Students' Perceptions of Retail and Merchandising Analysis Course Through Collaborative Problem-Based Learning and Digital Taxonomy

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Introduction. Retail and Merchandising Analysis (RMA) course is an advanced course from retail math, which is considered as the key applied course in Fashion Merchandising and Apparel undergraduate curriculum (Kopot & Reed, 2019; Flynn & Sandberg, 1993). The RMA course aims to equip students with real-world buying applications from basic retail math in the workplace. Given the limitations of traditional methods to teach RMA, researchers reexamined the courses by using problem-based learning, student-centered, and industry-oriented tools to improve students' higher-order skills (i.e., problem-solving and creating) (Carpenter & Fairhurst, 2005; Foster, 2005), suggesting that the problem-based learning method (PBL) offers valuable student-centered learning experiences for students to engage with real-world industry problems. With the rapid development of digital technologies in the industry and education field, digital literacy and competency are vital for students to be industry-ready and significantly facilitate students' learning experience (Martínez-Bravo et al., 2022). However, there is limited research investigating teaching practices in retail and merchandising analysis courses, especially considering how digital competency is integrated. Based on the discussed landscape, we proposed three research questions: (a) RQ1: How do senior-level undergraduate students perceive the RMA course from a collaborative problem-based learning (CPBL) perspective? (b) RQ2: What aspects of teaching could be improved in the RMA course? and (c) RQ3: What and how is digital competency integrated into the RMA course?

Literature Review. To address the research questions, we utilized collaborative problem-based learning (CPBL) as the main theory and Bloom's digital taxonomy (Churches, 2007) as the complementary framework. First, CPBL is developed as a curricular and learning approach to move forward constructionism that integrates collaborative learning (CL) and problem-based learning (PBL) (Davidson, 2014). CL is a learning approach that describes the coordinated engagement of multiple learners in a group, emphasizing beyond completing the task but discovering and constructing knowledge together to achieve a common goal (Davidson, 2014). As with CL, PBL is an approach that puts real-world problems in context, aiming to motivate students to identify, discover, research, and solve problems by working together (Davidson, 2014). Previous studies show that the integration of CL and PBL plays a crucial role in college students' handling of real-life problems and cultivating social abilities (Hendarwati et al., 2021). Second, Bloom's digital taxonomy (Churches, 2007) addresses six digital competencies that range from lower-order thinking skills: (a) remembering, (b) understanding, (c) applying, to higher-order thinking skills, (d) analyzing, (e)evaluating, and (f) creating. Bloom's digital framework highlights lower-order thinking skills as the foundation for higher-order thinking skills to develop and enhance students' creativity in learning environments by using digital technologies effectively (Purushothaman, 2017).

Methods. This study used the case study method because it can provide an in-depth and contextualized comprehension of the course (Yin, 2009). A fashion retail and merchandising analysis course at one University was selected, and data collected from the class spanned 3 years, taught 4 times from Spring 2021 to Fall 2023, a total of 111 students enrolled in the course during this period. Multiple data sets, including students' evaluations, syllabi, and assignments, were collected. Then, we utilized content analysis and thematic analysis methods via deductive (based on the two theoretical frameworks) and inductive (to generate findings) coding schemes by using MAXQDA. We triangulated the study through multiple data and investigator-reviewed interpretation, which established the reliability and validity of our findings (Golafshani, 2003).

Results and Discussion. Table 1 shows the overall themes and coding schemes. Two themes emerged from the students' evaluation data to address RQ1 regarding students' perceptions of the RMA course from the CPBL perspective. Theme 1: CPBL (70.2%). Under this theme, five sub-themes were identified. The top two themes were collaborative and actively learning (20.2%) and real-world problem solving (15.5%), indicating a growing recognition of the importance of using real-world problems to contextualize knowledge, and fostering collaborative environments where students actively engage with their peers and instructors to construct practical knowledge is important in RMA courses (Davidson, 2014). Theme 2: The role of the teacher (29.8%). Two sub-themes were identified under this theme: (a) teacher as supporter, facilitator, and creator (23.8%) and (b) self-directed learning (6.0%), indicating that the role of the teacher is to create a positive learning environment, guide the learning process, and encourage collaborative and active learning (Newman, 2005). For RQ2 on improvement areas, based on the student's evaluation feedback, more group time, pre-class materials, clear instructions, and examples associated with projects were expected and to be improved. For RQ3 regarding digital competency, the finding showed that higher-order digital taxonomy was highly associated with CPBL. This finding corresponds to Davidson's (2014) findings on PBL, which were associated with the development of knowledge and higher-order thinking skills, such as problem-solving and collaborative skills (Davidson, 2014).

Implication. This study contributes to CPBL literature by investigating students' perceptions of RMA course. The findings of the study support the importance of CPBL in cultivating higher-order digital competencies and enhancing students' learning experiences. In addition, this study provides insight into how educators can adapt teaching pedagogy to align with CPBL, focusing on facilitating student-centered learning experiences. Furthermore, the study indicates that embracing CPBL and prioritizing the development of digital competencies can empower students to be ready for dynamic and data-driven job environments.

Table 1. Coding Themes, Scheme, and Examples

Themes	Rate %	Examples
CPBL	**70.2**	
Real-world problem solving	15.5	"I liked how realistic this class was to my career field" - Student
Collaborative and actively learning	20.2	"I enjoyed the group projects" - Student
Extensive knowledge	11.9	"Instructor provides great industry feedback and clearly explains content" - Student
Inclusive learning environment	13.1	"People are following along to encourage participation" - Student
Hands-on learning by doing	9.5	"Hands on excel working in class" - Student
The role of the teacher	**29.8**	
Teacher as supporter, facilitator, and creator	23.8	"Instructor was available outside of class for any help we needed, and required us to think beyond class, asked questions and discussion often" - Student
Self-directed learning	6.0	"I enjoyed going to class and listening" - Student
Digital taxonomy	**100**	
Higher-order competency (Creating, Evaluating, Analyzing)	62.5	"Develop strategies to maximize sales…", "Discuss marketing and merchandising tools…" - Syllabus
Lower-order competency (Applying, Understanding, Remembering)	37.5	"Understand how retailers and wholesale providers plan sales…" "Utilize data provided to analyze retail sales performance…" - Syllabus

*Rate: The percentage of the specific coding themes among all themes identified in the study.

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