

Fostering Higher Thinking among Students via Human-values in the Class

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Abstract --Teaching of human-values to students has assumed great importance in recent times. Courses have been introduced on 'human values' in academic institutions. However, student response has not been reassuring and they lack motivation to attend classes on human-values. Main reason appears to be that students do not appreciate the significance of human-values and their close links with higher thinking skills. Imbibing human-values can assist to develop higher thinking skills. Effective implementation of outcome-based education framework and use of mind-mapping technique can foster human values and higher order skills in the class.

Keywords: Human values, Higher thinking, Cognitive domain, Entrepreneurial traits, Mind mapping

I. INTRODUCTION

MODERN age has brought many distractions in a student's life that were absent in earlier generations. From internet, smart phones, TV, to digital gaming, etc. give way to such distractions. Students ignore studies and learnings, especially where they see little value in the course and its content. Human-values is one such course. Experience shows that student-perception and interest about this course is rather low, despite the fact, this is highly relevant in the present 'disruptive' times. Students will be better motivated to study such a course, if they know how the course will be relevant to their academic life, what will be their learnings which will be beneficial in life, especially from employment and career advancement perspective.

The growing concern among educationists, social leaders, and parents to impart Value-based Education (VBE) to students at all levels - school, college, and university - is highlighted in our New Education Policy 2020 [1] as well. VBE is being emphasized all over the world [2]. Aim is for students not only to understand the human values, but also to reflect and practice them in their daily life and contribute to society through harmonious living, good citizenship and ethics.

This paper addresses the issue of how students can be motivated to learn and imbibe human-values along with their normal studies in the class. *Once students become aware that by learning and practicing human-values, they also develop higher thinking skills (complex problem understanding and solving, creative and innovative thinking, analytical and critical*

thinking), which will be useful in their professional career and help to excel in life, they may get interested. This is possible by illustrating that there is close connection between them. Studies in Neuroscience [3,4] clearly demonstrate that human-values and higher-level thinking are codependent, as the base of both is cognitive, i.e., brain's ability to process information, and includes thinking, memory, recall, mental flexibility, problem solving and learning. Any course on human-values will help to ignite higher thinking skills among learners, if implemented appropriately.

II. HUMAN-VALUES AND BRAIN

Human-values are inner "*Beliefs, Concerns, Disposition and Norms*" which a person has, as for example, honesty, truth, respect, appreciation, trust, empathy, gratitude, brotherhood, etc. These are conditioned by one's culture, bringing-up and guided by conscience, according to which human being is supposed to live and conduct himself [5]. Values develop in human beings during bringing and growing up, by personal experiences, observational learning, and environmental influences. They are abstract, overly complex, and dynamic in nature. Despite all this, values are extremely important in life as they guide our living and attaining personal or social goals and outcomes. Being aware about them, understanding and exploring their features are strongly needed and can be highly beneficial for self, family, and society as they contribute towards harmony, peace, and happiness in life [6,7].

Values affect our thinking, brain, and mental performance as their base is also cognitive. There is massive requirement to focus continuously on teaching human-values to learners at all stages of life, as imbibing and practicing value system among humans is slow process and requires constant effort. This is possible if the human-values system is embedded into the education system. Our traditional education system is highly cognitive-oriented, and there is hardly any emphasis on developing higher skills or values. Teaching and fostering values leads to increased mental activity, human sensitivity, concerns and knowledge of relevant standards and ethical conduct. It develops better appreciation of societal, environmental, and universal concerns and harmony among human beings. It is feasible to integrate teaching/learning of human-values in

the educational system itself via Outcome-based Education Framework [8,9] and, also ensure inculcating higher thinking among learners.

