



4-27-2020

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Recommended APA Citation

Barker, J. L., & Misawa, M. (2020). Redesigning a Course Using Action Research to Renovate an Undergraduate Curriculum in Architecture. *The Qualitative Report*, 25(4), 1091-1106. Retrieved from <https://nsuworks.nova.edu/tqr/vol25/iss4/15>

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Abstract

Architectural education is a time-intensive endeavor, typically resulting in a high number of student dropouts. In an effort to address better matriculation, faculty in an architecture and interior design program instituted course redesigns for an introductory lecture course within the undergraduate curriculum over the course of two academic years. This resulted in significant changes to the course structure and the course content, as well as to adjacent courses within the first-year curriculum. Through the implementation of the course redesigns, researchers realized that the process of redesign resembles the process of action research. The purpose of this article is to demonstrate how action research can apply to course redesign in higher education. The research questions that guided this study were: (1) How is action research applied to redesign an architecture and interior design program? and (2) What does course redesign as action research look like within a course setting in higher education? This article strives to make clear the connection between course redesign and action research by organizing the course redesigns into an integrated action research model. The implications and discussion based on the research findings will also be provided for applying action research to redesign courses in higher education.

Keywords

: Course Redesign, Action Research, Higher Education, Curriculum Development, Architectural Education

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Redesigning a Course Using Action Research to Renovate an Undergraduate Curriculum in Architecture

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Architectural education is a time-intensive endeavor, typically resulting in a high number of student dropouts. In an effort to address better matriculation, faculty in an architecture and interior design program instituted course redesigns for an introductory lecture course within the undergraduate curriculum over the course of two academic years. This resulted in significant changes to the course structure and the course content, as well as to adjacent courses within the first-year curriculum. Through the implementation of the course redesigns, researchers realized that the process of redesign resembles the process of action research. The purpose of this article is to demonstrate how action research can apply to course redesign in higher education. The research questions that guided this study were: (1) How is action research applied to redesign an architecture and interior design program? and (2) What does course redesign as action research look like within a course setting in higher education? This article strives to make clear the connection between course redesign and action research by organizing the course redesigns into an integrated action research model. The implications and discussion based on the research findings will also be provided for applying action research to redesign courses in higher education. Keywords: Course Redesign, Action Research, Higher Education, Curriculum Development, Architectural Education

In their journal article, Barham and Prosser (1985) discussed the importance of embedding extended redesign into the course review process for higher education course evaluation, where course review has the specific purpose of course improvement. Having performed a number of course reviews, Barham and Prosser (1985) articulated trouble with the terms “review” and “evaluation,” finding instead that the process of course review “encompassed a continuous redesign of the course” (p. 298). Placing a focus on redesign, the authors presented a process for describing, implementing, and understanding course review as redesign. Describing the process as gradual and flexible, and involving the participation of a critical and reflexive community, the authors evoked components of their Australian contemporaries’ work in critical inquiry and action research in education (Carr & Kemmis, 1986; Kemmis & McTaggart, 1988; Zuber-Skerritt, 1992).

Allowing the explication by Barham and Prosser (1985) to serve as a foundational understanding for course redesign in higher education, this article presents the implementation of a course redesign fellowship over two years in first-year undergraduate architecture and design courses at a university in the southern region of the United States. For the faculty involved in the redesign process, the pursuit and implementation of the course redesigns over the two years was significant to supporting larger efforts for retention that also responded to efforts for professional accreditation. Faculty and administrators for the design programs

acknowledged a growing concern for the retention of first year architecture and interior design students from the fall into the spring semester and from the first into the second year of the programs. The recent inclusion of the interior design program was one considered factor as faculty worked to combine the two programs under a shared first-year curriculum. In the integration of course content and material, faculty determined that courses within the first semester contained too many overlapping assignments, prompting an evaluation of multiple courses and their respective components.

A call for course redesign proposals administered through the university e-mail system prompted faculty to apply for a course redesign for the introductory lecture course to investigate how to change course content. Out of necessity, an introductory studio course was also redesigned. The architecture program was fortunate to be awarded for the introductory lecture course. Observations of that course redesign prompted the same faculty to reapply for the fellowship for the same course the next year. The second fellowship was awarded, and faculty implemented changes in the summer and fall sessions of the lecture and studio courses.

What followed from the actual execution of the redesigns was the acknowledgement of redesign as an important research tool. That is, that the continuous reflective exercise of redesign prompted numerous observations and conversations about the ability of the curriculum and coursework to adapt to faculty and student needs as they concerned successful student learning outcomes. This acknowledgement prompted the researchers to consider the link between course redesign and action research. While the data presented concern the functioning of those classes (the introductory lecture course and the introductory studio course), the purpose of this article is to demonstrate how action research can apply to course redesign in higher education by addressing the following two research questions: (1) How can course redesign in higher education be understood as action research? And (2) What does course redesign as action research look like within a course setting in higher education?

The following sections will address the relevant literature on the research topic including course redesign, action research, and their intersection. In addition, the methodology and findings of the study will be provided.

Review of the Literature

The link between course redesign and action research has not gone unnoticed by other scholars across various disciplines (Dymond et al., 2006; Hubball & Burt, 2004; Kenney & Newcombe, 2011; Ragland, 2008). However, the connection is typically dependent on action research as the methodology used in the research study. In this article, course redesign and action research will be independently outlined and then restructured to formally acknowledge course redesign as action research. Through this process, course redesign will be given the rigor of steps associated with action research: plan, act, observe, and reflect (Zuber-Skerritt, 1992).

