadership from the course content, a colleague and I used the institution's online course delivery system to design a connected series of discussion forums to serve as our continuous case study assignment. The story was directly applicable to the students as it was surrounding the fictional (but quite realistic) portrayal of a leadership team for a highly involved student organization. Each student completed the case study from the perspective of a member of the student organization's leadership team with a variety of time-sensitive decisions to make.

Students engaged in the forums during the week of a directly connected course reading about a specific peer leadership practice. Each segment offered a unique problem carefully woven into the previous and subsequent segments. Additionally, students were required to read and respond to their peers' forum responses to encourage interaction and debate in the virtual classroom.

Challenges of the progressive, out-of-class assignment. Using the online course delivery system was not always easy. The specific tools the system included were challenging, and we had to adapt our design to fit those tools. In addition, the peer-to-peer interaction was only somewhat successful. It was more frequent to read discussion that included comments similar to "What a great idea!" and "Your response is perfect!" than it was discussion that involved rigorous, intellectual debate.

Benefits of the progressive, out-of-class assignment. It was very easy to track the extent to which students were a) connecting and applying course content as peer leaders, and b) able to use their own peer leadership roles as exemplars in their responses. The online format offered a unique, saved collection of responses for future use in a variety of ways, as well as for easy comparison of aggregate progress. The interactive component of the discussion forums not only allowed for peer-to-peer discussion, but for instructors' collaborative engagements with students during the problem-solving process. Instructors found the consistent engagement alongside students and within the forums quite beneficial to their observations of students' progressive learning.

Exemplar 3: The continuous case as a method for data collection. In the aforementioned peer leadership course (see Exemplar 2), I obtained the appropriate institutional review board approvals and participants' consents to use students' responses to collect data. I used DiSessa's (1988) knowledge-in-pieces framework as the scholarly context for the study. Because the results of the study are as yet unpublished, I will offer a condensed overview of how the continuous case study assignment was designed to produce relevant data.

If properly designed, the responses to a continuous case offer a unique opportunity for data collection. Using a qualitative methodology, I connected each segment to a specific piece of course content. Each piece of course content tied to a larger conceptual framework that contributed to principles of effective leadership. I was able to view students' responses within and across segments, and in the aggregate, to discover emergent themes, unique methods of application, and patterns of responses.

Challenges of using the continuous case as a method for data collection. While the idea of collecting data over time is beneficial in many ways, it does require an extensive amount of time, as well as multiple instances of data collection. Because the continuous case method is not well documented in existing scholarship, it is challenging to examine how valid or reliable it is. In order to ensure some sense of reliability, multiple colleagues lent their time and efforts to review the method, as well as participate in a somewhat rigorous process to train reviewers on the study's procedure.

Benefits of using the continuous case as a method for data collection. As a unique course activity, the continuous case is also a unique format to collect and analyze data for evidence of a wide variety of types of learning, cognitive progress, curricular alignment, and lived experiences. In addition, by collecting data across time, the results were more comprehensive than a one-time study would have provided.

Conclusion

The design and use of continuous case studies offers a unique, adaptable instructional strategy to encourage and assess student learning. While a litany of examples of methodologies involving case studies is found throughout existing scholarship, the continuous case study is an emergent practice with the potential to meet the instructional needs of faculty across education levels. At the college level, continuous case studies provide faculty both instructional (in- and out-of-class) and scholarly (a method for data collection) applications.

Regardless of how they are applied, continuous case studies must at minimum follow two critical rules. First, the continuous case study must involve compelling storytelling to engage reader's interest and generate the sense of urgency that increases the likelihood of student engagement in solving the problem(s) at the center of the case. Additionally, the continuous case study should not only be entrenched in relevant course content (and be explicitly connected to learning outcomes), but also incite a progression of learner behaviors that moves from straightforward recall of information to more complex cognitive activities such as integrating seemingly disparate pieces of knowledge into self-generated, comprehensive solutions.

I encourage both practical and scholarly uses of the continuous case. Additionally, I would be pleased to collaborate on any future endeavors involving the continuous case method. The benefits of student learning and engagement that I have observed using continuous cases in my classroom far outweigh any challenges, and the continuous case study will continue to be a mainstay in my future lesson planning and research agenda.

References

Albanese, M., & Mitchell, S. (1993). *Problem-based learning: A Review of literature on its outcomes and implementation issues. Academic Medicine, 68*(1), 52-81.

