

Case Study: Reporting on the Redesign of a F2F Lecture Course  
to Promote Community Learning and Increase Retention

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**Abstract**

This study reported on the successful redesign of a large, university level lecture course in Introductory Psychology from a traditional face to face (F2F) course into an active learning environment. The lead instructor, Dr. Don Ehlers, adapted the SQ3R (Survey, Question, Read, Review, Recite) method of learning for the structure of his learning design. He included changing the seating of the class into groups, multimodal instruction, and incorporated computer based adaptive quizzing assignments. The new design increased student engagement, student and learning retention, and excited meaningful learning through the application of social learning and problem based learning theory. Through the initiation of the redesign to the fall of 2014 when the data in this case study was collected, not only did student test scores and student retention rates rise, but Dr. Ehlers' reputation for having the best class on campus did as well. In a student focus group of 80 students and an anonymous survey of 53 respondents, students overwhelmingly reported that Dr. Ehlers' class was the most effective on campus.

*Keywords:* Learning Design, Redesign, SQ3R, Motivation, Engagement, Meaningful Learning, Social Learning Theory.

**Introduction**

During a year-long study by Macmillan Higher Education of educators who had implemented creative and successful strategies to redesign their course using technology, Dr. Ehlers and his redesign model offered an exceptional example of a successful implementation of technology as well as a structure for improved engagement in the classroom setting. As the Educational Technology Manager for Macmillan at that time, my intent was to collect data regarding the efficacy of Macmillan's online learning tools and to document case studies of successful implementation of online resources and overall F2F redesign.

In higher education, and educational classrooms in general, redesign of traditional face to face (F2F) courses into hybrid, project based, or constructivist learning environments is a challenge for many instructors (Reiser and Dempsey, 2012). Despite the evidence in the literature that utilizing educational technology in a meaningful way can assist learners in assimilating materials through various senses, as well as "motivate students toward a goal... gain and maintain learners' attention... and provide learners with repeated and varied experiences with subject

matter to help them construct their own understanding and meaning” (Newby et al, 2011, p. 16) the leap from traditional lecture to active can be slow. My work in online technology development, design, and implementation in the higher education sphere is more effective when I can show examples to instructors of best practices. While online technology is widely used, in my work I have seen it most often used as a tool for grading and assignment collection, as in learning management system use, and not implemented to exploit and enrich learning.

As an instructional designer, educator, trainer, and employee, learning and reporting of exceptional and creative use of educational technology was personally and professionally important. I had the opportunity to profile excellent instructors and share their methods with others. This case study represents one truly effective approach to redesign for college professors and any instructor looking to engage and motivate their students in more meaningful ways in and out of the classroom.

### **Background**

The Department of Behavioral Sciences at Northwest Missouri State University began conversations of a course re-design for the General Psychology course in the General Education curriculum. These conversations began with a committee of faculty who investigated possible models for this re-design in the Spring of 2011 the move was made to begin this re-design. As that semester unfolded, identification of areas of change in the design was noted and the department moved toward a different model than was first initiated.

In the late Fall of 2011, Dr. Don Ehlers was asked to re-design the required General Psychology at Northwest Missouri State University in Maryville, MO for approximately 480 students a semester beginning the Spring of 2012. The learning goal of this course is to introduce students to the foundation of human and animal behavior. Dr. Ehlers had another goal: To engage, motivate, and inspire critical thinking and mastery learning in his students. His challenge was to establish a course curriculum that could engage individual students in the learning experience, make that learning relevant and meaningful, and excite a desire to learn.

Dr. Ehlers’ chosen textbook for his introductory psychology course is **Psychology**, 10e by David Meyers, and in it Dr. Meyers suggests employing the SQ3R model to help students study and learn (Meyers, 2013). The SQ3R is an acronym for Survey, Question, Read, Review, Recite and as a learning strategy has a proven record of success (McDaniel et al, 2009). Dr. Ehlers adapted this strategy in a creative way to incorporate best practices with educational technology and social learning theory.