III. OUTCOME-BASED EDUCATION FRAMEWORK AND VALUE SYSTEM

Outcome-based Education Framework (OBEF) is student-centric, wherein teaching/learning/improvement of the student is the focus, and all educational processes and practices are developed around this. Bloom taxonomy [9] form the basis of OBEF. According to Bloom taxonomy, human thinking and learning is divided into three main domains:

- Cognitive - “mental and thinking” domain
- Affective - “emotion and values” domain
- Psychomotor - “manual and physical” domain

Cognitive Domain : This domain is classified into six levels:

- Remember: Remembering, knowing, recognizing, recalling, describing, listing
- Understand: Understanding, Interpreting, exemplifying, classifying, summarizing, inferring, comparing, explaining
- Apply: Applying, executing, implementing, classifying, calculating, constructing
- Analyse: Analysing, differentiating, organizing, attributing, comparing, outlining
- Evaluate: Evaluating, checking, critiquing, assessing, concluding, judging
- Create: Creating, generating, planning, producing, composing, synthesizing

Affective Domain and Human-Values: Cognitive domain mainly concerns the academic contents of the discipline. Here mental processes play dominant role. Emphasis is on mental activities, such as understanding, analysis, evaluation, and synthesis, mainly from the knowledge acquisition, application, and generation perspective. Our traditional education system has been focusing mainly on cognitive teaching/learning.

Affective domain concerns Human-values, which involve feelings, attitudes, emotions, and values. It includes the ways in which people deal with internal and external phenomenon/ stimuli emotionally, such as enthusiasms and motivations. This domain is categorized into five levels, which concern various aspects of human-values, such as appreciating, understanding, imbibing and practicing them [5].

(a): Receiving/Attending

This refers to the learner’s sensitivity to the external stimuli – awareness, willingness to receive, or devote attention. Here individuals have the perception about various areas, willingness to receive with respect and adopt new knowledge, accept themselves and be receptive to positive values and attitudes. A person begins to develop new attitude and values, by

- exploring and observing self – noticing one’s actions and

behaviour, open to learning and seeking activity;

- listening to self and noticing reactions – being conscious of one’s point of view and seeing how other people respond to it;
- being inquisitive and identifying emotions – sensing feelings and wanting to find out more;
- being open, positive, and appreciative – welcoming, and expecting to find novelty and having an optimistic state of mind and feeling secure;
- experiencing emotions, feeling loved and being truly valued;
- feeling joyful and accepting griefs– feeling connected with reality and finding humor in experience and identifying griefs and accepting loss.

(b): Responding

This refers to the learners’ active attention to stimuli and his/her motivation to learn – acceptance, willing responses, or feelings of satisfaction. Individuals actively respond to new stimuli, external influences, values, attitude, and behavior. They participate in activities and respond. At this stage, the individuals not only follow certain phenomena but *imbibe* other virtues, by

- articulating feelings and emotions;
- loving and respecting – loving oneself and demonstrating appreciation and affection for others;
- caring and giving – responding to others’ needs and helping them;
- addressing and coping – Facing Life’s challenges and managing stressors;
- believing in oneself and persisting – developing, maintaining self-esteem, and continuing despite difficulties;
- responding to failure and accepting help – growing in response to barriers and negative results and surmounting one’s personal limitations with help from others;
- being humble and seeking self-assessment – allowing accomplishments to speak for themselves and practice self-assessment, analyse past performance to improve future performance.

(c): Valuing

This refers to the learner’s beliefs and attitudes – acceptance, preference, or commitment to a value. Valuing is concerned with the significance or importance, an individual attaches to a particular object, value, or behaviour. This ranges in degree from the simpler acceptance of a value (desire to help) to the more complex level of commitment (accepting responsibility for caring). *Valuing is based on the internalization of a set of human-values, but clues to these values are expressed in the individual’s explicit behaviour.*

This level involves:

- exploring and understanding beliefs – questioning, researching the basis of one’s beliefs and attitudes;

- identifying and cultivating values – labelling main beliefs, aligning actions-values, and achieving consistency;
- trusting and reflecting self – having an accurate sense of self-worth and increasing self-awareness;
- caring for self and valuing family/significant others –attending to one’s personal emotional, physical, and spiritual needs and enjoying closeness in a family and social group;
- valuing nature and appreciating diversity – Valuing Natural Laws and seeking to understand and harmonize one’s actions with natural laws, respecting differences as a measure of a healthy ecosystem and social system;
- aligning with social values – acting according to mutually empowering ethics;
- validating values and accepting ownership – assuming responsibility for one’s behaviour and taking personal ownership from experiential “tests”.

