

INTEGRATING CLASSROOM VIDEO CASES INTO A TEACHING METHODS COURSE: A TWO-YEAR JOURNEY OF CURRICULUM REDESIGN

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This design case illustrates a three-semester-long curricular and instructional design project focusing on the design and implementation of a technology-enhanced case-based learning experience for pre-service teachers within a teaching methods course. This case highlights the iterative process that a teacher educator and an instructional designer went through to integrate technology-enhanced cases into a methods course and connect them to other aspects of the course experiences, as well as the teacher education program in general. The first part of this case provides an overview of the project, the designers and their personal objectives, design context, information on the online environment and case materials, and ideas, challenges, and differences of the designers shared before the actual design process. The second part of this case presents each phase of our design from the first to the final semester, including the discussions of our goals, issues, results, and reflections.

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<https://doi.org/10.14434/ijdl.v10i1.24647>

PROJECT OVERVIEW

As readiness for teaching practice has been a constant issue in K-12 education, there has also been a persistent need for providing good classroom models in teacher education. Field experiences during teacher preparation, however, have suffered in the U.S. due to limitations including a lack of classroom placements, good pedagogical models, and classroom supervision (Grossman, 2010; Heineke, Carter, Desimone, & Cameron, 2010; Zeichner, 2014). To address the issue, many teacher educators have advocated for the use of case methods, especially cases presented in the form of video (e.g., Goeze, Zottmann, Vogel, Fischer, & Schrader, 2014; Santagata & Guarino, 2011). Our design effort directly speaks to this notion of using case methods in teacher education to supplement field experience.

The purpose of this design project was to integrate technology-enhanced cases into a teaching methods course so that pre-service teachers can benefit from studying about teaching practices with authentic classroom cases. For this project, we defined technology-enhanced cases as authentic practices captured in a video format that are available online with other supplementing materials to support the viewer's understanding of context and practice (Blomberg, Sherin, Renkl, Glogger, & Seidel, 2014). Including the initial preparation and final evaluation periods, this project lasted for nearly two years (see Figure 1).

DESIGN CONTEXT

Methods Course

The teaching methods course into which we integrated the cases is part of the secondary social studies education program at a large Midwestern university and titled "M445: Methods of Teaching Secondary Social Studies" (M445). It focuses on preparing pre-service teachers (undergraduate students) to: (a) prepare students to be active citizens in a modern democracy; (b) assess, evaluate, and use a variety of instructional resources and tools; (c) plan units that

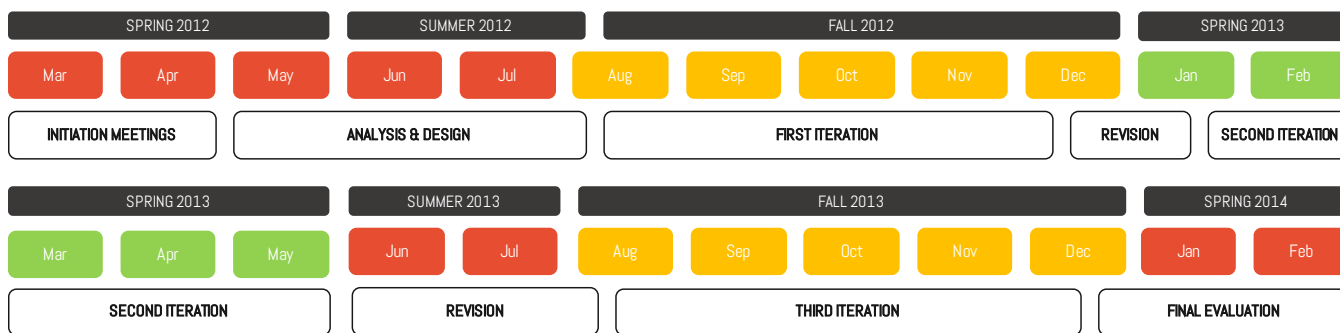


FIGURE 1. Timeline of the project.

use a variety of instructional strategies and methods of assessment; (d) align curricula and instruction with state and national standards; and (e) engage in reflective practice, collaboration, and professional development as components of effective curriculum development.

Before taking M445, pre-service teachers typically have limited experience in unit design, and have virtually no experience in learning through technology-enhanced cases. They are placed in local schools for early field observation to work with cooperating teachers and often given the opportunity to teach lessons. Successful completion of M445 leads to student teaching in the following semester. M445 is a sixteen-week course that meets once a week for 2 hours and 45 minutes. The course has three course textbooks related to the cases of experienced teachers and classroom instruction. Before incorporating the cases, the course curriculum included five different assignments: (a) weekly online postings, (b) a documentary lesson plan, (c) an ambitious teaching presentation, (d) a unit plan, and (e) a final essay.

DESIGNERS

While working on a project to design and develop a classroom case database, I (*the primary author of this case*) initiated this project to use video cases in a methods course by introducing an online database with K-12 classroom cases to a teacher educator (TE). Initially, I planned on testing the database's usability in methods courses in which this database would most likely be used. The other authors and I were also curious about whether a teacher educator would use this database as we intended or to serve his own purposes. We also found in a previous study that teacher educators' use of the cases in the old database varied and that not many of them used all the materials in each case (Shin, Brush, & Saye, 2014). With such intention, I recruited the TE to show the classroom videos and discuss my plans. As a result, I spent four semesters with the TE (re)designing, implementing, and evaluating to transition from a simple add-on to full integration of technology-enhanced cases into an existing curriculum. Other authors of this case supported the design and modification of the case database, as well as my reflection process throughout the project.

Even though I initiated the project, in retrospect, the TE was the main designer of the overall project since he was the course instructor in charge of the curriculum. My role changed to that of a researcher as time went by while the TE took more initiative and leadership in designing the case-based learning experiences. It seemed to me that the TE gradually gained confidence in his use of new materials. We discussed any decisions related to using the cases in advance to implementation, and even further, the TE tended to discuss other course issues with me so that he would have a "collaborator to bounce ideas off" for better instruction. At the time of this project, the TE considered himself a *veteran teacher* with more than 11 years of experiences as a social studies teacher, but also as a relatively *novice teacher educator*. He also considered himself a reflective practitioner open to "anything that [would] make [his] teaching better." This made me think that I could provide honest feedback to him, which did not necessarily happen all the time. I had no experience in teaching a social studies methods course, but pursued an additional degree in social studies education in conjunction with my primary degree in instructional technology. This project was a learning process for both of us with no experience teaching with technology-enhanced cases. At first, I took the leading role as I had more knowledge about the case database and studied how the database had been used in methods courses. After the first iteration, the TE took the lead, and I played a role of supporting designer and feedback provider. While the fact that we both studied social studies education made it easy to discuss the curriculum for case implementations, we also found differences in our design ideas.

INSTRUCTIONAL NEEDS

The most critical challenge the TE identified in teaching M445 was a disconnect between methods courses and field-based experiences. Before and during the project, the TE frequently discussed his frustration with some cooperating teachers who rarely used the instructional strategies taught in the methods course. The program also faced challenges with limited placements and funds for hiring field supervisors. Even if the cooperating teachers did utilize diverse strategies, there was little guarantee that pre-service

teachers would be present during the whole period of instruction. This disconnect to him was the biggest concern regarding this course and an issue that he could not resolve by himself. Indeed, many other teacher education programs also struggle with a similar issue as their students do not have sufficient opportunity to observe student-centered instruction learned in methods courses during field placements. Since student-centered instruction is at the core of social studies education to promote students' civic competence and participation, the fact that not many model classrooms are available for pre-service teachers was one of the critical motivators for the authors and the teacher educator to collaborate on this project.

Before this project, the TE had relied on his ability to model different instructional strategies to meet these needs. This model-lesson approach had two notable limitations. First, the TE knew that he could not model a strategy that would take several hours or multiple days to employ, as he lacked the necessary instructional time. Second, I realized that pre-service teachers participating in his lessons would take part as "students" rather than "teachers." Fully aware of these limitations, the TE agreed to integrate technology-enhanced cases in his methods course.

CASE DATABASE

The Wise Practice Case Database (WPCD) used in M445 was part of a web-based environment called the *Persistent Issues in History Network*, (<http://www.pihnet.org>) constructed over research-based curricular and instructional frameworks (i.e., *Persistent Issues in History* and *Problem-Based Historical Inquiry*) to promote the use of problem-based learning models in social studies classrooms (Saye & Brush, 2004). I worked as the main designer in redesigning this database (see Figure 2), and thus, it was crucial for me to identify areas of improvement within the database through this project.

