Evidence-based Development of an Undergraduate Disaster Volunteerism Course for English Learners

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The IAFOR International Conference on Education – Hawaii 2018
Official Conference Proceedings

Abstract
Disaster management is a field of increasing importance as global climate change increasingly impacts our world. Students can, and often do, play important roles in disaster response. Following the 2011 Eastern Japan Great Earthquake and Fukushima nuclear plant disasters many students became involved in a variety of disaster response activities. These activities benefited the disaster response while also having a lasting impact on those students. By developing a course in disaster volunteerism, the students can be better prepared to contribute to disaster response and recovery. This paper addresses the use of research in developing the curriculum and content of the course. It is important to begin with the evidence. Understanding the roles that are necessary during disaster response and recovery is essential. Finding specific research on these roles, their impact on the response or recovery, and the impact on the volunteer is fundamental. The experience of a fundraiser is different from that of a medical first-responder, interpreter, or researcher. All of these roles are necessary, and it is important to do one's best to incorporate a variety of stories for students to have a choice. It then follows through and explains decisions made during the syllabus development process. This must begin with the goals of the class, and then how those goals are incorporated into the syllabus. Finally, the presentation will explain implementation of this syllabus starting with needs assessment.

Keywords: evidence-based pedagogy, content and language integrated learning (CLIL), English as a foreign language (EFL), disaster management, disaster volunteerism

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Introduction

Teaching in the modern classroom requires that teachers maintain their knowledge and expertise in both pedagogy and their subject matter. In addition, each class has a unique context. In fact, due to a lack of applicable research, teachers often have to serve a dual role as researchers to meet their students' needs (Rosen, Turtletaug, DeLouise, & Drake, 2015). This is nothing new, teaching has always involved innovation. However, it is an important basis from which to begin an understanding of formalizing the process towards evidence-based curriculum design.

In particular, the self-reliance developed by some teachers can interfere with the utilization of a broader evidence base. There is a large body of work in the field of pedagogy in general, as well as within specific fields. The failure or success of language acquisition programs can be traced to the degree to which evidence-based pedagogy is used (Cummins, 2014). In other words, teachers need to rely on the evidence to be successful. Some of the more specific evidence needs to be gathered by the teacher as a teacher/researcher, however some of the evidence is already published. It is the ability of the teacher to utilize a combination of both that can lead to successful curriculum development.

In order to design an evidence-based approach to curriculum design, the researcher utilized models from research-based policy development in the health sciences. The reason for this choice involved familiarity with those models and their history of implementation at different levels within the field. In particular, a five step approach: developing answerable questions, seeking available research, critically examining the research, applying the research, and evaluating the results (Brownson, Baker, Deshpande, & Gillespie, 2003, pp. 5-6); seemed to be the best basis for developing evidence-based curriculum design. This system, however, was not sufficient for the needs of developing a full curriculum. In particular, the second through fourth steps had to be repeated multiple times for three stages of the curriculum-development process. The first cycle of seeking, examining, and applying research begins with developing the structure of the course. This involves the development of course goals and selection of pedagogy. The second cycle involves the development of materials for the course. It is important to select materials that fit the course goals and pedagogical framework, but it is also important to scale those materials so that they match the level of the class. The third cycle addresses assessment. Assessment must fit within the structure of the course while also reflecting best practices understood through research. This led to a model of evidence-based curriculum design which followed the broad structure of research-based policy design found in the health sciences, but which was fine-tuned for curriculum design (figure 1).

