Chapter 2
Utilizing Learning Management System (LMS) Tools to Achieve Differentiated Instruction

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ABSTRACT
Students bring their own knowledge, experiences, and personal interests to brick-and-mortar and virtual classrooms. When instructional strategies and learning activities are developed based on prior knowledge, experiences, and personal interests, the instruction is a form of differentiation. This chapter discusses how Learning Management Systems (LMSs) can help teachers and instructors achieve differentiated instruction that meets individual needs. There are two important implications of differentiated instruction: (a) lessons are tailored to meet individual and diverse student needs, and (b) lessons cannot be planned without knowledge about who the learners are. When taking into consideration that teaching is tailored to meet individual needs, it becomes apparent that differentiated instruction means more work for the teacher or instructor. It also means the teacher or instructor has to continually change learning activities and is not able to use handy pre-designed ones because student progress or lack of progress informs teaching strategies. This chapter argues that differentiated instruction is worth the time and effort because it responds to individual needs, and responsive teaching maximizes each student’s success.

SETTING THE SCENE
Each student comes to class with different skills, prior knowledge, and experiences, yet curriculum developers, teachers, parents, and school administrators expect all students to meet the same learning outcomes. Apart from students who have learning disabilities or special needs with modified and adapted programs, students in a class are expected to perform the same skills, grasp the same concepts, solve the same problems, and critically think about the same topics. Teachers and instructors must find ways to cover the curriculum and ensure all students meet the prescribed learning objectives for the subject or course. However, this blanket approach should not be the focal point of instruction. Instruction needs to enhance learning for each student. Differentiated instruction can

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help teachers and instructors achieve this because it supports effective teaching and student learning. The following scenarios support this argument.

**Scenario 1**

A university professor in the faculty of education teaches a course called Mathematics for Elementary Teachers. The students are third-year undergraduates, and the course is required for graduation. The professor gives the students the previous year’s final exam on the first day of class, and explains that the exam mark will not count towards the final course mark, but the results will help in the design of the term lessons. After collecting the exams, the instructor explains that any student who scores 88 percent or higher on the exam would be exempted from attending classes, completing class assignments, and completing the midterm exam. The only requirement for these students would be to complete the final exam at the end of the term. The instructor tells the students that the course is a refresher because the content covers mathematics for grades 5 to 10. He concludes with these words: “Students should not be required to sit through a full semester in a class that teaches them nothing.”

In this scenario, the professor assesses prior knowledge and then groups the students into two groups; one group is required to attend classes (lessons designed to meet their needs), and the other group is exempted from this requirement (no lessons needed). This instructor differentiates instruction, and student needs are met.

**Scenario 2**

Another instructor, teaching the same course, Mathematics for Elementary Teachers, begins his lessons on the first day of class. He does not assess prior knowledge, and requires all students attend his classes. He tells the students he thinks all students should be treated equally. Everyone must attend all classes and complete all term assignments and the midterm and final exams. During one of his weekly lectures, he discovers a student doing a history assignment. The student is not engaged in his lesson, and is content to work on another course. The irritated professor puts the student on the spot and calls him to solve a complex, Grade 10, math equation on the board in front of the class. The student gets up, solves the problem with ease, and returns to his chair. The student attends classes because it is a requirement, not a necessity. He does not need the lessons because he has already mastered the content being taught.

In this scenario, the instructor does not take prior knowledge into consideration and uses a one-size-fits-all instructional strategy. This approach reaps a very different outcome: student needs are not met. Does differentiation make more sense?

**INTRODUCTION**

Differentiated instruction is a common sense practice because it responds to student needs. According to Reigeluth and Carr-Chellman (2009), “it is a waste of human potential to make some students wait for the rest of the class after they have learned what was being studied, just as it is a waste to make some students move on before they have learned it” (p. 391). Students should not have to sit through a lecture about content they have already mastered. Instead, this time should be spent building on that prior knowledge. This is what differentiated instruction does. It allows for the best use of instructional time because instructional activities are selected and designed based on student readiness, not based on curriculum requirements. Paterson, Schneidler, and Williamson (1938) state, “Ideally, the highest aim of education is to obtain a full understanding of each student in order to adjust educational offerings to his needs so that he may be prepared for a role wherein highest achievement and satisfaction may be realized” (p. 1). Differentiated instruction