### **Redesign**

A traditional lecture classroom that can accommodate up to 85 students is transformed from rows of students in a lecture hall into groups of tables designed for groups of 4 to 6 students per table. This is all by design. By employing the tenants of Vygotsky and Bruner’s social learning theories, Dr. Ehlers has created a strategy to further enhance the learning experience by encouraging community learning. The groups are not assigned, and the majority of the students come into the class as strangers. By the end of the course, the students have become their own interdependent group of learners, accountable to one another as well as the course instructors.

The six classes are scheduled to meet three days a week: Monday, Wednesday, and Friday. Dr. Ehlers has used that structure of the class schedule to apply his SQ3R model redesign: Survey/Question on Monday; Question/Engage/Apply on Wednesday; Read/Review/Recite on Friday. The course activities on the individual days include:

**Monday:** 80 students sit in their groups, and with power point projected at each end of the room, Dr. Ehlers moves about the room, providing the overview of that weeks' learning materials (by chapter). He uses video, music, powerpoint, and questioning techniques as he explains the content and provides visual and audio examples of the key concepts. Students are encouraged to question, engage, and participate in this "Survey" of the material.

**Wednesday:** The classes are broken into two sections by closing a divider in the large space. Ms. Nashleanas and Ms. Shade work with 40 students in their respective rooms, utilizing small table groups in application, investigation, demonstration, and presentation of the content material. This class time is dedicated to questioning, engaging the student, and applying the learning (the Q of the SQ3R model). Graded reflection activities (like a pop-quiz) encourage meaningful, relevant learning and are included randomly to encourage attendance.

**Friday:** The students do not attend class. Friday is scheduled for independent study using Myer's LaunchPad (LP) and their textbook to read, review, and recite that week's learning content.

Dr. Ehlers gives the students the tools to be successful and a grading scale that allows them to have choice and assert control in their learning experience. These two in combination with clear guidelines and a formula for success offers the learner the choice to determine how and when they will learn and the responsibility for their achievement. According to the research of the likes of Keller (1987), a learner's "feelings of control over their lives and environment" (p. 3) is a motivating factor in a person's success, and this is evidenced in the results in Dr. Ehlers' class as well.

### **Technology**

Besides the use of multi-modal presentations of the course content, Myer's LP is used as the online learning tool. The full Myers' **Psychology**, 10e text is in LP as an interactive ebook. The students may use the ebook or a printed version to read the course materials. Learning Curve (LC) activities are included as end of the chapter quizzes. These are required and are 35% of the students' overall grade. LC is an adaptive practice tool which allows for guided review of the learning material. Students review chapter content through a series of questions that adapt to how the student answers the material. Students gain or lose 'points' based on their answers. The program guides students to the sections of the text that may need more review for targeted learning and moves the students through the review and learning practice process at their own pace. Students are not graded on right/wrong answers, but rather awarded 5 points for completing each activity.

### **Data Collection**

In the Fall of 2014, I arranged to interview Dr. Ehlers and his team, observe a class, and conduct a brief, informal focus group of Dr. Ehlers' students. He detailed his approach and methods, and we reviewed the quantitative data he and his graduate student, Mr. Hicks, had been collecting and analyzing. Adjunct instructors, Ms. Nashleanas and Ms. Shade reported on the positive attitude of their students and the high level of engagement in comparison with other courses. The group worked well together as a team and focused on the collaborative nature of the teaching experience under Dr. Ehlers' tutelage.

During a Wednesday session in the 11<sup>th</sup> week of the semester, I observed two classes of 40 students each. I observed students working in teams of 4 to 6 at tables arranged for them to engage with one another. Activities to apply their learning to real-life scenarios were employed, and the students had the opportunity to present their groups work to the other teams. There was a high level of activity, engagement, and at times a high volume level, but there were no discipline problems. The students seemed to be enjoying themselves.

