CLIMATE CHANGE IN SCIENCE LEARNING

NURYANI, LILIASARI, MULYATI

INDONESIA UNIVERSITY OF EDUCATION

CLIMATE CHANGE: WHAT IS IT?

- CLIMATE: A DESCRIPTION OF AGREGATE WEATHER CONDITIONS THAT HELPS DESCRIBE A PLACE/REGION
- AVERAGE OF ALL STATISTICAL WEATHER INFORMATION OVER A 30 YEARS PERIOD
- CLIMATE CHANGE: THE LONG-TERM FLUCTUATION IN RAINFALL, TEMPERATURE, AND OTHER ASPECTS OF EARTH CLIMATE

WHY CLIMATE CHANGE HAPPENED?

- HUMAN ROAM EARTH'S SURFACE
- HUMAN DEMAND MAGNIFIED
- TECHNOLOGY EVOLVED
- EARTH'S POPULATION INCREASED

PROTECTING HUMAN FROM CLIMATE CHANGE

- LEARNING CHARACTERISTICS OF THE ENVIRONMENT
- MEASURING CHEMICAL & PHYSICAL CHARACTERISTICS OF ENVIRONMENT
- MODIFY DECISION MAKING BASED ON SOCIAL & CULTURAL WISDOM TO SAVE THE EARTH

THREE-STEP PROCESS TO BECOME ENLIGHTENED CITIZEN

KNOW: **TAKING RESPOSIBILITY FOR OUR WORLD BY KNOWING HOW IT WOKS**

CARE: **HOW OUR ACTIONS AFFECT OTHERS AND AFFECTED BY OTHERS**

ACT: **DO SOMETHING, MAKE YOUR OPINION KNOWN**

THE AIMS OF CLIMATE CHANGE EDUCATION

- CITIZENS CAN IDENTIFY PROBLEMS AND PARTICIPATE IN THEIR SOLUTION TO A THREE-STEP PROCESS
- CITIZENS CAN MAKE INFORMED CHOICES HOW THEY INTERACT WITH THEIR LOCAL,NATIONAL, AND GLOBAL ENVIRONMENTS
- CITIZENS UNDERSTAND THE COMPLEX WORKINGS OF ALL ASPECTS OF THE EARTH SYSTEM AND THE TIME SCALES ON WHICH THEY OPERATE

INNOVATIVE LEARNING OF CLIMATE CHANGE

LILIASARI

INDONESIA UNIVERSITY OF EDUCATION

liliasari @ upi.edu

THE PROCESS OF LEARNING SHOULD BE:

INTERACTIVE, INSPIRING, JOYFULL, CHALLENGING, MOTIVATING TO BE ACTIVE AND CREATIVE

THE INNOVATION IN LEARNING ACTIVITIES

- FROM ATTENTION TO ACTIVITY
- FROM VERIFICATION TO INQUIRY
- FROM ANSWER TO QUESTION
- FROM COPYING TO SUMMARIZING
- FROM LISTENING TO PRESENTATION
- FROM GUIDED TO CREATE

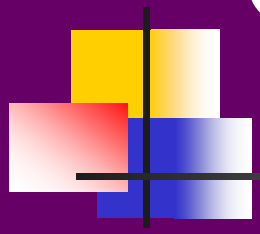
INNOVATIVE MODELS OF TEACHING ?

- INQUIRY MODEL OF TEACHING
- CONTEXTUAL TEACHING
- THEMATIC MODEL OF TEACHING
- CREATIVE-PRODUCTIVE MODEL OF TEACHING
- HIGHER ORDER THINKING SKILL MODEL OF TEACHING

INQUIRY TEACHING

- INQUIRY DEVELOPING
- PRODUCTIVE QUESTIONING
- CHALLENGING
- SCIENCE AS MYSTERY
- CRITICAL QUESTIONING

CONTEXTUAL TEACHING



- COGNITIVE AND AFFECTIVE DOMAIN
- START FROM DAILY LIFE
- VALUE BASED
- APPLIED IN DAILY LIFE
- SAFETY OF HUMAN & ENVIRONMENT
- AVOID NEGATIVE IMPACT

THEMATIC TEACHING

- BASED ON DAILY LIFE EXPERIENCE
- SCIENCE DICIPLINE RELATIONSHIP: SYSTEM, MODEL, CONSERVATION, CHANGE PROFILE, SCALE, EVOLUTION
- HANDS-ON & MINDS-ON
- LEARNING IN AND OUT OF CLASS

CREATIVE-PRODUCTIVE TEACHING

- CONSTRUCTIVISM BASED
- MODIFICATION OF LEARNING CYCLE
- APPLICATION OF ASSIMILATION-ACOMODATION
- CONCEPT APPLICATION (INTERPRETATION & RE-CREATION)
- CRITICAL & CREATIVE THINKING AS NURTURANCE EFFECT

HIGHER ORDER THINKING SKILL TEACHING

- HIGHER ORDER THINKING SKILLS AS NURTURANT EFFECT
- THINKING SCIENCE DEVELOPMENT: GENERIC SCIENCE SKILLS
- ICT BASED LEARNING

THANK YOU