




Strategies to Handle Over-Smart Students in Class

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The existence of one or more over-smart students in classroom makes it difficult to maintain a smooth flow of lecture by the number of questions (interrupting the instructor many times during the course of a discussion), sometimes unrelated to the subject matter being discussed and at other times well beyond the comprehension level of the rest of class. Sometimes, it may happen that the instructor does not know, what the student is talking about or could not know the answer to that particular question. The speaker had the strategy to be completely honest in these situations and often say, “We’ll find out together” or “Please, send me some more details and then we’ll discuss”. A better option may be to exercise the option of e-mail or chat on ZOOM to deal with such questions. Many times these students know the answer to a puzzle posed by the teacher and an abrupt but incomplete answer takes away the charm of **inculcating creative thinking and training to perform critical analysis**, the prime objectives of education in the third millennium (the speaker asked about turning points on a circle in a mechanics course, and one of the participants, a senior student auditing the course, immediately, commented that every point on the circle was a turning point, but was unaware of the reason behind that — of course, that took away the opportunity of all the students to think and explore the situation and were deprived of the excitement of discovery). Such students are bubbling with the ideas and would like to open up and think deep into the concepts because they are so much enthusiastic about the subject matter. Still there are students, who are over-confident and at times rude. The art of answering is the key to success of teaching. Over-enthusiastic students should be tackled with courtesy and professionalism and should never be discouraged from asking questions. Instead, the instructor could politely steer the conversation towards the main course of discussion. One of the ways to know the personality of each student, including the over-smart or the over-confident, is to probe into the minds and the backgrounds of these students. The speaker asked all regular students as well as those entering **the Early Talent Research Participation Program** to write **life-history essays** (at the start), which were thoroughly read and discussed with the respective students. These essays helped determine the strengths, the weaknesses, the expectations and the aspirations of these students. The lecture then shifted to discussing intelligence and popular theories of intelligence. The psychologists define intelligence as the ability to learn, the ability to recognize problems and the ability to solve problems. One of the most popular theories of intelligence put forward by Raymond Catell and John Horn states that can be divided into 2 types: crystallized intelligence and fluid intelligence. The first one deals with acquired knowledge and information, which include facts and verbal or mathematical skills. The second refers to skills such as abstract reasoning, logic and **problem-solving**. James Flynn, an American political scientist has found out that from his research of more than 30 years that the average IQ scores have increased steadily over the past century in the United States and other western industrialized nations. Each generation scores higher on an IQ test than the generation before it by 3-10 points. According to Flynn people are becoming smarter at skills that are more important in our society today, in particular, abstract thinking. On further examination of the increase in the IQ test scores, there seems to be little increase in general knowledge questions or those involving vocabulary or mathematics, whereas the increase is on abstract questions. The increase may be attributed to better education and improved diet and health. In the previous century, society progressed from agricultural to industrial and is now information-based. Hence, people have become better at thinking in abstract, scientific terms. Charles Spearman, an English psychologist, presented the two-factor theory of intelligence in the early twentieth century. He divided the intelligence into 2 groups, which involved the g-factor (general intelligence) and the s-factor (specific intelligence). According to Spearman, the g-factor represents the overall or general intelligence that underlies a person’s performance across various cognitive tasks. This factor is responsible for an individual’s ability to reason, solve problems and comprehend information. In other words, the g-factor represents a person’s general mental capacity. In addition to the g-factor, Spearman proposed the s-factor, which refers to specific abilities or skills that are task-specific. These specific abilities include talents in areas such as music, art, or athletics. Unlike the g-factor, the s-factor is independent of the general mental capacity and represents more specialized abilities that are not related to overall intelligence. Next, the difference between an intelligent person and a genius. In Roman times, genius was not something, which one achieved but rather an animating spirit that adhered itself to people and places. During the eighteenth century, Romantics gave genius the meaning used these days: someone with special, almost divine abilities. In reality, real geniuses transcend the confines of their particular domains. Here are some of the myths, which need to be get rid of:

Imagination is more important than knowledge
Albert Einstein

Myth No. 1: Genius is mostly about genetics

In 1869, British polymath Francis Galton published his book *Hereditary Genius*, in which he argued that genius is determined by genetics, or ‘inheritance’. In reality, genius is not propagated genetically such as blue eyes or baldness. Genius parents do not produce genius babies. There seems to be no ‘genius gene’. Genius requires a certain mind-set, an unflappable persistence.

Myth No. 2: Geniuses can pop up anywhere and at any time

The Atlantic’s CityLab analyzed the birthplaces of MacArthur ‘genius’ grantees and discovered that “winners were born all over the map. The density and the intimacy of an urban setting nurture creativity. In fact, all of these places have a higher degree of tolerance and ‘openness to experience’. Geniuses are less like the shooting stars and more like flowers, a natural outcome of creative ecology.

Myth No. 3: Geniuses are smarter than the rest of us

Many of the history’s most eminent figures possessed only modest IQs. A creative genius is less about ‘raw intelligence’ and more about ‘elevated vision’. According to AI expert Margaret Boden, “A creative genius is someone with the ability to come up with ideas that are new, surprising and valuable”.

Myth No. 4: Geniuses are grumpy loners

Geniuses are rarely loners. They do cherish times of solitude and they, often, toggle between these moments and the more sociable ones.

Myth No. 5: We are smarter now than ever

We are producing a greater number of competent scientists, but not necessarily more geniuses, who have the ability to look at what everyone else is looking at — and see something different.

Little minds discuss people.

Average minds discuss events.

Great minds discuss ideas.

Genius works in silence

Links to previous keynote lectures delivered at the Karachi University Educational Conferences

1st Educational Conference

2nd Educational Conference

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