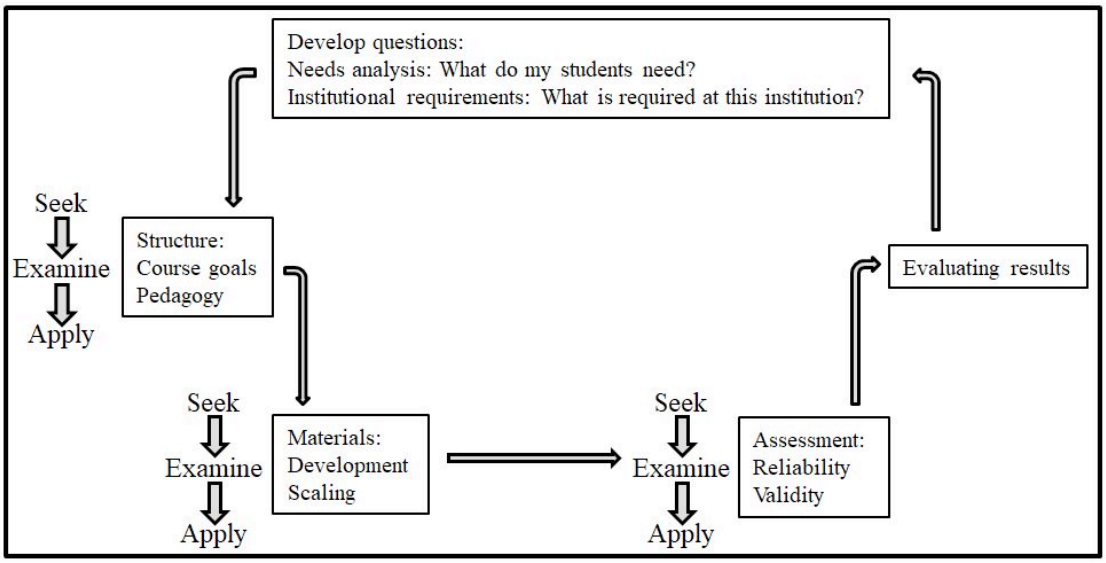

Figure 1: Evidence-based curriculum development cycle

Develop questions

The first stage of evidence-based curriculum design is to examine the problems that exist and use them to derive answerable questions. The primary question which drives curriculum development is: what do my students need? Answering this question involves understanding the students that will be in the class and how the class falls into a broader context of the students' education. It is the primary goal of educators to answer this question effectively. There are, however, constraints that are outside the scope that an individual teacher can control. There are specific limitations on time and resources as well as political, institutional, and cultural limitations (Artiles et al., 2011). Thus there is a second question that always follows the first: what is required at this institution? This is partially linked to the first question, understanding the class in the broader context of the whole, but often involves unrelated minutiae and bureaucratic necessities.

Answering these questions is often closely tied to the cultural context within which the course exists. It is important to adapt practices to the specific cultural context (Pham & Renshaw, 2015). This requires an understanding of the cultural background from which students have developed. Understanding culture and accepting culture, however, are not the same. It is important that students develop the ability to critically assess their place in history and culture (Freire, 1972). However, it is also incumbent on teachers to understand how to maneuver within the culture and develop an environment conducive to students that are part of the broader culture, while being inclusive of those from other cultural backgrounds.

Developing these questions within the context of a culture lays the foundation for evidence-based curriculum development. In fact, the success of language instruction can be linked to both evidence and culture being considered in the development and implantation of the course (Orosco & Abdulrahim, 2017). This paper primarily focuses on the evidence-related aspects of course development, however, it is essential to make mention of the central role cultural understanding played in the specific decisions made within the curriculum development.

In my specific teaching context, I based my understanding of student level on average TOEFL scores provided by the university. In addition, there was information about similar courses to the course I was developing. This, however, left questions about the structure of the course, development of materials, and assessments. In particular, there were important questions about balancing of content and language within a content-focused language course.

Structure

In approaching the question of how to organize the class, it was important to examine the research. For the type of class that was being designed, the tendency is towards content-focused language teaching, which has a variety of choices. There is also the possibility of task-based learning or other forms that were less content-centered. However, content and language integrated learning, CLIL, and immersion programs tend to work better than general language coursework (Cummins, 2014). Because I was not in an institutional setting that was conducive to developing an immersion program, CLIL was the optimal alternative. In addition, CLIL is an exceptional tool at creating an interconnection between linguistic and extralinguistic goals (Fodor & Lugossy, 2016). This meant that it was the best approach to addressing a content-focused language class because it could deal with the needs of students in developing comprehension in both language and content.

In order to develop the course it was important to select a topic that was engaging. This is because, cognitive content engagement theory suggests that the key to motivation and language acquisition is engagement with the content (McLaughlin et al., 2005). It was also important that the topic was separate from other topics covered. The topic I selected was disaster volunteerism because it is a recurring topic in modern Japanese society, and likely to increase in prominence as the effects of global climate change become more pronounced. Furthermore, the class was to be taught in the School of Policy Studies, thus the topic was well aligned with the students' other coursework.

Once the broad approach and the topic were selected, but before the materials were developed, it was important to select a framework for the course. Project-based learning (PBL) leads to improved learner motivation in students (Baş & Beyhab, 2017). As such, a PBL approach that fit the subject matter and the broad alignment with CLIL seemed to be the most appropriate path towards developing the materials.

