1077-97-1080 Zengxiang Tong* (ztong@otterbein.edu), Department of Mathematical Sciences, Otterbein University, Westerville, OH 43081, and Zhen Huang (zhuang@otterbein.edu), Department of Mathematical Sciences, Otterbein University, Westerville, OH 43081. An Extension of the Fundamental Theorem of Calculus. Preliminary report.

The Newton-Leibniz Formula is now called the fundamental theorem of calculus in all calculus textbooks. However, most textbooks do not state this formula clearly or correctly. In this presentation, we will provide an example to show the flaw and will further suggest an extended Newton-Leibniz formula that we believe not only fix the flaw but also strengthens the natural connection between the indefinite integral and the definite integral, and enhance student's integration ability.

We think this presentation is valuable for all calculus instructors and textbook writers. (Received September 20, 2011)