The WPCD included a collection of technology-enhanced cases that present model-teaching practices. The teachers highlighted in the cases (hereinafter *case teachers*) primarily utilized student-centered instructional strategies that



FIGURE 2. The homepage of the Persistent Issues in History Network website.



FIGURE 3. Case viewer in the WPCD that allows users to click on tabs to review case materials including classroom video clips.

situated persistent, societal issues in the context of history to engage students in inquiry and deliberation. The database users use a Case Viewer see all the case materials (see Figure 3).

FIRST ITERATION

The first iteration of the project began with discussing the logistics of the project, the WPCD, and the methods course. During the first meeting, the TE provided information on the course, including how it was positioned within the

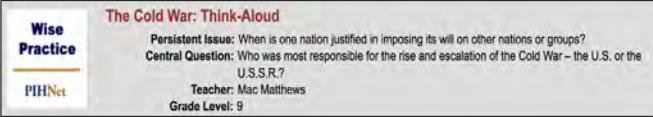

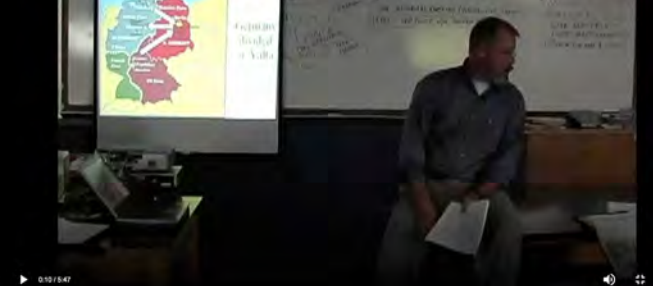
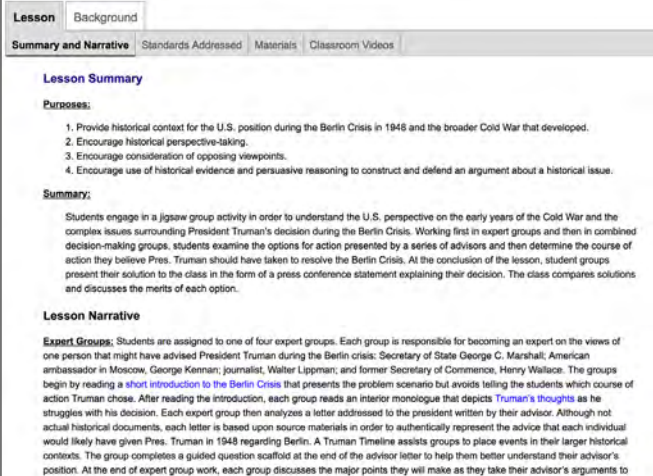

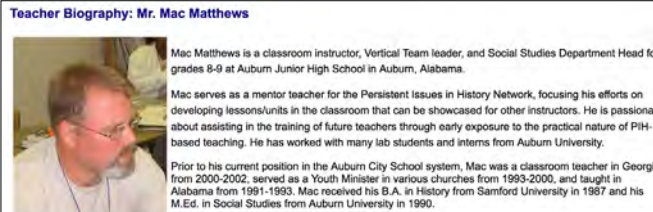
MATERIAL TITLE	DESCRIPTION	SCREENSHOT
Unit information	An information box that contains a persistent issue and a unit central question with information on grade level and subject area.	
Classroom video	Video clips that show a teacher's actual practice in a real-world classroom.	
Teacher reflection video	Video clips that show the same classroom videos, but have the teacher's voice over on his or her instruction, areas of improvement, etc.	
Lesson plan	The actual lesson plans that teachers used are uploaded online.	
Teaching materials	The materials used during lessons are uploaded online in pdf or jpg format.	
Teacher information	As part of the background information on a case, the teacher's biography is provided online.	

TABLE 1. Case materials in the WPCD Case Viewer.

teacher education program, while I explained the WPCD and research on its use in social studies teacher education programs across the U.S. (Shin, Brush & Saye, 2014). After some exploration, we began our initial design, in which we analyzed the details of the context including its curriculum, and finalized the design for implementation.

Goals, Values, and Ideas

During the initial meeting, the TE and I shared the project's overarching goal of supporting pre-service teachers' learning of instructional strategies through case-based learning. This goal guided how we integrated the cases in the course, and also, how we evaluated the entire experience. Another shared goal was to increase efficiency and effectiveness in modeling different instructional strategies. This goal was crucial in that before the case implementations, the TE's model lessons were the only way to link abstract knowledge (i.e., theories, concepts, and values) with actual teaching practice. We also had different personal goals. Because he identified himself as a reflective practitioner, the TE's most important goal was to help pre-service teachers develop as reflective practitioners. I shared his view; however, I focused more on designing the experience to maximize the learning of instructional strategies and classroom management, considering reflective practice as one of many learning outcomes. Assuming the role of researcher, I also sought to investigate the case experience of the instructor and pre-service teachers as a whole.

We also shared each other's perspective to successfully carry out the project. Both our beliefs lie in socio-constructivism and we did not expect the project to be completed or show success in a single semester. I believed that our beliefs in socio-constructivism would make it easier to approach the TE when discussing areas of improvement and changes in instructional approaches. However, this was not always the case as we moved into different phases of design and redesign. Our emphasis on the importance of reflective practice, iterative design processes, and challenging pre-service teachers also influenced how we designed and evaluated the teaching and learning experiences.

In sharing ideas and experiences, the TE discussed the ideas of reflective practice and apprenticeship of observation, as well as his experience with text-based cases. I provided an overview and examples of case methods in teacher education, as well as discussed theories that are frequently covered in case literature, such as cognitive flexibility and dynamic memory theory.

Analysis of Methods Course

Goals

The methods course is primarily aimed at preparing pre-service teachers to educate K-12 students as citizens of a pluralistic participatory democracy. To achieve the goal, sub-goals focused on equipping pre-service teachers with knowledge and skills in instructional strategies and methods of assessment, as well as helping them to become reflective practitioners who engage in continued professional development and collaboration. The TE did not specify instructional objectives for any activity in the syllabus, but he did provide an overview of each assignment and verbally delivered the objectives in class. In retrospect, this often functioned as a barrier to some pre-service teachers in understanding the rationale for engaging in case-based learning, especially for the first iteration with 26 students with varying levels of understanding.

Basic Curriculum and Typical Lessons

We first analyzed the existing curriculum to integrate the technology-enhanced cases into the methods course. There were four critical components of M445 in terms of content delivered in an order: (a) educational foundations; (b) instructional strategies; (c) lesson and unit design; and (d) professional development. We reviewed the instructional strategies included in the M445 curriculum and linked them with the teaching practices depicted in the cases. Those included Socratic lectures, concept formation, discussion, deliberation, debate, cooperative learning, simulation, and role-playing.

Based on initial observations, the TE followed a similar sequence for each class. He occasionally changed the order

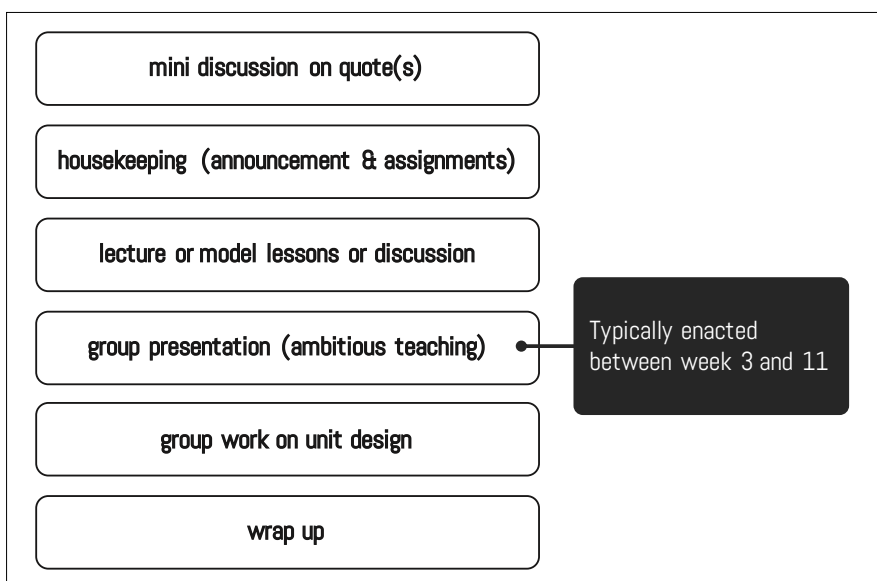


FIGURE 4. Typical lesson sequence before case implementations.