Given 10 minutes at the end of each class, with Dr. Ehlers out of the room, I conducted brief focus groups with the students. I asked if working in groups helped them to build a community and a sense of accountability to one another in the group. All answered in the affirmative. When asked if these groups helped them learn more and retain the learning better, all students responded in the affirmative. When asked if they enjoyed the design of the course, all raised their hands in affirmation. Furthermore, when asked if the students would like more of their classes to be designed like Dr. Ehlers' course, all raised their hands. One male student in particular offered that he would be an A student if all of his courses were like Dr. Ehlers. I also had the opportunity to ask questions of 11 individual students privately, and when asked what they thought of the course, all volunteered that everyone liked Dr. Ehlers class.

Qualitative Data Collection: All 480 students were invited to respond to an anonymous online survey designed to measure the self-reported efficacy of the Learning Curve (online tool) activities and positive affect. 53 responded.

Quantitative Data Collection: With the assistance of his Graduate Assistant, Mr. Justin Hicks, Dr. Ehlers has been collective exam score data from the implementation of the redesign to the present (Figures 1 and 2). (Figures 1 and 2 represent only the data collected from the spring of 2012 to the fall of 2014). In an effort for continued evaluation of the course's strengths and weaknesses, Dr. Ehlers' data reflects that students are far more successful when they A) participate in the classroom activities, and B) complete the learning curve activities.

### **Results:**

Related to overall course grades, students that participated in all of the classroom small group activities and the Monday participation activities scored an average of 35.84% higher on their final grade than those who participated in 33% or fewer (Figure 1). Students that completed all of the assigned Learning Curve activities scored 31.43% higher on average exam scores than their counterparts that completed 33% or less of the activities (Figure 2).

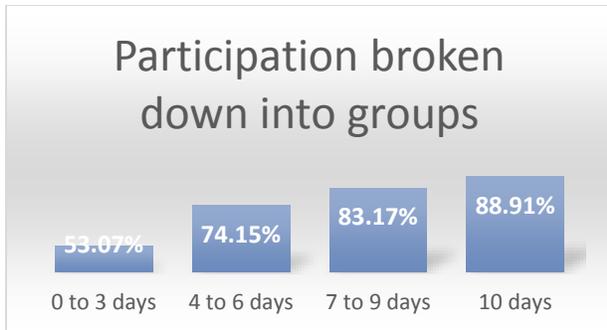


Figure 1: Dr. Don Ehlers' data on the correlation of participation in the groups and the overall course grade.

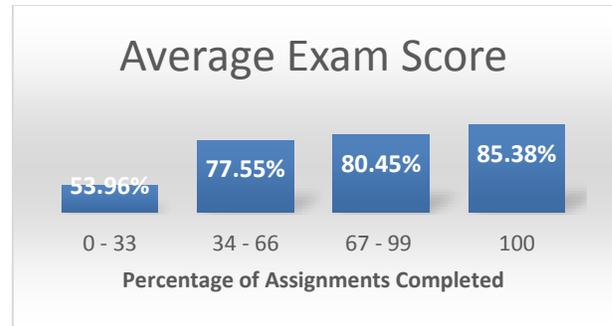
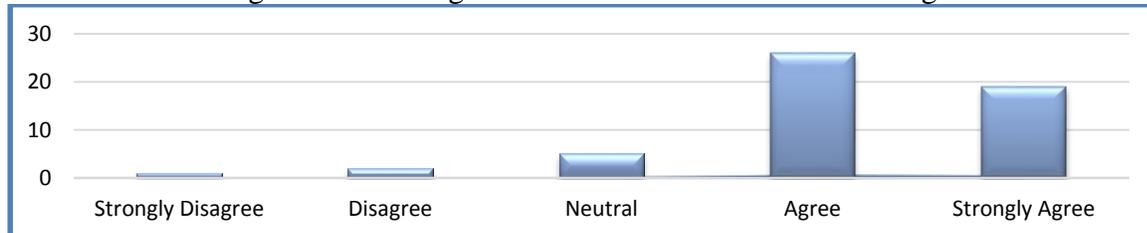


Figure 2: Dr. Don Ehlers' data on the correlation of completed Learning Curve activities and the overall achievement on exams.