It is important to note that there was some influence in the decision-making process by the teacher's preference as well as research that is not cited in this article. However, in the literature of evidence-based health policy that clinical experience is considered a viable and important form of data to be incorporated into the decision making process. As such, it is appropriate for teachers to utilize some degree of personal experience in the decision making process so long as that experience is subject to critical assessment and is not in opposition to the existing literature.

Materials

While PBL broadly fit the course, it was essential to organize the course in a manner that allowed students with less of an understanding of disaster volunteerism to engage with the materials. Therefore I divided the course into three sections. The first section supplied background information. This provided a foundation upon which students could develop their projects. The next section was the research section. In this section students selected a topic and did internet research for articles related to their topic. Finally, students would present their data to the class in the form of presentations and a final paper.

In the first section, several readings were included. The texts were simplified readings based on the researcher's dissertation (Gay, 2015). Four texts were developed to meet the needs of the students. The texts were divided into two groups, theoretical and practical. Because the theoretical requires more processing time, theoretical texts were assigned as homework with a comprehension-based activity to help students prepare for in-class critical thinking exercises. The two theories that were focused on were systems theory, which is fundamental in understanding disaster management and disaster volunteerism, and utilitarianism, which helps students understand ethics in a well-developed and practical framework. The practical texts were handled in class. The first of these was about the disaster cycle. The disaster cycle is the practical framework around which disaster management activities are defined. The other practical text was a set of simplified testimonies based on data from the researcher's dissertation. These testimonials were designed to address a variety of volunteer activities engaged in by students during the Fukushima nuclear disaster response. These types of testimonials were decided on in order to give a broad range of examples for students to develop on for their own research while also being relatable to mainly Japanese students, many of whom had been in Japan during the Fukushima nuclear disaster.

In preparing the readings, there was another issue of concern. There is a constant friction between the use of extensive and intensive reading. There is also much scholarship on both sides of the issue placing the two in equipoise for many situations. However, while extensive reading is often preferred, in certain contexts intensive reading is the better approach (Park, 2017). Specifically, intensive reading is better for lower level students developing reading comprehension. In this case, while the students can be seen as intermediate to upper-intermediate level learners, their comprehension related to this specific topic area can be considered lower level. As such, the researcher decided to utilize intensive reading for the background portion of the class. Furthermore, while extensive reading is often cited as a strong activity for the development of vocabulary, the amount of time required would not be viable in this specific learning context.

With that in mind, there was a need to tailor the texts to be as effective as possible for the specific context of the class. Comprehensibility is important for the accessibility of the text (Nation, 2015). As such, 95% coverage of the first 2,000 word levels and the academic word list was appropriate. An online tool, lextutor.ca, was used to assess the coverage. The texts were adjusted to decrease the number of non-essential words outside of the coverage level. For words that were essential for explaining disaster

volunteerism that were outside the preferred coverage range, definitions were provided in the text to improve comprehension.

The second step was to develop a system to support students finding and assessing articles for their final presentation and paper. There is little research on supporting student research in EFL, however the researcher was able to utilize personal experience from programs that had incorporated some degree of student research as well as classes the researcher had developed in the past that utilized similar activities. The researcher chose to use a secondary sources method wherein students used Wikipedia to locate viable sources before locating the original sources. In addition, the researcher required students to find sources that had a named author, a date of publication, and a title. There was some discussion of critical assessment of the validity of articles, but much of that aspect was supported in writing classes which students were taking concurrently with the class the researcher had developed.

The final section involved student presentations and student papers. There is a growing body of research on timed PowerPoint presentations, in particular the Pechakucha format. This format is especially useful in large classes (Shiobara, 2015). With the largest of the classes containing 30 students, short timed PowerPoint presentations were the best option available. The research has also found through experience that students doing presentations wherein each slide is timed and up for less than 20 seconds tend to practice more than for a non-timed or longer slide duration PowerPoint presentation. The format of the presentations was designed to reflect in-class activities related to the internet research. Students would provide a title slide, an overview slide, three sets of article summary and synthesis slides, a summary slide, and a sources slide. This resulted in a ten slide format. In order to allow sufficient time between presenters, 30 seconds, the time of each slide was set at 15 seconds. All slides were due a week prior to the presentation to give the researcher sufficient time to combine all the presentations into a single timed presentation. The presentation was designed to begin when the class began and give students 30 seconds to make it to the front of the class in order to present.