CASE TITLE	DESCRIPTION	IMPLEMENTATION
Concept Discovery: Just War	This case addresses the topic of “concept formation” in the curriculum. The case teacher utilized instructional strategies such as “jigsaw,” “role-playing,” and “cooperative learning.”	Case Assignment #1
Structured Academic Controversy: Spreading Democracy	This case addresses the topics of “deliberation” and “simulation” in the curriculum. The case teacher engaged students in a controversial issue that does not have a single right answer.	Class Implementation #1
Congressional Hearing: U.S. 1920s	This case addresses the topics of “simulation” and “student inquiry” in the curriculum. The case teacher and students are relatively inexperienced in student-centered teaching and learning.	Class Implementation #2
Think-Aloud: The Cold War	This case addresses the topics of “role-playing,” “cooperative learning,” and “historical perspective taking” in the curriculum. The case teacher and students are quite experienced in student-centered teaching and learning.	Class Implementation #3
Analogous Case Study: Washington’s Presidency	This case addresses the topics of “student inquiry,” “cooperative learning,” and “discussion” in the curriculum. The case teacher utilized both direct and student-centered instruction in her classroom.	Case Assignment #2

TABLE 2. Information of initially selected cases.

of one or two elements, but in most cases, he maintained the typical sequence (see Figure 4).

Issues

There was one critical and salient design issue within M445: a lack of connection between pre-service teachers’ methods course experience and their field-based experience. This issue could also be split into four aspects: (a) ensuring the application of theories and concepts learned in methods courses to their field-based experience; (b) ensuring the connection between all activities within the course and field-based experience; (c) ensuring the use of model lessons or practice examples to assist field-based experience; and (d) ensuring the field placements reflect the goals of the methods courses. We recognized that these issues were not necessarily specific to this course, but perhaps part of a broader structural problem within the teacher education program. In this regard, when we initially defined our design space we had to readily acknowledge that we might not be able to address the larger contextual problem.

Initial Design

Focus Objectives

To address the design issue, we first emphasized one major objective for the case-based learning experience: “analyze elements of teaching practices shown through the cases.” This was to help pre-service teachers apply theories and concepts to what they observed in the case videos and, eventually, extend their application to field observations. Another objective that the TE noted was to “reflect on case

teachers, cooperating teachers and pre-service teachers’ own practices.” This spoke broadly to the design issue as the TE aimed to facilitate reflective thinking using the cases. By replacing some model lessons to case-based learning, the TE attempted to engage pre-service teachers in critiquing teaching practices from both the teacher’s and students’ perspectives.

Basic Structure

The TE decided to include five complete cases from the WPCD in the curriculum (See Table 2). His decision was based on the fact that: (a) cases include videos of classroom instruction; (b) case teachers mainly utilize student-centered instruction emphasized in the curriculum; (c) cases are frequently used by other social studies educators; and (d) empirical studies dealing with technology-enhanced cases reported the use of three to five cases in a semester. Thus, three cases were used for class implementations, and two cases were employed for case assignments.

The TE decided on two types of uses (i.e., case assignments and in-class discussions) frequently mentioned in literature. He believed that in-class discussions would enable students to construct collective knowledge. Besides the fact that an essay-type assignment was widely used for case-based learning, the TE also wanted his students to critique and reflect on the cases and write a detailed report to measure the level of their understanding.

For the weekly schedule, the TE matched the weekly content of the existing curriculum to the case content. To avoid burdening pre-service teachers, the TE scheduled the case

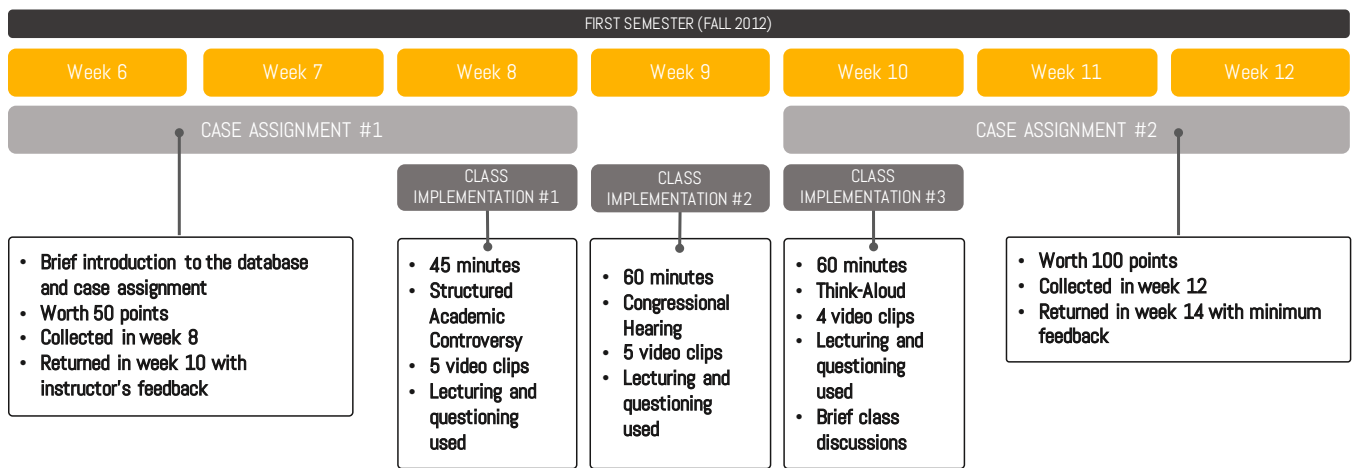


FIGURE 5. Sequence of case experience in the first semester.

assignments in the weeks with no major assignment. The first implementation was scheduled in week 6 as the first assignment (50 points), and the last one was scheduled in week 10 for the second assignment (100 points). Between those assignments, we planned to have in-class case implementations. The TE made the decision to differentiate the grading points between the two assignments since he believed that the difference would function as a motivator for pre-service teachers to pay much attention to feedback and need for growth in the second assignment.

Materials

We created two forms of instructional materials for the first iteration. The first document included a rubric designed to support learning through the case assignment in week 6. The rubric had eight items, including critiques of: (a) the overall format, (b) the lesson overview, (c) the teaching strategy (elements), (d) the teaching strategy (positive/negative), (e) the teaching strategy (content), (f) the teaching strategy (improvement), (g) classroom management, and (h) grammar, spelling, and punctuation. Specific requirements for each item were delineated in the document. The second document was about each case for in-class implementation designed to help the TE with his instruction in class. It included: (a) case information (e.g., unit central question, strategies used), (b) running time and brief description of video clips, (c) processing or prompting questions, and (d) reflective questions. Since it was the TE's first time using the case database, I suggested that he use the document to avoid struggle with a new medium.

Implementation

Sequence

The overall sequence of case experiences followed our initial plan (see Figure 5). The TE explained the case assignments in weeks 6 and 8, and gave two weeks to complete them. Three complete cases were implemented over three weeks so that they were all studied before the second assignment.

Instruction

With very little variation, class implementations took on a similar structure (see Figure 6). After a brief introduction to the unit's central question that guided the case teacher's practice, the TE immediately showed a classroom video clip *without pausing*. He posed one or two processing questions, then without furthering the discussion he explained what happened in the videos or the concepts he hoped pre-service teachers would recognize from the teaching practice. This practice was repeated until the TE ran out of instructional time. Class implementations took between 45 and 60 minutes. It was difficult to show every classroom video clip during each implementation, as just watching the clips took more than 20 minutes, and the time allocated for case experience was usually less than an hour in this iteration.

For the first in-class implementation, the TE quickly proceeded through five classroom video clips. He asked several processing questions, but did not have the time to engage students in discussions or lecture on specific teaching elements. He also did not have the time to show the remaining clips. During other implementations, he did not show each entire clip, but had lectures and/or short discussions on one or two questions on each clip. Though the TE managed to show the remaining clips without any lecture or discussion, he did not use any other case materials during the three implementations.

Student Experience

I was introduced as a collaborator and fellow teacher educator and observed the instructor and students at the back of the classroom every week. The entire class of 26 pre-service teachers watched the classroom videos while sitting in groups of 3 or 4. After they watched each video clip, students answered questions from the TE randomly or engaged in brief reflections. Some took notes while the TE lectured each instructional strategy's critical elements. This pattern continued throughout the semesters.

For their case assignments, pre-service teachers were given a sheet with information on how to access the case assigned and a rubric to guide their studying and reportage. With this sheet, students reported in a survey that they experienced no issues accessing the cases. When asked how they individually studied a case, students reported that they spent about 45 minutes to two hours watching the videos and writing the report. According to the survey, more than half of them disregarded case materials other than the classroom videos. This concerned us as those materials would have provided them with sufficient contextual information. Some reported watching multiple video clips without stopping, while others reported pausing after each clip to take notes. It seemed clear that some students did not pay attention even to the classroom videos, as the sheer amount of time watching all the video clips would have taken them more than 30 minutes.