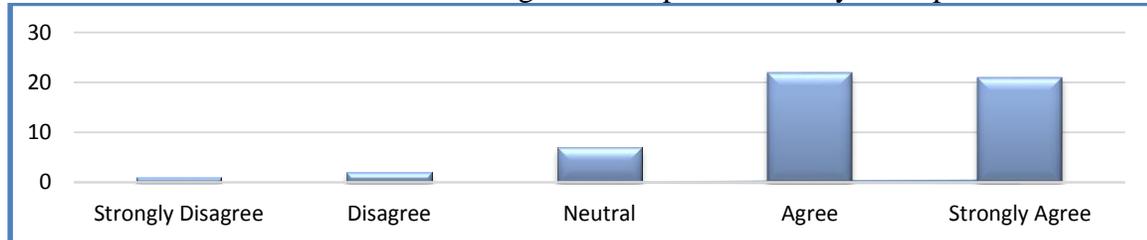
Of the 53 students that responded to the research survey, which included a Likert scale to measure positive affect (Chart 1-8), the majority of the students reported that they liked using the online tools and felt that they helped them in the course. 85% liked using the online materials. 86% reported that the Learning Curve activities helped them learn the key concepts in the course. 85% thought that using Learning Curve (LC) helped them more than studying on their own.

Chart 1: I like using online learning tools to reinforce what I am learning in the textbook.



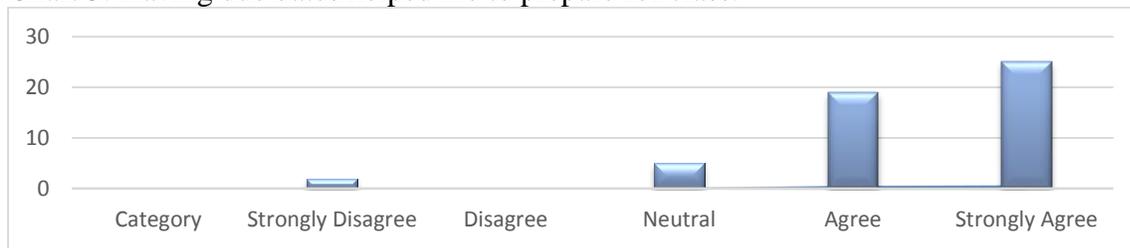
Category	Percentage	Students	Statistics
Strongly Disagree	1.90%	1	Sum 229
Disagree	3.80%	2	Average 4.3
Neutral	9.40%	5	StdDev 0.8
Agree	49.10%	26	Max 5
Strongly Agree	35.90%	19	

Chart 2: I think there is a benefit to using LC to help me learn key concepts in the course.



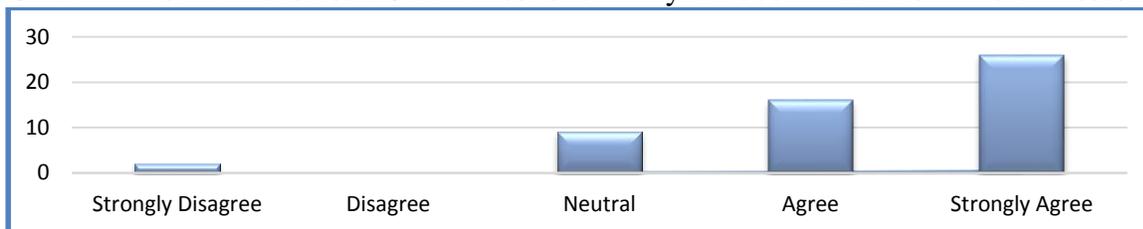
Category	Percentage	Students	Statistics
Strongly Disagree	1.90%	1	Sum 219
Disagree	1.90%	2	Average 4.1
Neutral	7.60%	7	StdDev 0.9
Agree	39.60%	22	Max 5
Strongly Agree	49.10%	21	

Chart 3: Having due dates helped me to prepare for class.