Course Redesign

The presentation of literature on course redesign includes descriptions of two major redesign efforts: 1) national redesign programs from The National Center for Academic Transformation (NCAT) and 2) a university-wide program from the University of North Texas known as the Next Generation Course Redesign Project (NGen). Information gathered from these national exemplars, as well as from international articles about curricular transformation (Barham & Prosser, 1985; Nicol & Owen, 2009), provides keys for understanding and implementing course redesigns.

Defining course redesign. Before introducing course redesign examples, it is necessary to gain a solid definition for course redesign. In their presentation of a course redesign for an introductory psychology course, Drab-Hudson et al. (2012) offered that course redesign is transformative, that it incorporates “major reconstruction of an academic course or series of courses” which includes “tearing down the traditional course and the faculty assumptions that support that structure” while “creating scaffolding on which to build an entirely new educational experience.” In this way, “the process of course redesign is both intellectual and emotional” (p. 147). Drab-Hudson et al. (2012) carefully clarified that course redesign cannot be reduced to simple adjustments of assignments, updates based on a new textbook, or the inclusion of instructional technologies.

The last component, that course redesign involves both educational and emotional elements, is highly significant as it is part of action research (Reason & Bradbury, 2001) and critical inquiry (Carr & Kemmis, 1986). A capacity for the course and the participants in the redesign to grow and change is an integral part of the process. It is an outcome of practice as inquiry (Newman, 2000), or teacher integrated research—which course redesign necessarily is (Barham & Prosser, 1985; Ragland, 2008; Schratz, 1993).

Course redesign example—NCAT. The National Center for Academic Transformation (NCAT), a non-profit U.S. organization, offers examples of 30 separate course redesigns carried out through the *Program in Course Redesign* from 1999-2004, including 17 redesigns recommended as best practices. The main purpose of NCAT is to “advance the use of information technology in improving student learning and reducing instructional costs” (NCAT 2005, para. 1). They implement this through a 4-step, iterative process, which cycles unto itself to include feedback and continuous improvement (NCAT, 2005).

Though the focus of redesign as presented by NCAT is on the incorporation of instructional technology, the idea of continuity and refinement, something Barham and Prosser (1985) feel is necessary to redesign, is also present. Carol Twigg (2003), the President and CEO of NCAT, offered that “sustaining innovation depends on a commitment to collaborative development and continuous quality improvement that systematically incorporates feedback from all involved in the teaching and learning process” (p. 38). Twigg (2005) did not ignore the importance of good teaching as part of the strength of redesign, acknowledging that “good teaching has nothing to do with technology,” rather those involved in redesign “are able to incorporate good teaching practice into courses with very large numbers of students,” a task made possible through the incorporation of technology (p. 5). The intent here is not to set-up a dichotomy within course redesign between the incorporation of technology and traditional methods, nor is it to advise one method of educational practice over another (face-to-face, blended, or fully online learning environments). Rather, the intention is to show that, even in an organization dedicated to demonstrating new ways to include technology to achieve improved student learning and reduce costs, there remains a focus on course improvement through continuous review and redesign (NCAT, 2005).

Course redesign example – Ngen. Continuous review and redesign, clearly seen in the work of Barham and Prosser (1985), is also seen in the Next Generation Course Redesign Project (Ngen) at The University of North Texas (UNT). Initiated in 2004, the project sought to redesign large general education classes by shifting the mode of instruction from a heavy dependence on lectures to student-centered, activated learning environments (Turner, 2009). Faculty at UNT recognized the importance of course redesign as a way to address variance in student differentials including: the changing nature of how students think and learn; the ineffectiveness of lecture-dominated courses; growing accountability concerns for student

success; advanced knowledge of the ways in which students learn; and advanced tools for creating learner-centered environments (Turner, 2009).

Reflective of adult education ideals, the redesign program emphasized experiential learning by acknowledging the learning potential of collaborative problem-solving (Turner, 2009). The intention was to “target higher-level learning and cognitive development by emphasizing deep versus surface learning, increasing student engagement with the course material and positive attitudes towards it, and providing a challenging environment” (p. 11). Turner (2009) offered that this was accomplished through learning groups of various sizes and through student learning outcomes that were linked to department learning goals. To facilitate this, faculty involved in the Ngen project coordinated each learning outcome to a specific test item (Turner, 2009). Direct connection of learning outcomes to test items helps to provide comparable measurable outcomes, a necessary component of assessing redesign effectiveness.

Implementing course redesign. For some programs, course review is a system component (Barham & Prosser, 1985; Hubball & Burt, 2004; Stevenson, Hornsby, Phillippe, Kelley, & McDonough, 2011); however, for institutions where it is not, the literature provides keys for what to understand in the implementation of course redesign. For example, typical goals for undertaking course redesign include: improving student learning outcomes; increasing engagement and retention; inspiring interest in a discipline; and reducing instructional costs (Drab-Hudson et al., 2012). Target goals for the outcome of course redesign include: adopting continuous redesign in which the process is sustained through multiple iterations by the original instructor; replicating the redesign through the adoption and adaption of the course by instructors in other sections of the course; creating and sustaining a thriving community of practice around course redesign; and, affecting teaching and learning at all levels throughout the institution and beyond (Turner, 2009). Key factors for implementing course redesigns include: recognizing, defining, and describing a problem; understanding the existing situation which influences the transformation process; understanding the context of change; understanding the boundary and timeline for the process, including stakeholders’ expectations; and, supporting a collaborative environment (Barham & Prosser, 1985; Nicol & Owen, 2009; Turner, 2009; Twigg, 2003, 2005). Overall, the importance of course redesign is that faculty maintain momentum for course evaluation that “will be *sustained*—i.e., the instructor will continue to teach, assess, and improve the course” (emphasis in original, Turner, 2009, p. 14). In this way, the change process is “not linear but rather iterative and interactive” (Nicol & Owen, 2009, p. 6), a definitive descriptor of action research.