Challenges

Packed Curriculum

We encountered numerous challenges during the first iteration because of an already packed curriculum. The case integration was a rather “slow transition,” as the TE noted, but he acknowledged that adding new content into curricula would require trial-and-error and continuous reflection. During our initial design, we had to change the sequence of some activities to ensure that the curriculum did not overwhelm the TE and his pre-service teachers. It was unclear to me, however, *how* the TE would link everything together – the cases, textbooks, discussions, professional development, unit design, field experience, and, eventually, student teaching. Thinking back, I wonder in what ways we might have changed for the second iteration had I asked the TE to clarify his approach about this issue; further improvements or pushbacks? Judging by his reflection after the second iteration, it is possible that I could have encouraged the TE further to make the connections and receive a level of reflection from the students similar to that we had in the third iteration. I might have been too cautious, as it was our first time collaborating with each other and I was less confident about what I observed in his instruction.

Technology Management

Because the TE had only limited experience showing short video clips of historical or political documentaries, he struggled to navigate the web-based database and use the videos in class. As a result, he had time frequent management issues and was unable to conclude each implementation as he

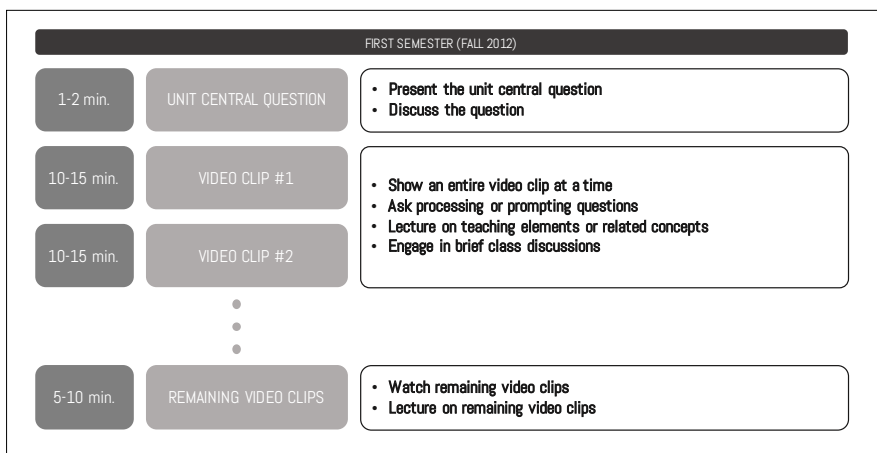


FIGURE 6. Sequence of a typical class implementation in the first semester.

planned. He also provided no debriefing about each case or proper closure of the whole case-based learning experience. At that time, I simply felt that the TE was unaccustomed to the new medium. However, after working with teacher educators for many years, I now believe that I might have neglected my role in assisting him with the new medium. The brief demonstration I provided and case information sheets I designed for the TE were insufficient, but I failed to confer with him before and during the implementations. In fact, the issue of instructional time emerged repeatedly throughout the project and the TE made adjustments to his instruction continuously to resolve it, while I failed to invest time to ensure his proficiency in using the database.

ID's Struggle

While we worked well as collaborators in most cases, there were some occasions in which I needed to step back and put aside my ideas to avoid conflicts. For example, the TE's disregard for the theoretical frameworks of the WPCD. As all authors agreed, incorporating those frameworks meant using the cases to their fullest potential by discussing parts of the cases linked directly to the frameworks. However, because the TE had his own curricular design model, he only took some elements from the two frameworks and disregarded the others. As a result, the TE often overlooked the importance of linking social studies content and value (*Persistent Issues in History*) with particular instructional strategies (*Problem-Based Historical Inquiry*) presented in the cases. Another example related to the TE's desire to keep the model lessons. I felt that some of those lessons could be replaced with the cases as they would provide both teacher's and student's perspectives. According to the survey results, not many pre-service teachers valued the model lessons as well.

Despite our shared value of socio-constructivism, it seemed to me that the TE led and dominated the case experience rather than allowing students to lead dialogues and create their own understanding of each case. I once suggested different strategies such as small group discussion to let

students lead case discussions; however, the TE kept leading even after he agreed on the need for different strategies. His reason was the lack of class time to employ other strategies, but I wondered what might have been different if he did not watch all those videos, shorten his lectures, and let students review the videos in small groups and discuss among themselves before discussing as a class.

It was difficult to pursue these issues with the TE as he was the course owner who made the final decisions and I also did not have sufficient experience to convince him further. The second author shared my concern as we believe that case-based learning is and should be inherently student-centered in order to generate greater learning outcomes. He reminded me, however, to be cautious in suggesting different ideas, as keeping a good relationship with the TE is critical. Without the relationship, the second author worried that we might not even have the chance to observe the TE's continuing use of the cases and gradually convince him to use different strategies.

Overall Evaluation

We viewed the first semester as a transitional period and the implementation result as acceptable enough to further integrate technology-enhanced cases into the course. Our evaluation focused on pre-service teachers' perceptions toward their experience and learning outcomes. According to the surveys and interviews, the majority of students perceived their experience as useful in that they were able to observe "real" teachers and classrooms. We recognized that they acquired different types of knowledge, even though it was limited to fewer types than we expected. We also noted that their engagement in reflection was not at the level that the TE expected; thus, our design required a series of modifications.

Problem Identification

There were several issues that the TE and I felt the need to address before the next iteration. Discussed next are some major issues that particularly influenced the design for the second iteration.

Issues with Learning

After completing the first case assignment, pre-service teachers reported their struggle learning *with* and *about* the cases. This was also recognizable in their assignment and class participation. Even though we observed several different types of learning outcomes as a result of case experiences, we detected limited learning growth and reflection in the second assignment. Although we observed reserved students participating during case discussions, we felt the need to increase the overall quality and quantity of participation, discussion, and reflection. In addition, specifically considering the learning outcomes, we had to find ways to

support those pre-service teachers who still struggled to close the gap between theory and practice.

Issues with Perception

One major issue was related to pre-service teachers' perceptions towards the cases. Several of them perceived the cases as "unreal" and the entire experience as "another chore" that was unhelpful and meaningless. We discussed several possible explanations, such as a lack of understanding *why* and *how* to engage in case-based learning, the gap between what they observed in the cases and field placements, and insufficient contextual information about the cases to facilitate understanding. We determined that if the TE had been more explicit regarding the purposes for having the cases in the course, their reactions might have differed.

Issues with Managing the Environment

Other issues we encountered were related to the TE's management of the technology and instructional time. He had difficulties logging into the web environment and controlling the video clips. This may have been related to the fact that the video size was difficult to control, as the clips were embedded within the Case Viewer in a fixed size. With respect to this issue, the fourth author and I discussed our lack of experience, particularly using videos for class discussions with a large number of students in a traditional classroom, as we both were more familiar with computer lab environments in which students work with the database individually. This was an oversight on our part, as we knew other teacher educators used the video clips for entire class discussions, but failed to address the needs in the initial database design. Time management issue also continued. The TE frequently rushed through the video clips and briefly talked about the content rather than allowing his students to further discuss what they observed. More importantly, he failed to implement any of the case materials other than the classroom videos, which resulted in the lack of contextual information to facilitate the learning process.

SECOND ITERATION

For the second iteration, the basic structure of the curriculum did not change significantly, but details related to the case experience were added and revised. As we had only nine pre-service teachers, we utilized this iteration to experiment with different features to improve the case experience for both the TE and the pre-service teachers.

Design Revisions

Our first design revisions focused strongly on providing scaffolding for pre-service teachers so that the complexity of each case can be well analyzed and interpreted. While we were bent on "plugging in" the cases for the first iteration, the TE seemed to find his own ways of "integrating" the cases

into the curriculum and “making connections” with different course components.

Weekly Meetings

We decided to have a meeting before and after class every week. We considered the meetings after class to be reflection sessions to reflect on the TE’s practice and discuss areas of improvement for the following weeks. This allowed him to immediately reflect upon the issues and make adjustments, and also, for me to discuss my questions or concerns.

Clear Objectives and Information Session

The TE first reiterated two main learning objectives, including getting students to: (a) *critique* (analyze and evaluate) teaching practices after watching the classroom videos; and (b) *reflect* on case teachers, cooperating teachers, and pre-service teachers’ own practices. We decided to include an information session to discuss the purposes and rationale for engaging in case-based learning, how to access the case database, and how to study *with* and *about* them. For this session, the TE made the decision to use the “Analogous Case Study: Washington’s Presidency” case from the second assignment. His rationale was to provide a scaffold for case-based learning and observe the growth of learning by comparing students’ current (week 5) and future learning outcomes (week 12). The session was scheduled for the class before the first assignment was assigned. We believed that this session could address the issues of limited learning outcomes and negative perceptions towards the experience.