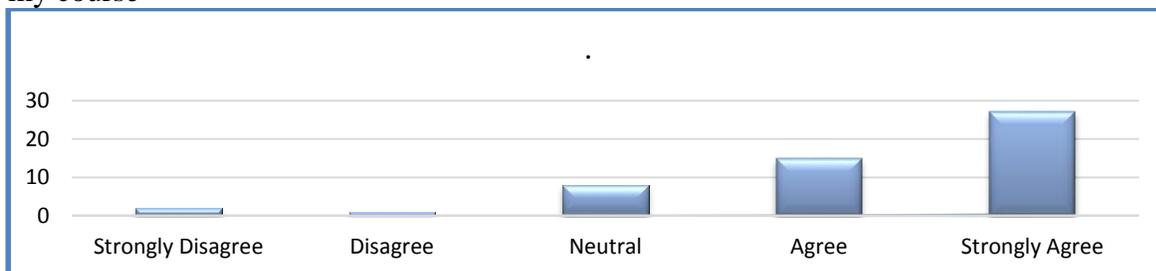
Category	Percentage	Students	Statistics	
Strongly Disagree	3.90%	2	Sum	224
Disagree	0.00%	0	Average	4.3
Neutral	9.60%	5	StdDev	1
Agree	36.50%	19	Max	6
Strongly Agree	48.10%	25		
Not Applicable	1.90%	1		

Chart 4: I would like to use LC activities to learn my textbook materials in more classes.



Category	Percentage	Students	Statistics	
Strongly Disagree	3.80%	2	Sum	223
Disagree	0.00%	0	Average	4.2
Neutral	17.00%	9	StdDev	1
Agree	30.20%	16	Max	5
Strongly Agree	49.10%	26		

Chart 5: I think that using LC outside of class (or in the lab) helped me to get a better grade in my course



Category	Percentage	Students	Statistics	
Strongly Disagree	3.80%	2	Sum	223
Disagree	1.90%	1	Average	4.2
Neutral	15.10%	8	StdDev	1
Agree	28.30%	15	Max	5
Strongly Agree	50.90%	27		

Responses from the open ended questions included the following:

**What do you see as the most beneficial part of LC?**

- Forces us to actually read the book so we can find the answers, which in turn helps me learn the material better.
- It reinforces what you learned in lecture.
- Puts questions in forms that make you think about it.
- Helped me understand key concepts and definitions from the textbook.
- It forces me to study outside of class and prepares me for the type of questions that will be on the exam.

**What did you like the most in using LC?**

- Interesting questions, changes them up and keeps you on your toes.
- Doing learning curve makes it easier to remember the different pieces of the chapter and bring it into one whole chapter
- The questions repeat and engrave the material into memory.
- It is easy to use and if I don't get a question then I can see on hint and when the same question appears then I can answer it and understand the things better.
- How the information is presented and how it gives examples using the terms and information we learned in the chapter.

**Conclusion**

Dr. Ehlers' redesign is one of the best examples of a successful implementation of the key learning theory principles of social learning and community learning that I have had the privilege to report on. The classroom set up provides opportunities for the students to create their own social learning groups, and the students self-report that they are more motivated to attend class. Dr. Ehlers' lecture is a multi-modal learning experience in which music, videos, and open questioning are a key part of the design. His smaller group, problem based learning and application activities during the students' Wednesday class allows for reinforcement and application of the learning materials. The random reflection activities provide additional motivation to attend class, but the students also are allowed choice on whether or not they come to class or participate in the online adaptive study exercises. The flexible Fridays offer the students the ability to control some of their own learning at their own pace, and the adaptive quizzing technology and interactive ebook allow the students to practice on their own and explore more material at their own pace. My hope is that more instructors read this case study and adapt Dr. Ehlers' strategies for their own classes.

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