(d): Organizing

This refers to the learner’s internalization of values and beliefs involving (i) conceptualization of values, and (ii) organization of a value system. As values or beliefs become internalized, the learner organizes them according to priority.

An individual brings together different values and organizes them into priorities by contrasting them, resolving conflicts between them, and building a consistent and unique value system. Here, the emphasis is on analysing, comparing, relating, evaluating, and synthesizing values. Attempt is to involve individuals who have a responsible attitude in the group, in addition to improving the relationship with humans.

This level emphasizes:

- managing and controlling emotions - regulating oneself and using feelings as an aid in problem solving, judgment, decision making and learning;
- responding to requests, recognizing, and managing conflict – setting boundaries to maintain personal integrity and noticing inconsistencies in situations, achieving resemblance in the face of life’s inconsistencies;
- being self-disciplined, decisive, and prioritizing – choosing with confidence and addressing what is most important and persisting regardless of emotions;
- being self-conscious and challenging one’s values – synchronizing one’s abilities with one’s beliefs and raising the expectations for one’s values and standards.

(e): Characterizing (Internalizing)

This refers to the learner’s ability to internalize values and relates to his behaviour that reflects (i) a generalized set of values; and (ii) a philosophy about life. At this level, the learner is capable of practicing and acting on his values or beliefs. Here, an individual has a value system that controls

his behaviour for sufficiently long time, which reflect his distinctive “life-style”. Now, his behaviour is widespread, consistent, and predictable.

This level concerns

- developing oneself, adopting and synergizing beliefs and feelings;
- interpreting and associating feelings – connecting emotions and understanding the social and historical meaning of emotions;
- analysing and interpreting feelings – understanding causes of complex emotions and anticipating future emotions;
- exploring emotions and recognizing personal potential – learning and growing from both pleasant and unpleasant emotions and identifying strengths and areas of improvement;
- growing culturally, caring and being empathic – applying insights from human differences and responding affirmatively to complex differences in others’ views and taking long-term responsibility;
- acting on beliefs and accepting outcomes – being ethically consistent, adjusting to reality and activating one’s latent potentials.

Characterizing (internalizing-within) domain is concerned with the emotional life of individuals and reflects their beliefs, attitudes, impressions, desires, feelings, values, preferences, and interests. Focus is on exploring, understanding, analysing, comparing, evaluating, relating, assessing and adopting *Values and allied concepts*. Implementation of this domain would lead to the development of values, ethics, aesthetics, positive, and self-understanding among individuals.

As one moves from lower to higher affective levels (a to e), understanding of complex nature of human-values start evolving. There is overlap among the levels. In fact, consequence and outcome of a given level depends on the effect of the prior lower levels.

It is obvious that affective domain concerns exploring, understanding, analysing, judging, justifying, synthesizing, adopting and, at times, inspiring and acceptance of human-values. All this involves variety of mental processes, reasoning abilities and decision making. Thus, implying strong association among affective and cognitive processes. Higher-level skills involve all these attributes, as for instance, critical thinking encompasses various affective skills such as self-regulation, fairness, willingness to consider new evidence/alternative, and adopting authentic validations.

Affective domain includes factors such as attitudes, perceptions, values, etc. as discussed above. Teachers can educate students and increase their effectiveness by incorporating both affective and cognitive domain in planning and teaching courses,

delivering lectures, seminars and assessing student learning, especially in the Computer Laboratory and Project-based courses. Project-based Learning is a powerful instructional method for instilling human-values among students.

