INITIATIVE ON ISLAM AND MEDICINE
INSTILLING HIKMAH IN HEALTHCARE

Unit 4: Human Enhancement and Transhumanism

Are We Changing the Human Being and Should We Change Our Being?

Lesson 2: Treatment vs Enhancement

Time Length: 40-50 min.

INSTRUCTIONAL OUTCOMES

Next Generation Science Standards (NGSS):

Science and Engineering Practices:

- Asking Questions and Defining Problems: Students explore and define the distinction between enhancement and treatment in the context of human enhancement.
- Engaging in Argument from Evidence: Debating whether certain biomedical interventions fall under treatment or enhancement requires students to use evidence and reasoning.

Crosscutting Concepts:

- Cause and Effect: Understanding the effects of biomedical interventions and their classification impacts societal norms and individual health.
- Systems and System Models: Analyzing the human body as a system affected by biomedical technologies.

LS3: Heredity: Inheritance and Variation of Traits: Exploring how genetic modifications and enhancements could impact human heredity and genetic diversity.
LS4: Biological Evolution: Discussing transhumanism in the context of human evolution and the potential for future human development.
ETS1: Engineering Design: Considering the design and ethical implications of biomedical technologies used for enhancement.

Common Core Standards:

English Language Arts Standards:

CCSS.ELA-LITERACY.RST.9-10.8**:** Assessing the credibility of the sources (like the CNN article) and noting any discrepancies among the data or information presented.
CCSS.ELA-LITERACY.SL.9-10.1: Engaging in collaborative discussions, building on others' ideas, and expressing their own clearly and persuasively.

Mathematics Standards:

- Statistics & Probability: Interpreting data, such as the effects of certain biomedical interventions, and understanding the statistical norms and deviations that might apply in the context of human enhancement.

History/Social Studies Standards:

CCSS.ELA-LITERACY.RH.9-10.2: Determining the central ideas or information of a primary or secondary source; provide an accurate summary of how key events or ideas develop over the course of the text.
CCSS.ELA-LITERACY.RH.9-10.9: Comparing and contrasting treatments of the same topic in several primary and secondary sources.

Content Learning Outcomes:

- Identify key components of transhumanist ideology
- Discern transhumanism-based narratives and elements within popular media
- Distinguish between Islamic theological perspectives on human enhancement and its purposes and secular bio-scientific views

Materials:

- **Presentation Slides** (Slides 25-28)
- **Triple-Entry Vocabulary Journal** (Student Responsibility)
- CNN article: Transhumanism: Meet the cyborgs and biohackers redefining beauty

Instruction/Teacher Facilitation:

❖ In the last lesson, we discussed the key components and ideas of transhumanism. Let's now look deeper at how changes are being made and to what extent should we benefit/improve or "change" human beings.

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❖ Therapy vs Enhancement
  ➢ Differentiation
    ■ Medical practice vs. non-medical practice -
      ● Whatever doctors/allied health professionals do as licensed practitioners is considered therapy.
      ● Non-medical practices are not therapy; if not prescribed by a doctor or a health professional, it is not considered therapy.
    ■ Restoring to normal function vs. augmenting function
      ● If something creates equality of opportunity in society = therapy
      ● Whatever removes dysfunction/disability and restores normal functioning so that a person can then continue to have that equal opportunity would be considered therapy. (Restoring a species-typical function is the goal of therapy.)
    ■ Anything *more* than this would be considered enhancement.
    ■ Treatments address maladies while enhancements target normal function/being
      ● If improving function beyond the species-specific norm of biological function = enhancement
      ● For someone who is on the normal curve in their functioning and wants to be taller than that normal height; this would be an enhancement.
      ● Comparatively, if a person is off or below the normal curve, and they want to get back onto that normal curve, anything done in such a case would be therapy.