Action Research

The term action research refers to the “whole family of approaches to inquiry which are participative, grounded in experience, and action-oriented” (Reason & Bradbury, 2001, p. xxiv). As such, action research is committed to the integration of action and knowledge in the practice of everyday living (Reason & Bradbury, 2001). This seems to align well with the ideas of course redesign as both focus on everyday experience where the process is as important as the outcome. Additionally, this adds a time element to the process which supports what various authors contend is important for redesign – that it be continuous and on-going over the life of the course (Barham & Prosser, 1985; Turner, 2009).

Greenwood and Levin (2007) articulate action research as the conjunction of research, action, and participation. By their definition, action research is “one of the most powerful ways to generate new research knowledge” (p. 7); it is dialectic, not a dichotomy, of theory and practice (Zuber-Skerritt, 1992). For Greenwood and Levin (2007) action research has definite core characteristics: that it be “context bound and address real-life problems holistically,” that

it involve the cogeneration of knowledge by the researchers and participants, that it accept that the context offers “diversity of experiences and capacities” which enrich the process, that it allow for “meanings constructed in the inquiry process [to] lead to social action,” and that the credibility of knowledge gained through the process be understood in relationship to the ability to solve problems (p. 63). These align well with the key features of course redesign as previously outlined.

Action research and higher education. Many authors, such as Carr and Kemmis (1986), Greenwood and Levin (2007), and McTaggart (1991), discussed the educational evolution of action research with foundations in the work of John Dewey and Kurt Lewin, among others. In particular, Carr and Kemmis (1986), Greenwood and Levin (2007), and Levin and Greenwood (2001, 2008) have been critical of the development of research within the university system, citing action research as a response to the theoretical hegemonic research produced in higher education. According to Pasmore (2001), Dewey himself was critical of research within higher education articulating that “a solution to a problem could only be regarded as viable when it was demonstrated to produce desired outcomes in practice” (p. 38).

When Levin and Greenwood (2001) discussed their view of action research and the university, they offered that “in action research, the teacher is brought down from the ‘pulpit’ into an active critical and reflective conversation with students” (p. 108). This aligns with course redesign directives for active learning which seek to dismantle the overuse of lecture dominant teaching methodologies (NCAT, 2005; Nicol & Owen, 2009; Turner, 2009). Furthermore, Levin and Greenwood (2001) held that action research should be a necessary part of the university setting, to include the progress of the university as a system.

Kemmis (2001) discussed his own research within education attempting to link theory and practice where the practitioner and the researcher are one in the same. He articulated that approaches to research should recognize the dual nature of teaching and researching into one’s own teaching practice. This type of approach “cast[s] the practitioner as both subject and object of research” by “alternating between the contrasting attitudes of practitioner . . . and self-critical observer” (p. 91).

The Intersection of Course Redesign and Action Research

Though aspects of course redesign can be connected to descriptions of action research, the intersection of course redesign and action research can clearly be seen in the field of curriculum inquiry. For instance, Carr and Kemmis (1986) sought to use action research to “inform and develop a critical theory of education” (p. 45). Course redesign, as an investigation into how courses can be improved for greater student learning outcomes, is a type of inquiry into a portion of the curricular structure. Therefore, like action researchers, the things that those involved in course redesign “research and that they aim to improve are their own educational practices, their understandings of these practices, and the situations in which they practice” (Carr & Kemmis, 1986, p. 180).

McKernan (1991) suggested that the general procedures for curriculum action research are: to define and clarify the problem, to undertake a needs assessment or situational analysis in relationship to the problem, to formulate ideas for solutions to the problem, to develop an action plan, to implement the action plan, to observe the effects of the action in practice, to reflect and understand the action taken, and to record and disseminate the information. If the process does not yield a clear solution then it is repeated (McKernan, 1991). In this way, action research in curriculum development intends to describe what is happening from the view of the participants: “There is a requirement to observe and provide written accounts of one’s experimentation’ so that research ‘is viewed as systematic self-critical inquiry made public”

(McKernan, 1991, p. 321). This has a straightforward connection to the way both course redesign and action research are described and understood:

Action research, as a teacher-researcher movement, is at once an ideology which instructs us that practitioners can be producers as well as consumers of curriculum inquiry; it is a practice in which no distinction is made between the practice being researched and the process of researching it. That is, teaching is not one activity and inquiring into it another. The ultimate aim of inquiry is understanding; and understanding is the basis of action for improvement. (McKernan, 1996, p. 3)

Though this is a brief glimpse into the field of curriculum inquiry, it provides the most obvious and direct connection for the evolving nature of course redesign and the comparative qualities evident in action research.

Methodology

Having outlined course redesign and action research, including articulating the connection between the two, this section of the article is dedicated to describing the research methodology including: the research setting, the research design, the action research model, and the methods that were used in the redesigns.

