

Self-Regulation Efforts and Cognitive Load Concerns within a Developmental Learning Environment

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Abstract

People new to the higher education learning environment, and without possessing the abilities sometimes described as "learning how to learn", delve into either gateway courses or developmental courses. In this case study, a developmental course instructor integrates self-regulation tools and cognitive load sensitivity into her developmental course, with positive outcomes.

Problem

Learners in developmental courses within community colleges may not possess the abilities to self-regulate their learning efforts, or understand the procedural, self-regulatory efforts focused upon "how to learn". As such, learners in developmental courses may not persist and succeed. Therefore, **the retention and success of learners within developmental courses** is an issue at a large metropolitan community college.

Purpose

The purpose of this study was to further the understanding of how self-regulation support and cognitive load sensitivity impact the success of learners within a community college developmental course.

The study was initiated due to the lack of learner persistence and success within community developmental coursework.

Relevant Literature

The work of **self-regulation** researchers and theorists have significantly impacted the student success rate, including retention within courses, by the simple understanding as regards one's ability to regulate and think about one's own behaviors (Chandler & Sweller, 1992; Dweck, 2002; Pajares, 2008; Palincsar & Brown, 1984; Pintrich & Schunk, 2002; Sweller, 1988; Winne & Hadwin, 2008; Ziegler, Stoeger & Grassinger, 2011; Zimmerman, 1990; Zimmerman, Moylan, Hudesman, White & Flugman, 2011).

The work of **cognitive load** researchers and theorists have directly impacted the "chunking" of information into smaller, understandable groupings of information with the focus upon the learner's ability to understand, conceptualize and integrate new knowledge into their short-term memory and long-term memory (DeLeeuw & Mayer, 2008; Kalyuga, Ayres, Chandler & Sweller, 2003; Kirschner, Sweller & Clark, 2006; Malamed, 2013; Moreno & Mayer, 1999; Mousavi, Low & Sweller, 1995; Paas, Renkel & Sweller, 2004; Sweller, 1988; Sweller, Van Merriënboer & Paas, 1998; Voorhies & Scandura, 1977).

Research Questions

RQ1: To what extent do self-regulatory aides impact the success of the learners in developmental courses?

RQ2: To what extent does the "chunking" of information into smaller groups of information impact the success of the learner in developmental courses?

RQ3: To what extent does an instructor's sensitivity towards cognitive load concerns impact the success of learners within a developmental course?

Procedures

The researcher worked with the developmental course instructor to slowly integrate self-regulatory procedural check sheets into the class sessions.

The check sheets were meeting-by-meeting checklists of the specific process to follow, focused upon homework such as text-based and course-based readings, course interaction efforts, assignments, and assignment submission expectations.

This document was literally set up as a check sheet, wherein the learner was to physically designate that s/he successfully completed the task before attending to the next task on the check sheet.

The developmental course instructor worked to implement "chunking" of information within worksheets, presentations, readings, assignments and assignment rubrics.

The course instructor maintained a reflective journal throughout the study effort.

The qualitative data were pulled from the learner's self-regulatory worksheets, the learner reflective journals, and the course instructor's reflective journal.

Data Analysis

The data were analyzed using the Grounded Theory approach towards identifying patterns and themes throughout the data (Berg, 2007; Creswell, 2007). The coding occurred by hand, delving into focus coding to generate themes and categorize the data into larger themes, while axial coding was conducted to discover and verify existing subcategories within the data set (Charmaz, 2006). The constant comparative technique was implemented to compare the different data sources (Glaser & Strauss, 1967).

Findings

The themes that arose on the part of the developmental course instructor were as follows:

- Theory into Practice
- Subject Matter Expert versus Instructional Expert
- Lifelong Learning
- Comfortableness

The themes that arose on the part of the developmental course learners were as follows:

- Perceived Control
- Perception of Self as a Learner
- Learn how to Learn
- Extending Beyond the One Classroom Implementation
- Self Control
- Perception of Success as a Learner

Limitations

The limitations of this study revolve around the inability of this experience to extend beyond the site experience.

The developmental course instructor did not have a background in higher education instruction, nor any instructional effort at the K-12 or business/industry realms.

The developmental course learners' persistence throughout the semester did not take into account the differentiation of the learners, as pertains to whether they were first time developmental course learners or had previously taken the developmental course a number of times.

Conclusions

The learners within the site's developmental courses require additional support as integrated into the course experience. One may suggest that the learners had not previously "learned how to learn" and grasped the procedural efforts associated with the learning process. The importance associated with an instructor's ability to understand the learning process and integrate appropriate learning tools is integrally important towards student success, and goes beyond the instructor as Subject Matter Expert and towards a more assistive, albeit artistic instructional understanding.

Social Change Implications

The results of this study may make a positive difference in society, due to

- the impact of the simplistic self-regulatory and cognitive load support that assisted the developmental course learners towards course success
- a sense of themselves as successful learners
- and the ability of the learners to maintain and remain (retain) through the course's successful conclusion.

A second social change implication suggests that higher education instructors have achieved subject matter expertise, but may desire to continue their professional development efforts associated within the realm of teaching and learning so as to support learners within the coursework environment.

The theoretical understanding and discussion are of import so as to acknowledge the need for a working knowledge base as regards the teaching and learning profession, but the "real world" implementation of the acknowledge the theories and models are also worthy of recognition and respect.