Assignment Weighting

Along with the information session, we added more points to the second assignment (from 100 to 150 points) to encourage pre-service teachers to dedicate more attention to it. We expected them to recognize more details of teaching practice than in their initial encounter with the case during the information session and that they would reflect in-depth.

Reading Checks

An additional modification included adding reading check assignments to the curriculum. In discussing students’ struggle in bridging the gap between theory and practice, we concluded that they either did not properly read the course readings to build foundational knowledge or had difficulties in making connections between the readings and

FIGURE 7. Reading check (graphic organizer) to check pre-service teachers’ reading progress.

the cases. Therefore, the TE implemented a simple graphic organizer (see Figure 7) that required pre-service teachers to summarize the readings and provide examples from their field experiences on what they read. We considered this a form of formative assessment to monitor their progress and a scaffold to help their learning of theories and concepts.

Pre-service teachers were required to work on their reading checks and the TE collected five of them randomly throughout the semester. The TE believed that this would make them read the course materials even without monitoring their progress every week.

Learning Environment

To address the difficulties in viewing the details of classroom videos due to small frame size, we added a zoom-in and -out function to control the size of the video frame (see Figure 8). An additional adjustment involved changing the format of the video clips to increase accessibility in all web browsers.

Implementation

Sequence

The overall sequence of the case experience changed from the first iteration (see Figure 9). As planned, we gave an information session during week 5. Two of the class implementations took place before the second assignment, and the final implementation occurred after pre-service teachers submitted the second assignment.

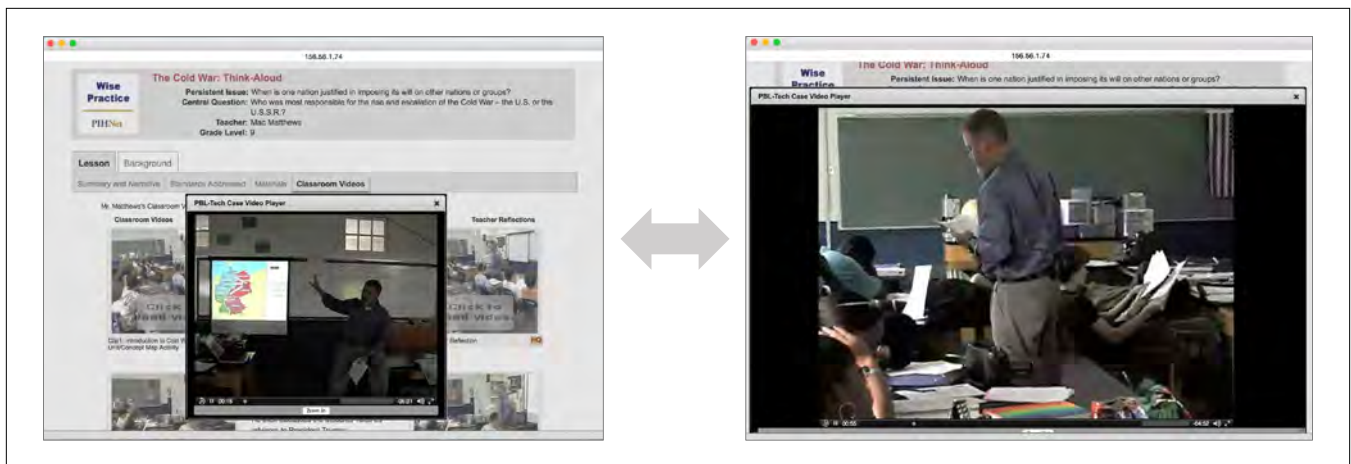


FIGURE 8. Newly added zoom-in and zoom-out function in Case Viewer.

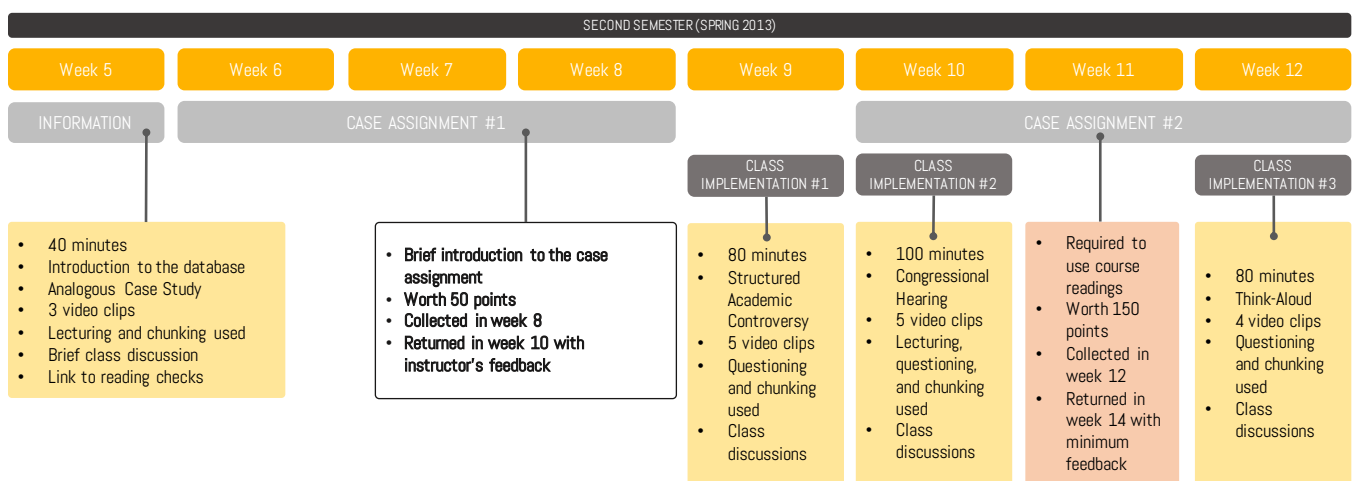


FIGURE 9. Sequence of case experience in the second semester.

Instruction

Unlike the first iteration, in which each class implementation had little connection to others, the TE strove to compare and contrast different cases so that pre-service teachers would develop more reasoning skills and understanding of contextual variables that could affect teaching and learning. During the final implementation, the TE discussed the overall case experience and encouraged critical reflection on field placements. Although the TE was still unable to show every video clip, his instruction became more detailed as he provided additional background information on the cases, used different case materials, and linked the case experience to other course activities (e.g., readings or unit design) and field-based experiences. Despite rushing through several clips at the end of every lesson, the TE managed to engage students in more discussions and critical reflection. Each implementation took between 40 and 100 minutes.

Strategies

The TE focused strongly on providing more scaffolds to engage pre-service teachers in discussions. He frequently used the Socratic method, playing the role of devil's advocate to further the discussions and challenge each student to think more deeply about the affordances and constraints of a particular instructional strategy. In showing the classroom videos, the TE also used a different technique. Compared to the first semester, he began to chunk each video clip into segments while viewing in class. He would pause every 15 to 30 seconds and ask questions to facilitate discussions. It was only when he had very little instructional time left that he showed an entire clip (between 3 to 5 minutes long) without pausing. However, the average number of clips shown in class did not increase significantly, even though more instructional time was spent on the cases compared to the previous iteration.

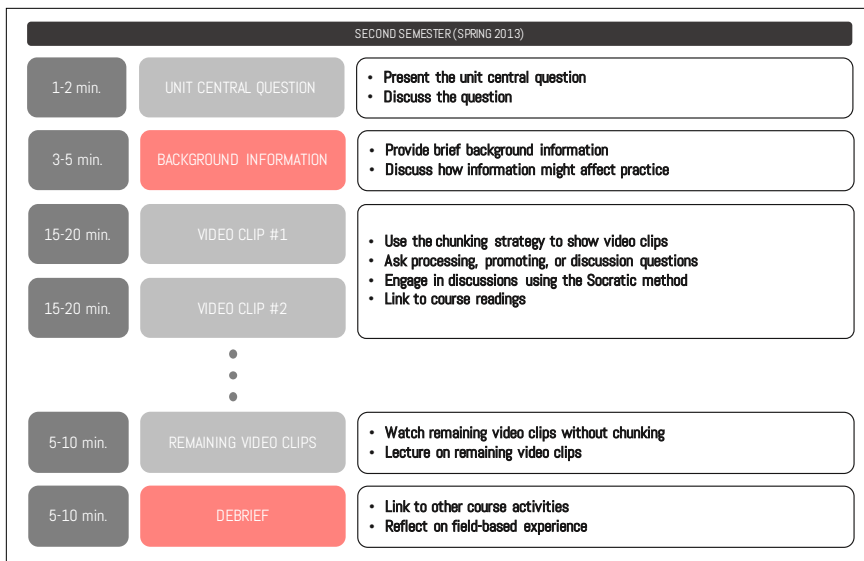


FIGURE 10. Sequence of a typical class implementation in the second semester.

