

**Department of Computer Engineering**

**Innovative Teaching and Learning**

**Class:** Second Year

**Subject:** Discrete Structure and Graph Theory

**Year:** 2024-2025

**Topic:** Types of Function (Surjective, Injective Bijjective)

**Method of teaching:** Role Play

**Role Play:**

Role play exercises give students the opportunity to assume the role of a person or act out a given situation. These roles can be performed by individual students, in pairs, or in groups which can play out a more complex scenario. Role plays engage students in real-life situations or scenarios that can be “stressful, unfamiliar, complex, or controversial” which requires them to examine personal feelings toward others and their circumstances (Bonwell & Eison, 1991, p.47).

**Benefits of Role Playing:**

Role playing can be effectively used in the classroom to:

- Motivate and engage students
- Enhance current teaching strategies
- Provide real-world scenarios to help students learn
- Learn skills used in real-world situations (negotiation, debate, teamwork, cooperation, persuasion)
- Provide opportunities for critical observation of peers

**Teaching Method:**

Six students are arbitrarily selected to make two group. Each group will represent two different sets. They are asked to join hands between sets according to type of functions.



**References:**

1. <https://www.niu.edu/citl/resources/guides/instructional-guide/role-playing.shtml>

**MCT**  
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**Department of Computer Engineering**  
**Innovative Teaching and Learning**

**Subject:** Web Design, Python, DSA and Cyber security

**Year:** 2024-2025

**Method of teaching:** Flipped Classroom

**Flipped Classroom:**

A flipped classroom is structured around the idea that lecture or direct instruction is not the best use of class time. Instead students encounter information before class, freeing class time for activities that involve higher order thinking.

Although flipping classrooms has long been the practice within certain disciplines (even if it was not given that name), the concept took off as technological changes made it easier to access and create educational materials. This approach assumes that there is no difference between a student listening to a lecture individually and with other students in class. There are plenty of ways these activities differ, and there are benefits that [lecture](#) can provide, such as create a social experience, students pick up from other students' social cues. There are also strategies you can use to make lectures interactive (see our [tipsheet on interactive lecture techniques](#)).

**Benefits of Role Playing:**

- Students can learn at their own pace.
- Students take responsibility for their learning
- Students learn rather than encounter material in class
- there are more opportunities for [higher level learning](#)
- it does not waste time transferring information to students when that information is available to them in books or online ([Mazur 2009](#))
- instructors and TFs work more closely with students, getting to know students better and providing better assistance increased collaboration between students



**References:**

1. <https://bokcenter.harvard.edu/flipped-classrooms#:~:text=A%20flipped%20classroom%20is%20structured,that%20involve%20higher%20order%20thinking.>