Research Setting and Population

The site for this study is a small architecture and interior design department (less than 100 graduate and undergraduate students) housed within a fine arts college at a mid-sized urban research university. The programs offer coursework for the following three degrees: Bachelor of Fine Arts in Architecture (Pre-Professional Degree); Bachelor of Fine Arts in Interior Design (Professional Degree); and, Master of Architecture (Professional Degree). At this time, the programs are accredited by their respective agencies. The population used for this study included 47 students in the first cycle design, 36 students in the second cycle, and 23 students in the third cycle.

Research Design

The research design began by collecting the information Barham and Prosser (1985) specified as important to implementing course redesign. This included gathering background information on the structure of the architecture and interior design programs, understanding the possibilities for change from the perspective of the faculty and the students, analyzing and assessing the available resources, investigating the history of the lecture and studio courses, understanding the attitudes of other faculty, and understanding the departmental ethos. In coordination with the literature, the research design also included an in-depth document review of the assignments and syllabi for both introductory courses. Specifically, this included the implementation of learning outcomes specified for each assignment and listed on the handout for the assignment.

Action research model. Though there are several models for action research, the researchers utilized one presented by Tomal (2010) because it is descriptive of action research as it is applied to education. A derivation of the model established by Kurt Lewin, Tomal's (2010) model includes six defined stages: (1) Problem Statement, (2) Data Collection, (3)

Analysis and Feedback, (4) Action Planning, (5) Taking Action, and (6) Evaluation and Follow-up. According to Tomal (2010), Lewin felt that change involved the recognition of the factors that both promote and hinder change and the relationship between the two that reduce the hindering or restraining force and strengthen the promoting or driving force.

McTaggart (1991) suggests that the staged or stepped process needs to clarify the connection between the final step and the beginning step to explicitly link the evaluation step with the originally identified problem. The connection back to the original step completes the cycle and offers a critical component of the evaluation. It also reinforces the continuance of evaluation over multiple cycles. This link has been added to the staged model as presented by Tomal (2010).

In the understanding of the course redesign over multiple implementations, this stage model is repeated as described by Zuber-Skerritt (1992) and Carr and Kemmis (1986). In this way, Lewin's emphasis on action promotes a cycle or "spiral of increasing efficacy and knowledge" (McTaggart, 1991, p. 13). As a dynamic process involving interconnected moments, not static steps, of planning, acting, observing, and reflecting, the series of cycles adds a continuity of reflection to the staged model. Figure 1 showcases the integration of the linear staged model into the more comprehensive and repetitive cycle model.

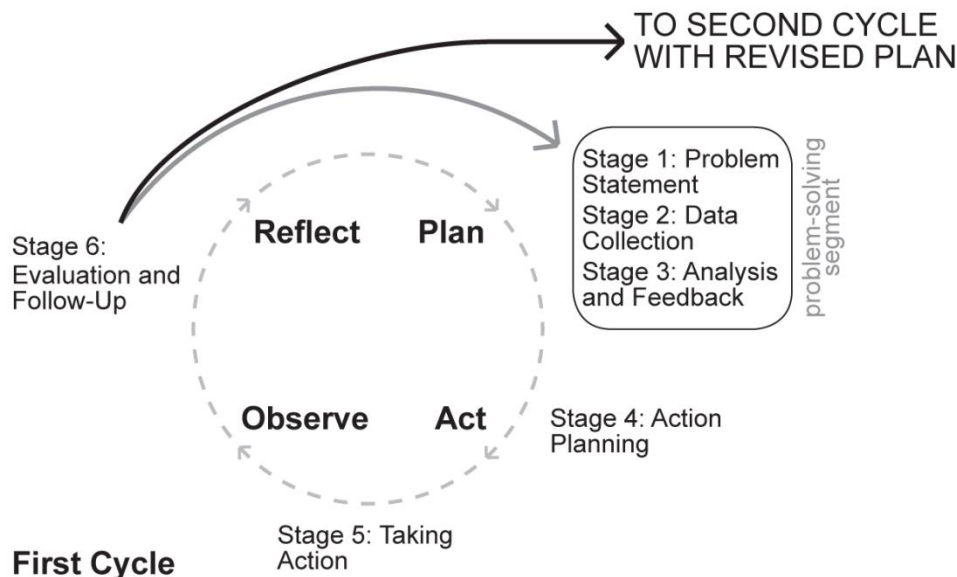


Figure 1. Integrated Action Research Model.

The research team. An important distinction of action research is the collaborative process of the action research team. For this study, this included three key faculty members from the architecture and design programs who pursued and implemented the course redesigns: the main author, the first-year coordinator for the programs, who had, previous to the course redesign implementation, taught the introductory studio course, but not the lecture course; the director and advisor of the programs, who had over the course of her administrative and faculty career (approximately 30 years) taught both courses; and, the chair of the department, who had taught both courses (over approximately 17 years), and was the most recent sole instructor of the lecture course. Within the program, the faculty members were assisted by an undergraduate teaching assistant who coordinated, through a student organization, the integration of a peer-mentoring group (composed of graduate and undergraduate design students). Outside of the program, the faculty were supported by members of the fellowship provider through seminars on teaching and the use of instructional technology. The university personnel were available for personal communications throughout the length of the fellowships.