Student Experience

Pre-service teachers' case experiences were somewhat different this semester, primarily because there were only nine of them in the class. In the first class that I observed, students put 3 to 4 tables together to make a large roundtable at which they sat as a whole group as the TE requested. Even though the TE still led the viewing of videos and some of the discussions, I often observed students taking the lead after several prompts from the TE and building on each other's ideas or reflecting on their field placement.

According to a survey, one of the notable differences was that all students spent more than an hour-and-a-half to complete their case reports. All of them reported the use of case materials other than the classroom videos; during a group reflection with me, some in particular praised the teacher reflection videos, which helped them understand the rationale behind instruction better than simply watching the classroom videos.

Challenges

TE's Struggle

Although there were fewer challenges compared to the first iteration, the TE still had difficulty linking the course elements to the case experience. He blamed himself several times for not discussing important concepts (e.g., scaffolding or grouping) related to the cases in the textbooks. He believed that he was the one who needed to assist in the process of making connections and I also believe that facilitation is the key to successful case-based learning. I wondered, however, how we could have designed the database so that it ensured those connections inherently in addition to the TE's efforts. The TE's struggle with the limited

instructional time also continued. For example, he shared his frustration frequently, indicating that he either had to rush through the videos or could not show all of them in class because of the lack of time. On several occasions, he asked the students to watch those clips and case materials remaining outside of class, which did not seem to occur. The TE said later that he did not expect the students to do extra work; thus, he believed that he needed to discuss as much as he could in class. When I suggested that he place those few remaining clips online and ask students to post brief comments, he worried that too much additional work might discourage them. Considering the packed curriculum and the possibility that the students might feel overwhelmed, I shared his concern and did not push any further.

ID's Struggle

My role as an instructional designer and collaborator began to shift to that of a listener and feedback provider during this iteration. As the TE got used to the cases and case database, he seemed confident about what he would do with the cases and asked fewer questions. Rather than asking how I perceived his ideas, the TE tended to inform me as to what he intended to do. It also seemed to me that he did not want to include further activities with the cases, as a typical case implementation took more than an hour and he would therefore not have the time to proceed with other activities.

After two semester-long observations, one of the assignments I perceived to be ineffective was the ambitious teaching presentation, which required students to present a text-based case. The level of engagement, however, was rather low compared to the amount of time spent on each presentation. When I suggested replacing the assignment with the cases, the TE was not particularly interested as he believed that the text-based cases were enough. Even though I shared few negative comments from the pre-service teachers, it proved insufficient to convince him.

Moreover, although pre-service teachers in this iteration occasionally led case discussions and further reflected on both the cases and field placement, the TE was still reluctant to use strategies other than the whole group discussion. When I shared my frustration with one of my fellow authors, he said that giving up power and letting students take the wheel is still difficult for him especially when he is anxious to teach as much as he can within a limited timeframe. His comment made me wonder whether I am the one anxious to push the TE towards what I believe may be effective, rather than

understanding his rationale and giving him the time to get used to the new medium gradually at his own pace.

Overall Evaluation

Based on pre-service teachers' responses and learning outcomes, as well as our personal perceptions, we viewed the second iteration as successful compared to the first iteration. The TE noted an improvement in both instruction and learning, and the value of increased scaffolding such as questions, reading checks, and video control techniques. With the exception of one student who had an overall performance issue in the course, all others generally expressed their appreciation of the case experience. We also agreed that pre-service teachers better applied what they learned from lectures and textbooks to critiquing the cases.

Problem Identification

During each weekly meeting in this iteration, the TE actively identified several instructional problems and immediately responded to them when possible. In addition, we discussed other issues after the semester for the new iteration. These included both performance and contextual issues as shown next.

Issues with Managing Video Clips

We recognized that pre-service teachers struggled to grasp the details of classroom video clips longer than two minutes. Thus, the TE quickly adjusted his instruction and played the same clip more than once – this time by chunking the clip into several segments. For the remaining clips, he continued to play entire segments without pausing. It was rather difficult for us to settle on a single technique. When shown an entire clip (four to five minutes), students had difficulties in reconstructing the details, even though they performed better in understanding the overall practice. In contrast, students reported difficulty grasping the “whole picture” of a case when the TE chunked the clips into several segments (typically between 15 to 30 seconds). However, their understanding of details was better in this situation.

Issues with Bridging Theory and Practice

We continued observing several pre-service teachers' struggle making connections between theory and practice. The TE was particularly disappointed as he believed that the inclusion of reading checks would address the issue. We also recognized that the links between the course readings and the cases made during the implementations were not as strong as we desired. The TE felt that he failed to provide sufficient explanations and examples of strategies or classroom management techniques shown in the cases. He also pointed out his lack of scaffolding during the learning process; to him, the cases do not teach themselves, but he

needed to play a key role in supporting critical discussions and reflections.

Issues with Critical Reflection

Pre-service teachers did engage in reflection during case implementations, but not to the extent we expected. In particular, some of them seemed to struggle with *evaluating* experienced teachers, as they reported their discomfort when asked to critique the case or cooperating teachers. We suspected this was because not all pre-service teachers had yet made the transition from students to teachers. As a result, developing a strategy to facilitate this transition became another focus area for our revisions.

Issues with Transfer

Finally, we reflected on a systemic (or structural) issue with which many teacher education programs struggle. The TE repeatedly discussed the weak connection between methods courses and field experiences that impedes the effective, mutual transfer of learning outcomes. First, pre-service teachers had no freedom to select field placements in which teachers utilized the instructional strategies advocated in the methods course. Some of them reported the challenge of observing solely teacher-centered instruction in the field. Second, the TE was unable to directly observe whether his case-based instruction was effective and meaningful for pre-service teachers in the field. Instead he could only speculate from their anecdotal reports or their field supervisors' comments.

THIRD ITERATION

For the third and final iteration, we had more time to reflect on the previous two iterations, as well as to finalize a new plan. In the final semester, we knew in advance that there would be 24 pre-service teachers enrolled in the course, and that we would lose at least one week for the Thanksgiving break.

Design Revisions

Further revisions were made for the last semester as the TE felt that he did not do well in teaching the details of instructional strategies and promoting reflective practice with the cases. At this point, except for assisting the TE during his reflection and reviewing his design revisions, my role in the redesign process was minimized so that I could objectively observe the case experiences. My decision to step back limited the type and amount of feedback that I provided, particularly with respect to the heavy curriculum and the TE's decision to focus to a great extent on discussions with the entire class. I provided feedback when requested, which may have hindered in-depth discussions the TE needed to make decisions for this iteration.

Needs and Goals Specified

We began the revision by clarifying our needs and goals for the final semester as follow:

- **INSTRUCTOR'S PREPARATION:** This included the TE's efforts to further explore case materials besides classroom videos before the start of the semester.
- **CURRICULUM SEQUENCING:** This included moving important concepts in teaching and learning to the earlier part of the course.
- **SCAFFOLDS:** This included having a point difference between the first and the second assignment, monitoring reading checks, reviewing the rubric with students, providing model lessons, and hosting an information session on case-based learning.
- **TIME MANAGEMENT:** This included reducing the time for announcements and discussion of irrelevant topics in class and efficiently managing the time for each course activity.
- **CONNECTIONS:** This included assisting students in understanding course readings in-depth (e.g., by providing examples or modeling classroom management), and taking time to help them apply what they read to what they observed in the cases or experienced in the field.
- **REFLECTIVE PRACTICE:** This included the discussion of reflective practice during the information session, continuous reminders and applications of the concept during class discussions, and assessment of their performance as reflective practitioners in class and case assignments.

Adding a Culminating Case

One of the most notable changes for the third semester was including an additional case at the end of all other implementations. As proper closure of the case experiences, the TE selected the case "Seminar Discussion: Civil Rights Movement" to engage pre-service teachers in the meaning-making process. His choice was based on the fact that

the case presents a teacher and a group of students who were highly experienced in discussion which could provide an opportunity to wrap up previous discussions.