IV. TEACHING/LEARNING IN THE AFFECTIVE DOMAIN

Affective domain teaching/learning assists students in internalizing human-values, professional and human-centred characteristics. Expression of these often involve statements of opinions, beliefs, or VALUES. Affective domain learning need be expressed in the form of Learning Outcomes using Bloom Action verbs of various levels and defining Learning outcomes of the course. *We propose generic learning outcomes for a course on Human-values, incorporating elements of affective and cognitive domains [Section 6].* Values-oriented learning outcomes focus on ways that knowledge or skills gained in the course, will enrich students' cognitive and affective experiences throughout their lives and guide the conduct of daily life activities. Moreover, affective domain teaching can help to imbibe entrepreneurial traits and skills, as learners can assess their value choices, reflect on their value beliefs, revise their value systems, and then create their own approaches for innovation and creativity [10].

V. TEACHING AND EXPLORING HUMAN-VALUES VIA MIND-MAPPING TECHNIQUE

Mind-mapping Technique [11] and Socrates Questioning Method (SQM) [12] may be deployed to explore cognitive aspects of human-values and higher thinking skills [13,14]. SQM allows to investigate and study complex ideas, getting to the truth of things, opening-up matters and issues, analysing concepts and assumptions, distinguishing what we know from what we don't know, and so on. This all is highly relevant for exploring and understanding Human-values.

Questions are formulated using the keywords: WHY, WHEN, WHERE, WHICH, HOW, WHO, WHAT, WHOM. This way many of the intractable issues concerning Values can be probed, clarified and understood. Adopting this method, along with Mind-mapping technique, can help to explore and teach human-values and thereby train students to discover the essence of values and thus ignite higher thinking among them in the class. *Computer Lab experiments can be designed to implement this approach via mind-mapping Software Tools [15].* This may also help to promote reflective thinking, student engagement and help identify realistic life issues.

VI. INCORPORATE HUMAN-VALUES IN THE TRADITIONAL CURRICULA

Deeper understanding of human-values systems requires in-depth exploration, interpretation, assessment, and evaluation (cognitive skills) of several aspects, concerning beliefs, habits, behavior, attitude, culture, societal environments, natural

habitat, and so on. Learning outcomes may be designed to focus on these aspects and mental skills of learners. Clear understanding and articulation of *intended learning outcomes* facilitates the design of an effective curriculum, teaching/learning strategies and appropriate assessments to measure achievement, and to plan the learning process for individual students. The proposed learning outcomes, designed using Bloom-verbs (*italicized in the text*) of affective and cognitive domains, are as follows.

On completing the course on Human-values, the student will be able to learn, imbibe and demonstrate their responses and learnings as regards:

VLO1: Critical Analysis and Evaluation
Develop capacity to think critically and creatively, including an ability to identify and *articulate* beliefs, concerns, attitudes, and complex multi-cultural societal issues, *apply* reasoning and critical analysis to arrive at logical understandings.

VLO2: Problem Solving and Decision making
Judge and *analyse* complex life-situations and problems reaching mature inferences, using ethical principles and precepts of Human-values, *leading* to overall harmony, and *establishing* culture of Trust and Tolerance.

VLO3: Collaborative and Social Work
Function effectively as an individual, and as a caring member or leader in diverse societal teams, and in multi-cultural settings to *serve* the cause of peace and *help* creating harmony among all people.

VLO4: Environment and Sustainability
Understand the practice and impact of the Human-values in societal, environmental, technological and natural contexts, *show* familiarity and be *responsive* to sustainable *change* by adhering to Values and social norms.

VLO5: Exploration and Communication
Explore and *communicate* effectively complex relevant issues related to real life-aspects, with the family, community, society, and world at large, and *propose* solutions to serve the cause of universal well-being that *promote* peace.

VLO6: Life-long learning and Ethics
Know the need for and have the preparation and ability to *engage* in life-long learning and *develop* philosophy to always act ethically and justly.

VLO1-VLO6 are *intended* course learning outcomes which encapsulate both the cognitive and affective components. We want students to learn and demonstrate these when the course is completed. Syllabus, other curricular activities, teaching/learning/assessment strategies can be designed accordingly.

Mind-mapping software tools can help to explore and appreciate the characteristics of human-values. Effective implementation of the above outcomes and appropriate assessment via rubrics can aid to foster both human-values and higher thinking skills among learners during their stay in the institution.

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