Data collection methods. The researchers did not use action research methodology in the formative and summative evaluations of the course redesigns to the fellowship provider. However, they thought the methods used, including the reports provided to the fellowship provider, aligned with the appropriate methods for action research. Therefore, the researchers felt that course redesign qualified implicitly as action research. They used the existing data of participant observations and field notes, anecdotal notes from faculty discussions, document reviews, student evaluations, student surveys, descriptive statistics of pass/fail rates, and summative reports for data analysis.

Participant observation, field notes, and group discussions. Observations of course meetings by the primary research team were recorded via field notes and discussed at weekly meetings. Written notes consisted of observations about the progress of the course in response to the redesign methods, student performance on projects and exams, the atmosphere in the classroom, and unsolicited and solicited perceptions of students and other faculty members. At times, field notes were expansive, at other times they were brief lines of text which presented direction for the weekly group discussions. Weekly group meetings occurred during the fall semesters, with 1-3 preliminary meetings during the summers preceding, as well as 1-3 meetings in the following spring semesters.

Once a week, the research team met to discuss the progress of the course. The meetings lasted anywhere from twenty minutes to an hour and a half. Typically, the meetings served as an evaluation of course progress in relationship to previous years. The meetings also offered the chance for all participants to understand their role within the course for the upcoming week. While the redesign initially focused on the restructuring of the lecture course, it became apparent that changes in the lecture course impacted the co-requisite studio course. Ultimately, this would lead to a significant redesign of both courses, but initially it manifested the inclusion of the faculty of the studio course in group meetings. Because there was overlap in the teaching faculty (one professor taught in both courses) coordination between the lecture course and the studio course remained fluid.

Document review. A review of the goals of the course allowed the research team to understand the greater context and system for the course. This helped in specifying learning objectives and outcomes and provided an evaluation system for group discussions on progress. This also provided details for understanding how the course content (exams, projects, student presentations, lectures, and required textbooks) fit into the overall plan for the curriculum of the two programs.

Student evaluations and student surveys. At the end of each semester or teaching session, the university issues a request for anonymous student feedback of courses and instructors and maintains an online system for collection and distribution of the results. The evaluation asks the student to consider the effectiveness of the instructor(s) and course content and allows for typed, open-ended responses. Student input on these forms was used in the evaluation of the course for the summative evaluation report to the course redesign fellowship committee. In the second cycle of the course redesign the research team solicited feedback for the structure of the redesign on the university evaluations as well as on surveys that were administered in class.

Summative reports. Like the other data collection methods, descriptive statistics of student performance provided reporting information for the summative evaluations that were given to the fellowship committee after the course had been taught. Specifically, the committee asked for information about the goals for the redesign, the context and rationale for the design,

assessment of student learning, student feedback, next steps in the redesign including describing how it will be shared with others, and lessons learned. In the evolution of the course since the first cycle, the summative evaluations have provided clear direction for the next iteration of the course redesign, especially information included within the lessons learned section.

Data analysis and representation. The data analysis and representation emphasized the placement of the course redesign process into an integrated stage and repetitive action-implementation cycle model as shown in Figure 1. The intent of the analysis and representation is to clearly show how the process of course redesign (including planning, implementation, and reporting over the three cycles) is an action research process. To reinforce this idea, the representation of the analysis and interpretation is displayed in the integrated model of Figure 1 to show the overlaps of the information made available through the data collection methods.

Findings

The review of the literature provided strong rationale for the connection between course redesign and action research. As action research has often been defined as a teacher-initiated research methodology (Carr & Kemmis, 1986; McTaggart, 1991; Tomal, 2010; Zuber-Skeritt, 1992) perhaps the connection is already implicit. However, analyzing the process of the course redesign has identified key components that relate directly to the process of action research as described in the intersection of the action research stage and cycle models (Figure 1).

Course Redesign Fellowship – Cycle 1

Cycle 1, Stage 1: Identifying the problem. Every course redesign begins with an intention to correct or improve a course in some way. For the first iteration of the course redesign fellowship, the redesign of the lecture course set out to improve student retention and inclusion by addressing course integration, introduction of new projects and course content, and peer involvement (mentoring from upper level undergraduate and graduate students). Faculty envisioned the redesign as an avenue for evaluating the evolution of the course across its eleven-year history in the curriculum. This included analyzing the original purpose of the course as it was in the architecture program and understanding the new purpose of the course as it integrated both architecture and interior design students.

Cycle 1, Stage 2: Collecting information to understand the context of the problem. Proposed selected changes in the curriculum were gathered from former and current faculty (of the course) and coordinating faculty teaching other first-year courses. Input was solicited from faculty teaching upper-level courses, as well as from previous students (through verbal or written communication and prior student evaluations). The information was gathered into a coordination matrix and topics were assigned to individual courses. Input from previous students was especially integral to the building of a peer mentor program. Previous students, after reflecting on their own first year experience, acknowledged a need for a mentoring program that would allow advanced students to offer advice and support to incoming design students. Establishing and conducting the mentoring program became the project of a student organization but was integrated into the lecture course through a dedicated day for presentations and allowance for mentors to sit-in on course sessions.

Cycle 1, Stage 3: Reviewing information in order to make planning decisions. Building from Stage 2, this process involved looking at all the information gathered from the curriculum

coordination—investigation into the local and broad history of the course, its place in the curriculum, and requirements for learning outcomes as specified by the design accrediting agencies—in order to make decisions about what would be implemented through the redesign. During this stage a large portion of time was dedicated to discussing the best approach to merging the information and finding how and where it was best integrated into the course. While this heavily employed the time of the three main researchers, input was also sought from the president of the student organization involved with peer-mentoring, as well as input from the team administering the redesign fellowship. Document review was prominent in this particular stage.