The final paper followed much the same format and reflected the style used in the writing classes that students were required to take. This was one area where the researcher had to follow institutional guidelines rather than evaluating research and developing a system that was tailored for the specific class. There are always areas where there need to be a balance between consistency between classes and optimization for specific classes. Fortunately, the researcher's institution has a well-designed and implemented writing problem that was sufficient for the purposes of this course. The specifics of the paper required students to utilize skills such as summarization and synthesis of research in order to create a coherent argument for a specific type of volunteer work during one stage of the disaster cycle.

Assessments

Most institutions require some form of assessment. The primary purpose of assessment in the EFL setting is to provide feedback to students (Cheng, Rogers, & Hu, 2004). This, however, leaves a plethora of viable solutions. The context of the course would therefore have to guide the appropriate form of assessments. Task-based assessment allows teachers to capture both the comprehension of content and

the use of language (Byrnes, 2002). This is a good fit for a CLIL course. Furthermore, task-based assessment allows a better assessment of how students actually use the language (Norris, 2016). Thus task-based assessments provided a solution that was viable for dual-purpose assessment and allowed for the assessment of students actual ability.

There were, however, institutional norms to consider when developing the complete assessment framework. The first institutional norm was the use of a participation grade. Every class in the program is required assess participation and assign five to ten percent of the final grade based on that participation score. The other institutional norm is that the remainder of the grade be balanced between major assignments or tests and homework. Thus there was a need to have types of homework that fit the task-based assessment paradigm but also fit into these two separate categories.

The primary form of homework assessment involved writing responses to readings. Task-based assessment needs to be communicative and allow a degree of ambiguity in assessment (Byrnes, 2002). As such, the responses were not required to fit a specified form; however they needed to communicate that the students had comprehended the readings. For the first section, the students responded to the theoretical texts that were assigned as homework. This served a dual purpose. First, it forced students to process the texts, furthermore it provided a format for the researcher to give feedback to help students understand the degree to which they had comprehended the texts. In the second section, the students did a similar activity with internet articles that they had found. As the researcher could not provide personalized questions for each article, the students instead had to summarize the articles and provide a synthesis between their article and their broader topic. This also supported the PBL goal of developing towards the final project.

For the major assessments the researcher developed three assessments. The first set of assessments was graded discussions. These discussions followed the format of other graded discussions in the speaking-focused classes the students were required to take. The assessment was modified, however, to allow for a portion of the assessment to be based on content rather than language. These assessments also served as transitions between sections of the syllabus and allowed students to consolidate their knowledge before moving to the next section. The final two assessments were the final projects, the presentation and paper. These assessments were similarly linked to institutional standards with adjustments made to allow the incorporation of content-focused grading.

Evaluating results

The researcher utilized a variety of methods for gathering data on the results. The first set of data was based on teacher notes following each class. In addition, students were encouraged to express their opinions on the course contents and assessments. Many students provided valuable positive and negative feedback that was included in the assessment. Next, performance on assessments was evaluated. Finally, students provided feedback in an end of semester anonymous evaluation form. All of this data was collected and assessed for the further development of the course.

After the first implementation of the course, it became clear that addressing key vocabulary explicitly would improve comprehensibility of the text. This assertion was triangulated between teacher notes and student feedback. In addition, student feedback showed that many students felt the texts could have been easier (figure 2).

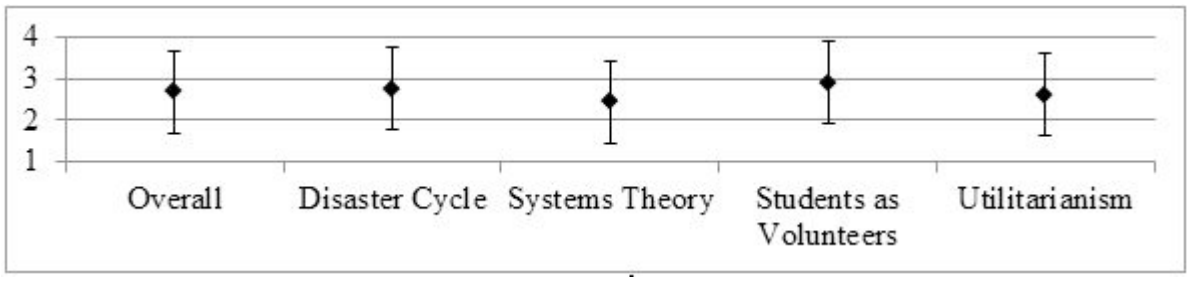

Figure 2: Text difficulty (4 is easy, 1 is difficult)

However, the students tended to find the texts useful (figure 3). There is a clear difference between the theoretical and practical texts, with the practical texts being considered easier and more useful. Unfortunately, because there is no assessment of practical text comprehension, it is not currently possible to assess whether the student perceptions match the learning outcomes.

