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Teaching Science in Engineering Freshman Class in Private University in Jordan

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A United Nations initiative for the Arab region that established and calculated National Intellectual Capital Index has shown that Jordan is the wealthiest Arab country in its National Human Capital Index (i.e. metrics: literacy rate, number of tertiary schools per capita, percentage of primary teachers with required qualifications, number of tertiary students per capita, cumulative tertiary graduates per capita, percentage of male grade 1 net intake, percentage of female grade 1 net intake) and National Market Capital Index (i.e. metrics: high-technology exports as a percentage of GDP, number of patents granted by USPTO per capita, number of meetings hosted per capita) despite its low ranking when it comes to National Financial Capital (i.e. metric: GDP per capita). The societal fabric in Jordan fully justifies this: the attention paid to education is extreme and sometimes is considered fanatic (e.g. marriage of a lot of couples needs to wait until both graduate from the university). Also, the low financial capital has forced a lot of people to become resourceful in order to provide decent living standard to their beloved ones. This reality is partially manifested in the sharp increase in the number of universities (i.e. 10 public and 20 private ones) relative to a population of around 6.5 million.

Once in an engineering freshman classroom, it is totally up to the lecturers teaching science in private Jordanian universities to excel in their performance and find a way to inject the needed scientific concepts into the students' brains. For that, clips from movies that are relevant to the topics and truthful in their scientific essence have been tested (e.g. to explain the pressure on humans due to rapidly increasing "g" force, a clip from the movie "Armageddon" proved very helpful to Physics 101 students, and entertaining at the same time), plastic toys have also been tested to illustrate simple physical concepts to the same students (e.g. a set called The Junior Engineer covers vast concepts relevant to Newton's Laws and Work-Energy Theorem, while originally aimed at 3-year old kids), and YouTube has become so rich in it scientific content that it has not been hard to find any experiment or simulation there so that the students connect the dry blackboard and chalk to real life. As freshmen are still immature and sensing their way through, wondering if they will be able to get the title of Engineer or not, the usage of such familiar mediums and tools such as movies, toys, videos and simulations to illustrate basics to them has proved efficient and is regarded as an ideal ice-breaker towards a challenging journey of engineering classes. As long as the scientific content is not compromised, we believe that more mediums should be tested. This paper will highlight these affairs.