Cycle 1, Stage 4: Creating the action plan for implementation of the course redesign. Included under this stage was the production of course content (syllabi, course assignments and descriptions, course schedule) which outlined how the course would be administered through the redesign. This was coordinated through the curriculum matrix to make sure that the lecture course included the topical information it was specified to cover. This also involved careful discussion of all course materials, the time structure of the course, incorporation of reading materials and learning objects, and the inclusion of the peer mentoring program. A significant amount of time was spent coordinating content within this course as well as content across this lecture course with the co-requisite studio course.

Cycle 1, Stage 5: Teaching the redesigned course. Turning the plan into action involved the actual attendance and completion of the course sessions across the fall semester. Contained in the daily functioning of the course were various data collection methods. This included participant observations, field notes, and anecdotal notes from weekly instructor meetings. Constant evaluation of the redesign implementation allowed for small tweaks to the process. Typical participant observation and field notes included: brief statements about the atmosphere during class times; perceptions of student success; issues or difficulties students were having with course material; other necessary learning objects that could be added to facilitate student learning; perceptions of student engagement with projects and assignments, especially during student presentations; and, points of clarification for weekly discussions. Anecdotal notes from weekly meetings described what needed to happen in class during the following week as well as notes to guide learning for particular students.

Cycle 1, Stage 6: Submitting the evaluation of the course redesign fellowship. Reporting the process and completion for the redesign was accomplished through an evaluation template provided by the fellowship committee. The reporting template included sections on results, student feedback, next steps, and overall impressions from faculty perspectives. Additionally, the report provided space for reporting feedback to the fellowship committee in response to their involvement with the project.

Feedback generated for the report provided important conclusions for the impact of the redesign; information included within the lessons learned section provided a foundation for the next cycle of redesign. A key component of the course was to integrate the co-requisite lecture and studio courses: As it turned out this was highly effective. Unfortunately for a few students, it did lead to some confusion over which assignments and which faculty belonged to which courses. Perhaps due to the confusion of associated courses, there was also concern over organization and due dates. The redesign also provided clear evidence of a continuing problem that the department has been struggling with: How to maintain a sense of community for students who are committed to pursuing the degrees, without the damaging side effects of students who are “trying” out the profession, and are unable to drop the course because of financial concerns. As a way to address this issue, the course redesign prompted a conversation

about adjusting the schedule for various courses from full semester courses into split session courses. Perceived as a way to alleviate many of the aforementioned concerns, these observations provided the impetus for pursuing the course redesign fellowship for a second iteration. Figure 2 displays Cycle 1 in the integrated action research model.

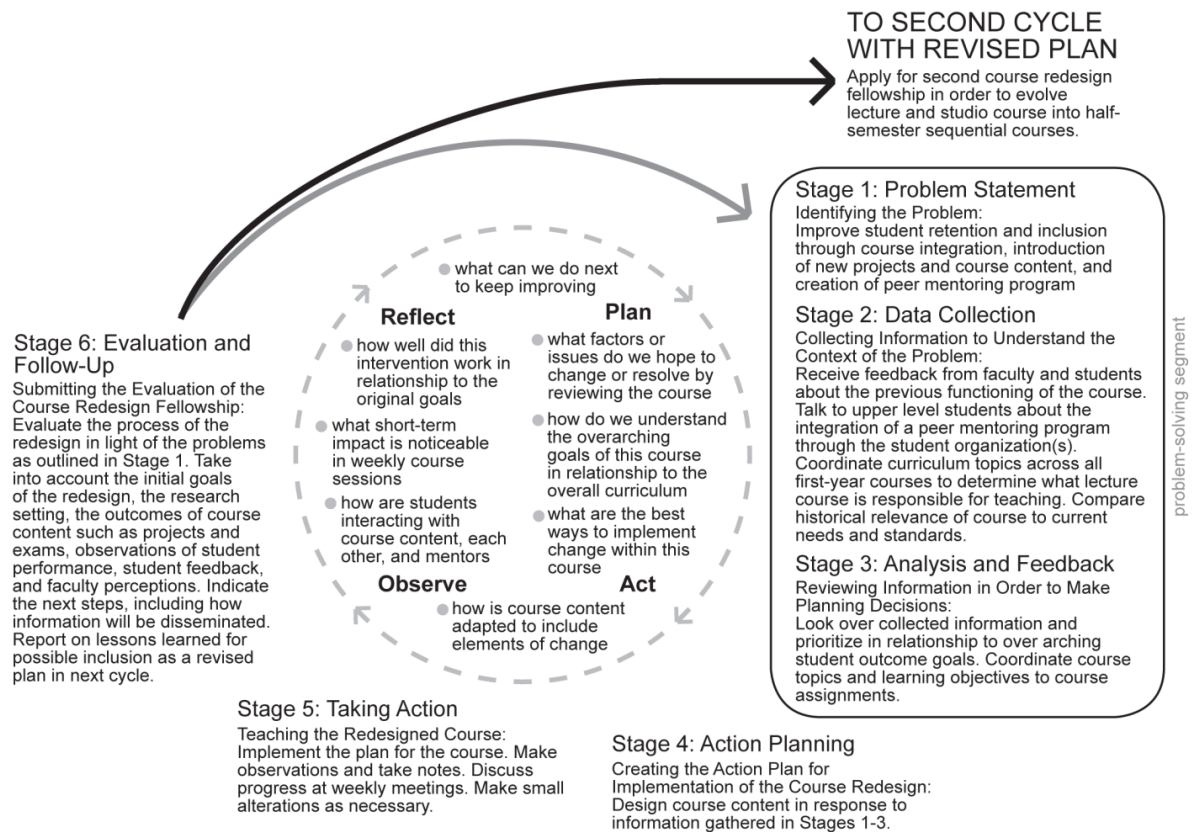


Figure 2. First Cycle: Course Redesign Fellowship.