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❖ Group Thought/Discussion Activity: Enhancement vs Therapy Case Examples

➢ Introduce these 3 case examples:

1. Tommy John Surgery - a surgery to repair the ulnar collateral ligament (UCL), which tears due to overuse, usually in athletes that use their elbow a great deal, like pitchers. While playing for the Los Angeles Dodgers in 1974, Tommy John injured his UCL and became the first person to undergo ulnar collateral ligament (UCL) reconstruction surgery. When the surgery was successful and he returned to major league baseball, the surgery was named after him.
    - After surgery, in the recovery stage of the first year, people are not able to use their elbow to its full potential, like throwing the baseball as fast as they used to, but after that recovery stage, they are often able to throw the ball faster than they used to.
2. LASIK eye surgery - most commonly performed laser refractive surgery to correct vision problems. During LASIK surgery, a special type of cutting laser is used to change the shape of the cornea. LASIK often offers improved vision without the hassle of glasses or contact lenses. In general, there is a good chance of achieving 20/40 vision or better after refractive surgery.
3. NuClarity - a brain supplement that helps improve cognitive function by increasing neurotransmitter efficiency which will in turn boost memory retention, clarity, and information recall. It claims to reduce brain fog and increase cerebral blood flow.

➢ Instruct students: Within your groups come to a consensus on whether each of these cases is an example of therapy or enhancement, and be able to explain why. (Allot about 7-10 minutes for students to discuss and come to a conclusion within their groups.)

➢ Have a student representative from each group report their decisions to the whole class.
    - Be sure each group presents their decisions along with their reasoning as to why they came to that decision concerning each example.
    - Reinforce concepts as they report back

➢ **Results:**

1. **Tommy John Surgery -**
    - **Therapy - because surgery was needed to restore function. The beneficial side effect is that the surgery actually improved function more than normal. The intention, though, was to rectify an injury.**
    - **Enhancement - because the ligament commonly used to replace the torn ligament is taken from the leg which is usually thicker than an arm ligament, therefore it is stronger and enhances functioning post-surgery. Also, the torn ligament is caused due to consistent stress or use on that elbow, where a person could change profession and avoid the need for this surgery. It is their desire to be a pitcher, and not a need. The normal population does not use the elbow to this degree, so the "normal" use threshold is well below this.**
2. **LASIK Surgery -**

- **Therapy - because trying to restore vision from impaired or blurred vision to clear vision.**
- **Enhancement - because it is normal to have visual impairments as one ages, so bad eyesight is actually the norm, especially at older ages.**
- **Question to consider: Why are we changing the body part, instead of changing/fixing the environmental causes of this decreased ability to see? Like the lights and types of lights that are used, the screens and their configuration that is harmful to our eyes and play a part in their deterioration.**

3. **NuClarity -**
   - **Enhancement - because it is being used to boost cognitive functioning, not restore or bring to a normal level from an impaired or decreased level.**
   - **Therapy - because if a person is required to memorize and internalize facts, the brain will have information overload. But society expects you to know these things, so to attain or maintain societal expectations and do well at school/workplace, this supplement will help a person be within that expected "norm."**

➢ **Results Analysis - Students can argue either way for each of these, and the teacher should challenge their decision with the alternative to push their reasoning and allow them to see that the decision whether something is therapy or enhancement can be justified either way.**

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❖ Summary
- ➢ Transhumanism
  - Transitional state of human → post-human
  - Goal is to remove human frailties
  - Utilize biotechnology to do so
- ➢ Disease
  - Definitions vary culturally and over time
  - Can be functionally based; teleology-based (fulfilling its functional purpose); subjectively-based
  - Healthcare addresses these societally-based 'needs'
  - There is a 'normal' curve to human capacities - but this is a value judgment because it can change over time
  - Enhancement vs. treatment/therapy can be difficult to differentiate at times

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❖ Culminating Group Activity: Real-life Case Analysis
- ➢ Have the students read the CNN article: **Transhumanism: Meet the cyborgs and biohackers redefining beauty**

- Group students and have them pick a person from this article to look up and find out more about. OR Group students based on the person they are interested in learning more about.
- Students must:
  - Look up the story behind the person that was chosen.
  - Analyze their case in terms of concepts you learned today (Physician's responsibilities, Enhancement vs Therapy/Treatment). Would you have made those modifications to this individual, as a Muslim physician? Why?
  - Share with the rest of the class - the case of the individual and if you would perform the procedure for the modifications with reasons.