Linking Course Content to the Cases

We focused on clarifying the topics the TE intended to link with the cases, as well as altering the curriculum sequence. The topics included: (a) instructional strategies, (b) classroom management, (c) reflective practice, (d) professional development, (e) learning theories, (f) methods of assessment, and (g) lesson/unit design. Since his basic sequencing strategy was to lay the groundwork for using the cases, the TE positioned the topics on learning theories and the principles of curriculum and instructional design at the beginning of the semester, plus those focusing on instructional strategies, classroom management, and assessment methods throughout the semester. However, the TE did not explicitly mention how and when he would discuss the topics of reflective practice and professional development.

Rethinking Instructional Strategies

The TE planned several strategies to create more effective instruction. By continuing the Socratic method, he planned to call on pre-service teachers who participate less in discussions. The TE also added a new plan to form small groups of two or four for different mini-activities to facilitate participation. By adding more points to both case assignments (i.e., 50 to 100 points, and 150 to 200 points), the TE kept the strategy of differentiating the points awarded to them. He also discussed the possibility of reading some parts of the rubric with students so that his expectations would be clear. However, we did not confirm this plan as he was concerned that too much emphasis on the rubric might hinder critical reflection. Finally, the TE intended to "stop, pause, and talk" for the classroom videos. In taking the notion of cognitive load into consideration, he believed that the chunking strategy would help students grasp details in teaching more effectively.

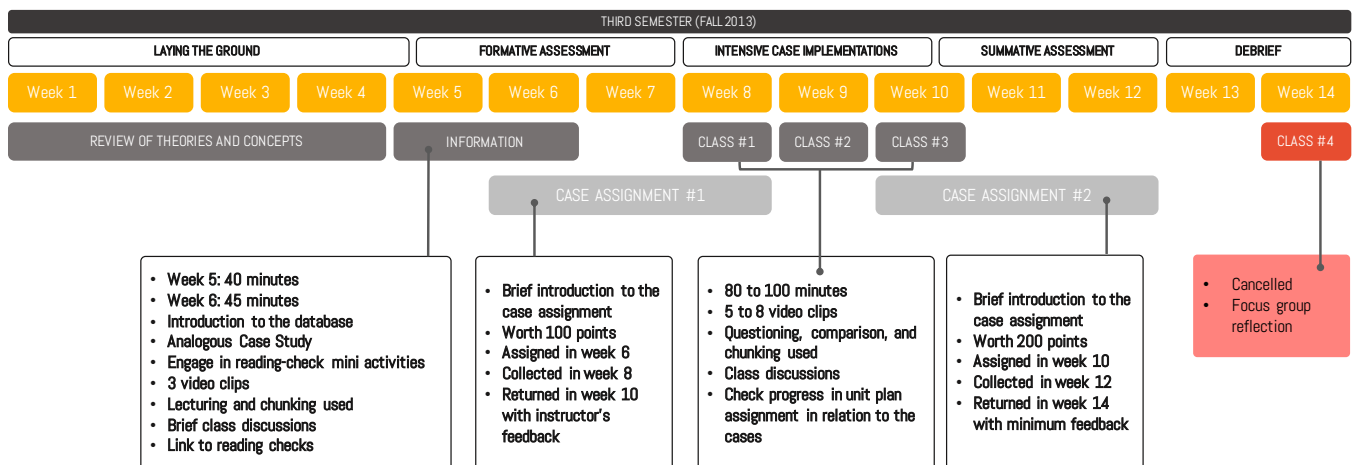


FIGURE 11. Sequence of case experience in the third semester.

Providing More Structure

The TE planned on having five different phases of the case experience in the final iteration: (a) laying the ground; (b) formative assessment; (c) intensive case studies; (d) summative assessment; and (e) debriefing. For the first phase, he planned to focus on reinforcing theories and concepts critical to reflecting on each case (e.g., learning theories, reflective practice, classroom management). The TE aimed for formative assessment in the second phase by using the same case from the second case assignment and by assigning the first case assignment, which would gauge pre-service teachers' current level of understanding. For the third phase, the TE kept the three cases that would engage pre-service teachers in continuous discussion and reflection. The fourth phase was an opportunity for summative assessment using the second case assignment and unit plan assignment. Finally, to further students' reflection, he planned a debriefing session that included an additional case implementation and focus group activity.

Instructional Materials

We decided to keep the reading checks' design the same for the third semester, while revising the other two materials, the rubric and information sheets. In order for the rubric to function better as a scaffold for case assignments, as well as to align better with the five instructional objectives, the TE reworded the descriptions. In the information sheets for students, the TE added a direct statement about using course materials: "Make sure to use the course textbooks and other references to support and justify your observation and arguments." By demanding this, he sought to better support pre-service teachers' ability to bridge the gap between theory and practice.

Implementation

Sequence

The overall sequence of case experience for this semester was similar to the second iteration, except for the information session and debriefing session (see Figure 11). Initially, we planned to have a single information session during week 5. However, the TE continued the session in week 6, as he was not satisfied with the first session in which he struggled with technology glitches and lost instructional time. The last case implementation was also cancelled before class because of unexpected issues with few students' field placement.

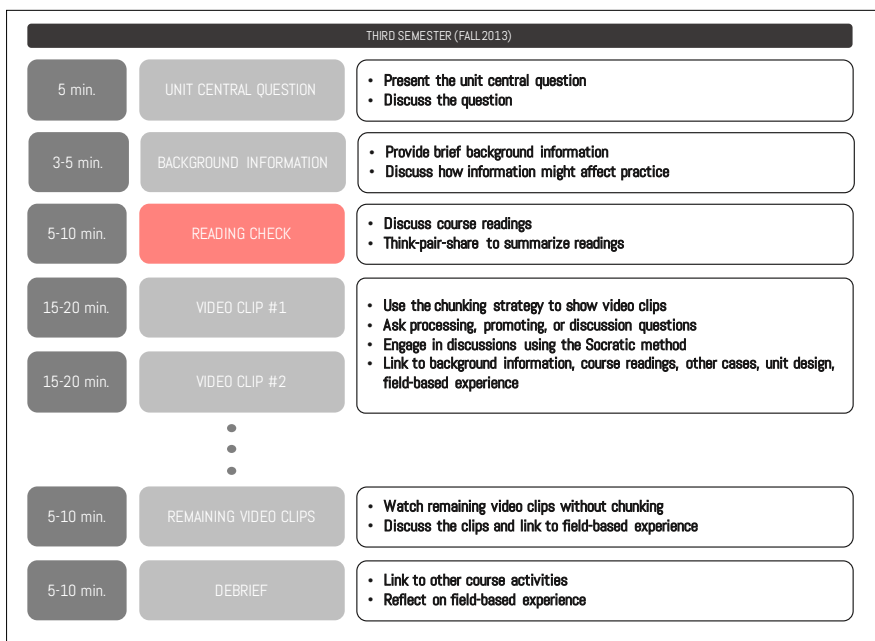


FIGURE 12. Sequence of a typical class implementation in the third semester.

Instruction

Despite some similarities from the second iteration, there were tangible improvements in instruction (see Figure 12). The time he spent on discussing each case's unit central question, background information, and course readings increased. To support the understanding of contextual variables that affect teaching practice, he provided more background information and reminded students to take this information into account when critiquing the cases.

While watching classroom videos, the TE reminded pre-service teachers about the course readings and how their unit plan might look when using similar strategies shown in the cases. One of the differences was that he asked them to compare and contrast every class that involved the cases, rather than focusing on two specific cases for comparison as in the second iteration. He made explicit connections by providing examples of scenes or orderings of instructional activities from each case. In addition, the TE focused on linking the case experience, other course components, and field-based experience to facilitate application and reflection. Class implementations took between 40 and 100 minutes.

Instructional Strategies

The TE employed similar strategies used in the previous semester, except for few small group activities that required pre-service teachers to work in groups and discuss different concepts, course readings, or particular situations related to the cases. The TE's method of showing the classroom videos did not change from the second semester, but he seemed more conscious of how he controlled each case artifact. He allocated more time for discussions while repeatedly

stopping and replaying the video clips. In a reflection session, he stated that he became comfortable with the technology, as well as with each case's content.

Student Experience

During this semester, the TE and I both agreed that pre-service teachers engaged in case discussions to a greater extent. When reflecting on the entire semester, we felt that his instructional structure, which included reflection and debriefing activities allowed students to reflect further on both the cases and field placement. However, I also felt that it did not change the fact that the TE led most class discussions. Students discussed reading checks in small groups on some occasions and only once watched a short video clip in small groups using their personal laptops and presented a unified answer about why the case teacher decided to have her students create posters for presentation.