Course Redesign Fellowship – Cycle 2

Cycle 2, Stage 1: Identifying the problem. Enthusiastic about the idea of reorganizing the lecture and the studio courses, the same personnel applied for and were granted another course redesign fellowship. The second iteration included revamping the lecture course and studio course from full-semester, co-requisite courses, into half-semester courses. Under this structure, the lecture course became a first half-semester, pre-requisite for the second half-semester studio course. This second redesign focused on the best way to restructure course content.

Cycle 2, Stage 2: Collecting information to understand the context of the problem. The proposed new timeline for each course prompted a detailed evaluation of specific projects relative to each course. Having evaluated coursework initiatives for both courses in the previous redesign, the second redesign needed to clearly outline the objectives of each project so that evaluation of learning outcomes could be acknowledged in intent and in student execution. Again, feedback from other faculty and students, as well as from the previous redesign, prompted decisions about what this second redesign should include.

Cycle 2, Stage 3: Reviewing information in order to make planning decisions. In the second iteration of the course redesign, there was more clarity about how and what was being

accomplished. Having been through the process before, the faculty felt comfortable with reviewing planning decisions for the process of the implementation. In many ways, the second redesign felt more purposeful and more directed.

A change in the physical location of the course also allowed for more focused planning decisions. The classroom location for the course changed from a stepped lecture hall with closely spaced individual desks (where the chair and the desktop were rigidly connected) to a larger room with flexible table and seating arrangements. Access to the larger space with flexible furniture influenced instructional methods, specifically, the inclusion of more class time dedicated to small group discussions.

Cycle 2, Stage 4: Creating the action plan for implementation of the course redesign. Again, the focus of this portion of the redesign was dedicated to putting together course materials for presentation of the learning strategies. A large portion of time was spent coordinating projects and schedules because of the significant change in time between a full semester course and a half-semester course. Because instructional technology can support the dissemination of content through multiple methods, it was given more consideration for its application in a reduced time allowance (actual number of course meetings). Thoughts about the inclusion of instructional technology to support the shortened course length prompted faculty to pursue a technology grant for the classroom. Though it was not implemented within the redesigned semester, the grant was received and has since been incorporated into the application and function of the course.

Cycle 2, Stage 5: Teaching the redesigned course. As in the first cycle of the redesign, turning the plan into action involved the actual attendance and completion of the course sessions across the first-half of the fall semester. Participant observations, field notes, and anecdotal notes from weekly instructor meetings were also collected for the second cycle of the redesign. As before, constant evaluation of the implementation allowed for the ability to make small tweaks as the redesign was underway. Typical participant observation and field notes followed as before with brief statements about the atmosphere of the class, student perceptions' about course materials, learning objects that might be helpful to add to the course, and points of clarification that needed to be discussed in weekly meetings.

Cycle 2, Stage 6: Submitting the evaluation of the course redesign fellowship. The reporting submittal for the second cycle of the course redesign fellowship followed the same template as the previous year. In this iteration of the redesign, the addition of in-class student surveys and solicited student feedback about the redesign in evaluations allowed for the inclusion of student comments in the report. Observations about the increased level of commitment and focus from the students were attributed to the instructional methodology of small group discussions. The peer mentoring program (which was also redesigned in the process) was highlighted as an important feature of positive student outcomes. Again, the inclusion within the report of lessons learned prompted ideas for how the course would advance in its next iteration. These included: continued observation of the restructuring of the courses over the next few years to gauge long-term impacts of the shift from full semester to half-semester courses; giving more thought to the content in the studio course, focusing on the development of one comprehensive project; continuing to study the content in the lecture course that students identified as the most troublesome; and, updating the coordination matrix to show the change in topics required to be taught in the lecture and studio courses. Figure 3 displays Cycle 2 in the integrated action research model.