Ambrose, S. A., Bridges, M. W., DiPietro, M., Lovett, M. C., & Norman, M. K. (2010). *How learning works: Seven research-based principles for smart teaching*. San Francisco, CA: Jossey-Bass.

Anderson, L. W., & Krathwohl, D. R. (2001). *A taxonomy for learning, teaching and assessing: A revision of Bloom's taxonomy of educational objectives*. New York, NY: Longman.

Atkinson, T. (2008). Using creative writing techniques to enhance the case study method in research integrity and ethics courses. *Journal of Academic Ethics, 6*(1), 33-50.

Atkinson, T. N. (2014). The "reverse case study:" Enhancing creativity in case-based instruction in leadership studies. *Journal of Leadership Education, 13*(1), 118-128.

Barrows, H. S. (1996). Problem-based learning in medicine and beyond: A brief overview. *New Directions for Teaching and Learning 1996*(68), 3-12. doi:10.1002/tl.37219966804

Barrows, H. S., & Tamblyn, R. (1980). *Problem-based learning: An approach to medical education.* New York, NY: Springer.

Chaplin, S. (2009). Assessment of the impact of case studies on student learning gains in an introductory biology course. *Journal of College Science Teaching, 39*(1), 72-79.

DiSessa, A. (1988). Knowledge in pieces. In G. Forman, & P. B. Pufall (Eds.), *Constructivism in the computer age* (pp. 49–70). Hillsdale, NJ: Lawrence Erlbaum Associates.

Egleston, D. O. (2013). The interactive, progressive case study. *Business Education Innovation Journal, 5*(1), 101-104.

Foran, J. (2001). The case method and the interactive classroom. *Thought & Action, 17*(1), 41-50.

Gareis, C. R., & Grant, L. W. (2015). *Teacher-made assessments: How to connect curriculum, instruction, and student learning.* New York, NY: Routledge.

Global Travel and Tourism Partnership (GTTP). (2015). *How to write a case study.* Retrieved from http://www.gttp.org/wp-content/uploads/2015/06/HowToWriteAGoodCase.pdf

Herreid, C. F., & Schiller, N. A. (2013). Case studies and the flipped classroom. *Journal of College Science Teaching*, *42*(5), 62-66.

Hmelo-Silver, C. E. (2004). Problem-based learning: What and how do students learn? *Educational Psychology Review, 16*(3), 235-266.

Jones, B. D. (2009). Motivating students to engage in learning: The MUSIC model of academic motivation. *International Journal of Teaching and Learning in Higher Education, 21*(2), 272-285.

Kim, K. J., & Kee, C. (2013). Evaluation of an e-PBL model to promote individual reasoning. *Medical Teacher, 35*(3), 978-983. doi:10.3109/0142159X.2012.717185

Koehler, M. J. (2002). Designing case-based hypermedia for developing understanding of children's mathematical reasoning. *Cognition and Instruction*, *20*(2), 151-195.

Nilson, L. B. (2010). *Teaching at its best: A research-based resource for college instructors*. San Francisco, CA: Jossey-Bass.

Nilson, L. B. (2013). *Creating self-regulated learners: Strategies to strengthen students' self-awareness and learning skills*. Sterling, VA: Stylus Publishing, LLC.

Perkins, D. N., & Salomon, G. (1992). Transfer of learning. In *International encyclopedia of education* (2nd ed.). Oxford, UK: Pergamon Press.

Raju, P.K., & Sankar, C. S. (1999), Teaching real-world issues through case studies. *Journal of Engineering Education, 88,* 501–508. doi:10.1002/j.2168-9830.1999.tb00479

Stanford Center for Teaching and Learning, (1994). Speaking of teaching. *Stanford University Newsletter on Teaching, 5*(2), 1-4.

MATTHEW W. GRIMES earned his doctorate in Curriculum and Instruction, with a focus in Educational

Psychology, from Virginia Tech. Currently, Matt serves as an Assistant Professor and Director of Experiential Learning in the College of Education and Human Development at Radford University. His scholarly interests include studying the effectiveness of innovative instructional strategies at the PK-12 and higher education levels, the extent to which new teachers understand and use evidence-based instruction in their PK-12 classrooms, and how to better understand the instructional needs of students from underrepresented populations.