However, I learned during focus groups with students that pre-service teachers valued small group discussions as much as whole class discussions. After the TE's recommendation to work in groups with the case assignments, several groups watched the classroom videos together and discussed the details of each case before writing individual reports. One group reported that they even proofread each other's work and provided feedback to strengthen arguments. Two groups also reported that while discussing the cases, they discussed how they might use the strategies shown in the cases in their own unit plan assignments. Those who worked in groups did not prefer one approach to another, but students expressed preference for a balanced mix of small-group and large-class discussions.

Continued Challenges

TE's Struggle

The time management issue continued in this semester, particularly because of the relatively large number of students. Even with more structured instruction, the TE encountered a greater number of questions and issues that distracted him from adhering to the instructional time he planned. In a reflection session, he commented that he knew this cohort would be a "handful," as another instructor had indicated that was what he would face. He said that he should have adjusted the curriculum accordingly. However, in retrospect, I also believe that I could have helped him navigate the heavy curriculum and the number of students better by offering him new ideas if I had engaged fully in reflections with him rather than keeping my distance. For example, when the TE presented his idea to include an additional case, the other authors and I welcomed the idea, as we wanted to observe more implementations. I simply thought that he would make the time to implement the new case by reducing the time spent on other activities. However, as the semester continued, I realized that there was too little time

to implement another case in the curriculum even without the unexpected issues that led the TE to discard the plan ultimately. If I had examined his new plan further, and had discussed the additional efforts needed for such a large group of students with him and the other authors, I wonder in what ways we might have changed the curriculum to address the students' potential needs or issues. The second author also wondered how the TE would have reacted had we suggested that he reduces the number of cases and focus only on several to promote in-depth discussions. In addition, the TE encountered some technological issues (e.g., with the media player or projector system) that hindered his case-based instruction and often forced him to rush through some video clips and case materials.

ID's Struggle

For this iteration, I expected at least one group activity such as small group analysis or think-pair-share for each case. However, the TE asked the students to discuss in groups for 5 minutes on a specific video clip only once. The TE cited the lack of instructional time and under-prepared pre-service teachers as the reason. In his mind, the whole class instruction with his guidance was a more efficient way to provide further details on the cases. It was rather difficult for me to agree with his perspective as more details do not necessarily mean more learning. His ideas also confused me because I did not perceive this cohort to be particularly under-prepared and he seemed to contradict his own belief in socio-constructivism. I wondered what could have been the outcomes if he let students take the lead. By leading discussions, the TE delivered the details of each case to novice teachers who might not catch every subtle nuance of experienced teachers' practice. However, his approach might also seem like imposing his ideas or beliefs about teaching without letting students make their own judgments about the practice.

Final Evaluation

Learning Outcomes

We concluded that the final iteration was most successful in meeting the goals of supporting pre-service teachers in learning instructional strategies and engaging in critical reflection. Their engagement during class discussions was better in quality and quantity than in the previous semesters. Students further reported that the cases encouraged them to consider different strategies, contextual variables, field-based experiences, and their own practice. We observed different types of learning outcomes and applications of related knowledge in their unit plan assignments. Their justifications for using (or not using) certain instructional strategies were supported with evidence and they generally demonstrated a better grasp of foundational concepts in teaching and learning.

FINAL REFLECTION

This design case describes our two-year-long journey of implementing case-based learning experiences in a teaching methods course. We concluded that our goal of supporting students' understanding of different instructional strategies and reflection of teaching practices was somewhat successful. In terms of increasing efficiency and effectiveness in modeling different instructional strategies, we also concluded that the designed experience was more than successful, compared to using the TE's modeling strategy alone. There are, however, several remaining thoughts that the TE and I shared after the third iteration, and that I reflected with other authors as writing up this case:

- **CRITIQUE VS. CRITICISM:** Some pre-service teachers reported their discomfort in evaluating experienced teachers and perceived *critiquing* as *criticizing*. Even after a discussion on the meaning of critique as a positive action that promotes improvement in teaching and learning, some of them still rejected those ideas. I wondered whether continuous conversations regarding the purposes and rationale for critiquing might have made any difference.
- **INSTRUCTIONAL TIME:** Simply watching all the videos in a single case takes more than 30 to 40 minutes in the WPCD even without viewing other case materials. If an instructor shows only several clips, then students may lose the overall sense of how the instruction was delivered. If shown too many, in-depth case discussions may be lost. Thus, the TE's judgment on which and how many clips to watch and what information to deliver becomes critical within a limited timeframe.
- **MAKING CONNECTIONS:** The amount of course content was also a challenge. Integrating the cases was integrating an entirely new experience that had different facets. Thus, the TE had to make efforts to link other course experiences to the case experiences, which took additional time. However, we still could not observe students' actual use of instructional strategies learned through the cases at their field placements.
- **FRAMEWORKS:** One of the authors questioned whether the TE was using the case database to its fullest extent and how we wanted teacher educators to use it. As noted, the cases were created based on two curricular and instructional frameworks, which the TE did not take into account. I did agree that learning experiences and even outcomes might have been different if the frameworks were explained and applied. However, as other authors noted, there were other types of learning outcomes that could prove equally valuable without the frameworks.
- **TEACHER OR STUDENT-CENTERED:** I questioned whether case-based learning experiences might have been better received and more effective if small group activities and the final debriefing session had

been implemented. Even with our shared belief in socio-constructivism, in reality, the case experience was not as student-centered as it could have been. With a typical large number of students in a teaching methods course in the first and third semester, perhaps the TE could have identified and examined ways to increase the level of interactions and discussions. Reconsidering the case assignments as group work or using the same case for multiple times as both literature (Spiro, Collins, & Ramchandran, 2007) and the pre-service teachers suggested can be a way to explore.

- **UNBALANCED COLLABORATION:** I often struggled to convey or push my design ideas during the project. I had to find strategies to convince the TE such as providing evidence of student perceptions, learning outcomes, or research findings to support my design. Thus, my constant collection and analysis of data for my evaluation and research project perhaps made some difference. However, although this may sound contradictory to what we noted as "unbalanced collaboration," as I continue to reflect on these two years, I also believe that I could have been more patient with the TE and less eager to push my own ideas. It was not that the TE was uncooperative; he worked with me for two years and hoped to continue our collaboration. As my fellow authors noted, I might have been too anxious because I had my own beliefs about how teaching should be conducted with cases.
- **DIFFERENT EMPHASES AND INSECURITIES:** Although we shared the same beliefs about socio-constructivism, the TE's focus on case-based instruction and mine differed. It also is possible that the reality that he experienced as an instructor differed from the way I perceived it as an outsider, which indicates that I could have been more attentive to his rationale and struggles. In fact, when the TE decided not to use the two WPCD frameworks, the third author and I were somewhat disappointed, as we believed that incorporating those ideas would provide depth to the case discussions. However, as the second author noted, perhaps we were hasty thinking about the way the cases should be used, when there might be many different ways in which they could be valuable, particularly depending on diverse teaching and learning contexts. I also wondered if my fear of harming our relationship caused me to compromise. A fellow author who had more experience collaborating with teacher educators also advised me a few times not to overstep, as finding a reliable collaborator and maintaining that relationship is not easy. The TE often showed insecurity about his students as well, feeling less confident that they could take the lead in their learning process. My questions throughout the entire project had always been centered on whether the learning experiences and outcomes might have been different if students took the wheel.

Looking back, it literally took us two years to integrate the classroom cases into the existing curriculum. As the authors learned from previous experiences, not many teacher educators fully utilized the cases in methods courses or used them every semester. It takes time and effort to integrate a new medium as well as patience and maintenance of a trusting relationship to continue the collaborative efforts. To build and maintain a relationship, continuous conversations with the TE and solid evidence of student outcomes were critical. Sometimes I pulled back too much as I did not want the TE to feel criticized or invaded, but I also realized that finding the right timing and amount of feedback provided to him was equally important in maintaining our project and relationship. In addition, although this may sound like a cliché to many designers, we feel it is necessary to reemphasize the importance of understanding the teaching and learning context in which a new medium may be used, particularly by reflecting on the way we failed to grasp fully the context's complexity and the TE's struggles during the three iterations.

Through this design case, we recognized that in order for the case experience to be truly meaningful there needs to be a significant degree of connection to other course components including field-based experiences. This means that various key players in the teacher education program and the field may communicate and negotiate the possibility of expanding the use of technology-enhanced cases to bridge the gap between methods courses and field experiences. We also need to explore diverse case-based learning approaches that may speak to different contexts. To do so, we may establish more partnerships to design K-12 classroom cases and integrate technology-enhanced case experiences within teacher education programs to eventually promote knowledge transfer from teacher education to K-12 classrooms.

ACKNOWLEDGEMENT

We would like to thank Elizabeth Boling and Keith C. Barton for the support of this project and invaluable feedback on the design and writing process. This article would not have been possible without their encouragement.

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