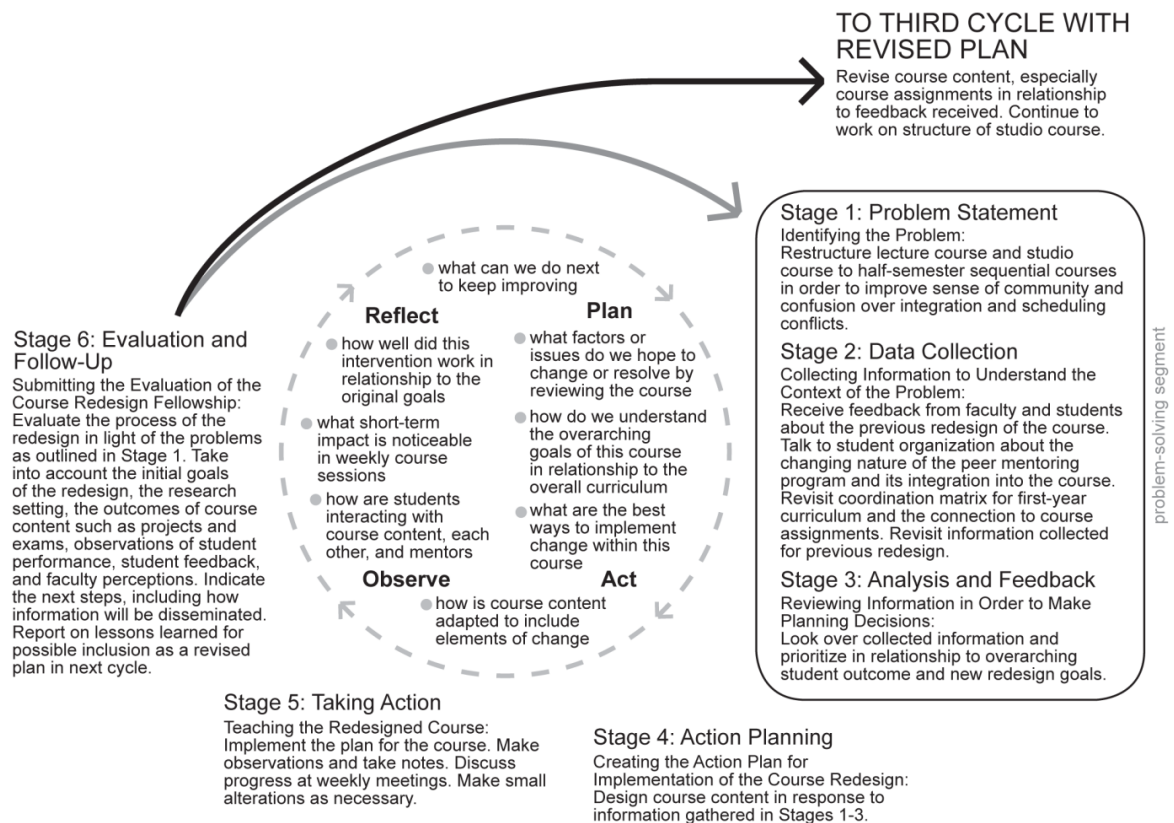


Figure 3. Second Cycle: Course Redesign Fellowship

Continuing the Process – Cycle 3 and Beyond

The third cycle or iteration of the redesign was based on the evaluation of the second cycle of the course redesign fellowship. Although another fellowship was not sought, the instructors for the course were adamant to continue reviewing the course to improve its overall goals. Currently, this includes redesigning course assignments that students felt were not as helpful as others. It also includes restructuring the content of the studio course based on the lessons learned from the previous redesign cycles. The integration of the technology grant has increased the instructors' ability to demonstrate analytical diagramming skills and the discussion of students' work. Adaptation of the peer mentoring has led to the integration of student-led workshops to support in-class discussions. Having attained a pattern for review, the instructors continually seek to advance the course for student learning outcomes and the overall goals of student retention and inclusion. This notion of iterative, cyclical redesign processes reinforces the goals of action research as an adaptive process; it reaffirmed what the lessons learned reporting showcased to the researchers.

Change cannot be about “business as usual” or merely experiencing a few “hard times” or inconveniences. It is a move away from the normality of teaching towards a state in which we, as learners in our own right, seek to challenge our practice and ourselves. (Casey, 2013, p. 148)

It was the process of several cycles that allowed reflection, motivating change where self-critique advanced curricular re-formation; success developed out of a heuristic process.

Implications

In the presentation of national and international examples of course redesign and action research, the authors hope to showcase best practices which indicate that course redesign belongs to action research because it cycles and accumulates over time. While this article has attempted to be broad in its inclusion of various disciplines related to course redesign and action research, it has generally glossed over the fields of higher and adult education, program planning, curriculum inquiry, scholarship on teaching and learning, and to some extent, action inquiry and research. However, the researchers feel that the description of course redesign as action research, including the development and application of the integrated research model, has implications for each of these related disciplines. Recommendations from colleagues suggest that the model, as it is detailed in figures 2 and 3, is especially helpful in developing course planning and evaluation criteria, as well as explaining the outcomes to others. This has proven true in the explanatory presentation of the course restructuring for other grants; for annual faculty evaluations; for annual curricular meetings; and, for a summative evaluation of the course changes as they are reviewed now, having been implemented for more than three cycles.

Conclusion

The presentation of the course redesign iterations as stages and cycles in a process of continued improvement aligns with the process of action research. The data collection and evaluation methods used in the course redesigns also align with those presented in action research. It has been the intent, through the presentation of the literature review and the research and design implementation of a series of course redesigns, to explicitly show that course redesign *is* action research. The emphasis in the connection has not been on action research as a methodology alone, but rather as a comprehensive guide to the theoretical and methodological aspects of course redesign description, implementation, and evaluation. The call for action research to be used within course redesign is not new (Hubball & Burt, 2004; Kenney & Newcombe, 2011), but it should be clearly outlined as the basis for undertaking the critical, reflexive, and transformative process of course redesign. In this way, course redesign becomes a necessary condition of critical inquiry in response to course review and curricular change.

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Article Citation

Barker, J., & Misawa, M. (2020). Redesigning a course using action research to renovate an undergraduate curriculum in architecture. *The Qualitative Report*, 25(4), 1091-1106.
<https://nsuworks.nova.edu/tqr/vol25/iss4/15>
