

**APPLICATION OF AUTHENTIC INSTRUCTION AND
ASSESSMENT IN JUNIOR SECONDARY SCHOOL BIOLOGY IN
SRI LANKA: AN ILLUSTRATIVE STUDY OF GRADE 10 BIOLOGY,
UNIT 4 “INVOLVES ONESELF IN THE PREVENTION OF
DISEASES RELATED TO MAIN SYSTEMS IN HUMAN BODY”**

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Assessment of learning outcomes is an integral component of teaching and learning process. In Sri Lanka norm-referenced, paper pencil tests are the most commonly used method of assessment in schools and public examinations. The curriculum introduced in 2007 identified learning outcomes as competencies. Therefore beside the paper-pencil tests, most of the enlisted competencies in the Teacher Instructional Manuals of science subjects need to be measured with practical “real world” tasks those leading to Higher Order Thinking (HOT) cognitive skills, metacognition and soft skills. Such assessments are defined and relate more to ‘Authentic Assessment’ (AA). Hence, this study aims at ascertaining the learning outcomes applying AA beside the paper pencil tests. The researcher investigated how far AA could be employed in the teaching of Biology, in grade 10 using unit 4 of the biology curriculum. Firstly the current assessment practices in school level were assessed through a Focus Group Discussion (FGD) with the participation of experienced teachers and the students in grade 10 in the school where the research study was done. Additionally, the examination paper given for the GCE O/L (for the last 4 years) was analyzed based on the questions on the sub units 4.1 and 4.2 to determine whether they measured HOT skills, metacognition, and soft skills. Moreover, an investigation was carried out through a formal experiment with group of 93. The conventional instruction and assessment methods were employing control group and experimental group was exposed to Authentic Instruction and assessment methods. The study measured student learning outcomes with a pretest for comparability of groups, post test (1) and post test (2) for measuring HOT skills in two selected parallel classes in a mixed school. Both groups were interchangeably exposed to both AA and conventional instruction and assessment for two selected sub units. Learning outcomes of the students of experimental group were evaluated employing a rubric. The collected data were analysed using a mixed method. The pre test marks revealed that (Critical $t = 1.984$, $t = 0.082$, $p > 0.05$ and $t = 0.5579$ $p > 0.05$) both groups were comparable. Post test (1) proved that ($t = 0.192$, $p > 0.05$ and $t = 1.454$, $p > 0.05$) there was no content loss due to AA and instruction as many teachers fear. The post test (2) revealed that HOT abilities and metacognition of the experimental groups ($t = 6.284$, $p > 0.01$ and $t = 5.90$ $p > 0.05$) are statistically significantly better achieved by the Authentic group. Hence the study revealed that AA and instruction contribute significantly better in developing 21st century skills such as HOT abilities, metacognition, and soft skills.