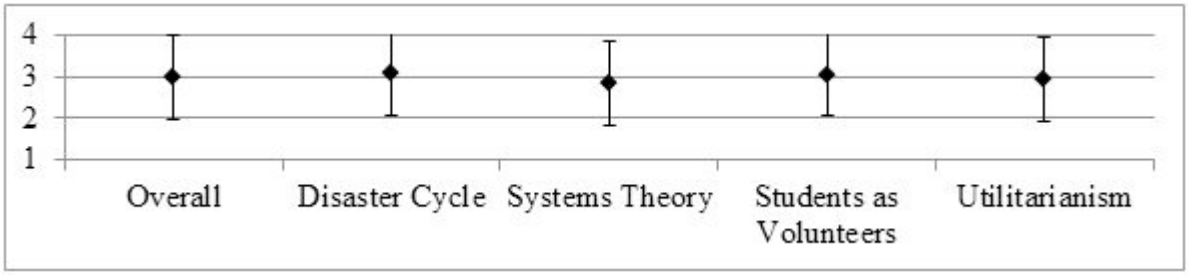

Figure 3: Text usefulness

The overall analysis of the assessments found that there were few issues with the assessments, and students found the assessments useful based on their feedback and end of semester evaluations. There were some issues with the final essay, in particular the task-based assessment approach allowed too much variability and not enough scaffolding for some students.

Conclusions

Findings

In education research, there is a need to move from the theoretical to the applied (Zapp & Powell, 2017). For this to happen, however, there need to be institutional mechanisms to apply that research to the classroom. The development of this course often required the researcher to assess the best manner to apply evidence-based practices within institutional constraints. While there was reasonable access to research, time constraints often limited the practicality of basing the curriculum development on research.

On the other hand, the researcher found that the first implementation of the curriculum went smoothly with relatively few issues. The further development of the

course was also made easier by documentation that was ongoing throughout the course. The proposed evidence-based curriculum development cycle was relatively easy to incorporate into curriculum development practices, and the student response was largely positive. This suggests that the broader implementation of this cycle as a form of best practices may be viewed as one way to improve pedagogy in the field of ELT.

Implications

The specific implications for this course are that there will be greater scaffolding of vocabulary and essay structure. The researcher is also continuing to research into applicable data on manners in which to improve the implementation of the presentation and the essay assignments. However, the broad structure of the course was sound, and that is largely the result of the research that went into developing the course.

For the field of ELT, this may have broader implications. While this paper outlines the structure and successful implantation of research-based curriculum development (figure 1), it is still one example. It is important that this methodology be critically assessed and implemented by others to ascertain the full implications of this system. If others are able to demonstrate similar results, this will demonstrate the necessary step from theoretical research results to real-life applications. That was the broad goal at the implementation of this research, and it continues to be an important goal for the better alignment between pedagogical research and practical pedagogy.

In terms of institutions, this also has implications. Institutions may need to recognize the amount of time necessary for developing curriculums. Beyond this, institutions may need to assess specific policies and determine if the policies in place limit the ability of teachers to utilize best practices. This is an impact that will require case-by-case assessments of a broad range of policies. However, those assessments and realignments may lead to better learning outcomes, which should be the primary goal of educational institutes.

Limitations

This research was done for the development of a specific course in a specific institution. While the methods may be transferable, many of the findings will remain limited. Furthermore, some of the student feedback could not be triangulated with assessments. In particular, the low scores of the systems theory text may be the result of difficulty of some students to understand theories and their implications, rather than difficulty with the language or lack of applicability.

Final comments

This development of this course through this approach provided the researcher with an opportunity to examine the difficulties and efficacy of this approach. This approach did require a greater amount of time for its initial development than courses that the researcher has developed without the same degree of research focus. On the other hand, there are fewer adjustments that are needed for improving the course for its second run. In addition, some of the research that went into the courses development

may be applicable for the development of future courses. As such, the utilization of this model, if its success can be replicated, may be the essential next step for the future of ELT.

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