

**CONCEPTUAL FRAME WORK AND DEVELOPMENT OF TOXICOLOGY IN THE CLASSROOM**

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**Introduction:** The "Toxicology in the classroom" courseware was developed based on systematic approaches incorporating learning theories, instructional models and principles and strategies in visual literacy, visual learning and participatory learning to ensure its effectiveness

**Development process:** The ASSURE model, an acronym for **A**: Analysis of student, **S**: State objectives, **S** : Select method, media and materials, **U**: Utilise Media and Materials, **R**: Require learner participation, **E**: Evaluate and Revise was used as a guide for the development process. The underlying theories that governed the development of these components were behaviourism, cognitivism and constructivism. Behaviourism focuses on the content or facts to be given or delivered. The learner is a recipient of instruction. The Cognitivism theory explains how information is received, processed and manipulated by the learner. Constructivism, on the other hand, focuses on the learner's prior knowledge and cognitive development. The learning environment is made as rich as possible to enhance students' ability to construct/assemble knowledge and resolve difficulties/ problem solving. The materials were developed to potentially raise children' cognitive processes beyond knowledge that is to higher levels in reading and interpreting visuals. In addition, Visualisation in Participatory Programme (VIPP) was used to encourage active participation among teachers and students. The evaluation process included content refinement, design refinement and instructional enhancement during the formative evaluation process. Test-runs on actual classroom practice was done during summative evaluation in three countries; Malaysia, Argentina and Ghana. Feedback from students were captured through video, photographs and audio recordings and documented for final enhancement to cater diverse students' multiple intelligence from diverse background and countries.

**Conclusion:** The development of instructional courseware "Toxicology in the Classroom" has been successfully accomplished based on sound theories and instructional model. The materials now are ready for dissemination worldwide for teachers and children's use