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**A study on the instruction of the infinity concept with suitable examples – focused on curriculum of middle school.**

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Summary: The purpose of this study is to suggest effective teaching methods on the concept of infinity for students to obtain the right concept in the middle school curriculum. Many people have thought that infinity is something vague and unapproachable. But, nowadays it is rather something with a precise definition that lies at the core of modern mathematics. To understand mathematics and science very well, it is necessary to comprehend the concept of infinity. But students tend to figure out the properties of infinite objects and limit concepts only through their experience closely related to finite process, and so they are apt to have their spontaneous intuition and misconception about it. Since most of them have cognitive obstacles in studying the infinity concepts and misconception, mathematics teachers need to help them overcome the obstacles and establish the right secondary intuition for the concepts through good examples and appropriate explanation. In this study, we consider the developing process of the concept of infinity in human history and give some comments and suggestions in teaching methods relative to that concept with new suitable examples.

*Classification:* I33 C33 D43

*Keywords:* potential infinity; actual infinity; infinite processes; limits; concept formation; intuition; student errors; simple continued fraction; convergence