



Unscientific Malaysia: How declining science literacy endangers our nation

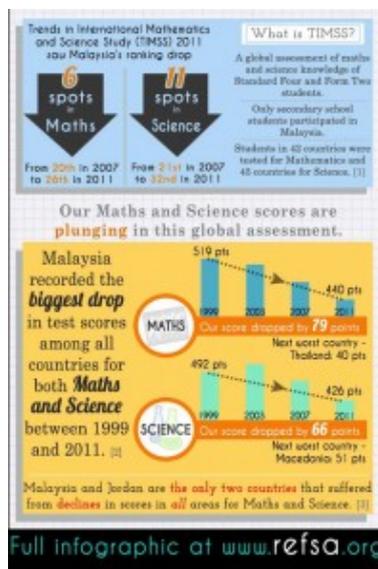
Two international assessments paint a disturbing picture on Malaysia's level of science literacy. In 2009, [PISA \(Programme for International Student Assessment\)](#) revealed that Malaysia's science literacy among 15-16 year old students ranked 52 out of 74 countries. Malaysia scored 422 points, which was below the international average of 463. At this score, Malaysia was ranked lower than China (ranked 1), Hong Kong (3), Singapore (4), Japan (5), Korea (6), and even Thailand (51).



Science literacy among Malaysians show an alarming declining trend (image from [beritasemasa.com](#))

Another international assessment, [TIMSS \(Trends in International Mathematics and Science Study\)](#), reported that Malaysia's science literacy among 14-year old students have declined by nearly 17% from 2003 to 2011. Malaysia scored 510 in 2003, 471 in 2007, and 426 in 2011. The TIMSS 2011 report also showed that Malaysia scored

below the international average and was ranked 32 out of 45 countries. Our neighbor, Singapore, was ranked first in science literacy, and impressively, 40% of their students were placed in the “Advanced” competency category. In sharp contrast, only 1% of Malaysian students qualified for this group. Shockingly, the bulk of Malaysian students (62% of those tested) were placed in the lowest science competency group.



Malaysia ranks among the lowest in the world in terms of science literacy (image from refsa.org)

Students' interest in science subjects have been steadily declining. In the mid-1980s, the ratio of students taking science to arts subjects was 31:69. This ratio has declined to 22:78 in the mid-1990s and has remained rooted at 20:80 even by 2012.

One problem is many Malaysians still see science as only a body of knowledge for explaining how the world works — or as only a subject at school. But science is much more than that. As succinctly explained by the late [Carl Sagan](#), “*Science is a way of thinking*”.

Science helps us to think more critically. Science guides us so we ask the right questions and to find and evaluate evidence for answering these questions. Food security, global warming, clean energy, government subsidies, and social and education problems are some of the many issues which we require science to understand them.

If Malaysia is to develop holistically, Malaysia needs to put science as a foundation upon which this country develops, implements, and evaluates strategies on health, education, economic, environment, and social issues.

Malaysia also needs to inculcate science knowledge and skills among the people. Malaysia needs people, especially the young, to appreciate and understand science, even if they are not pursuing a science-based career. Malaysia needs people to understand and appreciate the importance and contribution of science to the country. Malaysia needs people who are not only well informed but also able to think critically. In other words, we, Malaysians, need to make science central in our lives.



Science, not emotions, is required to resolve important national issues such as the Lynas controversial project (photo from)

Lack of scientific thinking carries serious implications. If we separate science from our everyday lives, we lack an effective method that we can use to distinguish fact from fiction. Without science, we make poor decisions and become easily confused in the deluge and often conflicting waves of incoming information. We also become susceptible to untruths and misguided plans. A good example of such susceptibility is some people's gullibility in the promises made by some political parties during the recent General Election 2013 (GE13). These self-gratifying promises such as free water and cheaper fuel, electricity, and cars have serious repercussions on our country's sustainable growth. People's low science literacy is causing them to base their decisions more on emotions and blind optimism than on intellectual contemplation. *"When people learn no tools of judgment and merely follow their hopes, the seeds of political manipulations are*

sown,” remarked the late [Stephen Jay Gould](#).



Geo-engineering for rain using advanced, err, magic. This is what happens when science takes a back seat (photo from keithrozario.com)

Our poor literacy in science is perhaps partly to be blamed for our ignorance in our country’s science, technology, and development efforts. For instance, all my students (aged between early to late 20s) from two of my university classes this semester have not even heard of our country’s [Economic Transformation Programme \(ETP\)](#) and [National Key Economic Areas \(NKEAs\)](#), with their respective Entry Point Projects (EPPs). Although they have heard of our country’s aspirations to become a high income and developed nation, they have little inkling how these aspirations would be achieved.

As remarked by [Mark Henderson](#) in his book [“The Geek Manifesto”](#), science is often taught in schools only by presenting the findings and products of science. However, it is also just as important to teach how science works, how problems are approached and solved, and how to think critically.



“The Geek Manifesto”
by Mark Henderson,
Transworld
Publications, 2013.



Mark Henderson

Henderson further adds that science should also be entrenched in governments. The political culture should be such that science is used as a problem-solving tool, and that all government policies should be developed using scientific evidence. Politicians should not be indifferent to science but need to understand the power, necessity, and contribution of science to the country. Malaysia only spends 0.64% of her GDP on research and development, compared to 2-4% for developed countries.

Henderson bemoans the lack of politicians with a science background, in particular those with experience in scientific research. Malaysia faces such a problem too. [Malaysia's current cabinet lineup](#) only has two ministers with a

science background compared to the previous cabinet lineup that had eight ministers with a science background. Consequently, the role of Malaysia's National Council of Professors is even more crucial than before, to ensure the voice of science is always heeded by the government.

In the aftermath of GE13, serious concerns were raised to address the rise of racial disharmony among Malaysians. But I believe another serious concern we should address is to arrest the declining science literacy. Perhaps then, in the future, whenever we attend a *ceramah politik*, people would demand an intellectual discourse on important national issues instead of boorish activities of mud slinging, blame, and discussions of sex video scandals.

References

1. [Trends in International Mathematics and Science Study \(TIMSS\) 2011 Results in Science](#)
2. [OECD's Programme for International Student Assessment \(PISA\) 2009](#)
3. [The Geek Manifesto by Mark Henderson](#)



Malaysia General Election 2013: Ubah? Be careful what you wish for. You might just get it

Some say ignorance is bliss. But that is not true. Ignorance makes us stupid, and stupid people make wrong decisions. But in the coming General Election 2013, I am afraid we Malaysians are voting out of ignorance.



Malaysia's General Election 2013 is too close to call.

Those voting for the opposition vote more out of blind optimism, based on a dangerous assumption that that things would get better with change—any change—instead of voting out of real hope based on clear and achievable proposals. Issues like Hudud law, encroachment of Islamic regulations into non-Muslims' way of life and rights, unstable alliance between opposition parties, unachievable populist promises, and dubious moral standards of their de facto leader appear curiously understated by the opposition supporters.

No toll? No AES? Free water? Free internet? Free education? Cheaper cars? Lower fuel prices? Lower electricity rates? Higher salaries? Yes, please, yes. But take a step back. Look at the larger picture. Consider what are the consequences of such populist demands? Have we become so self-absorbed, shortsighted, and simple-minded that our selfish pleasures must be served first and placed above all?

Malaysians have become selfish. Instead of asking "what we can do for our country", we have become "what the country can do for us".

A good government is an establishment that does not only manages well a country, but much more importantly, it is one that steers the country into a path of sustainable development in terms of education, economy, culture, and collective responsibility. Without a clear sense of direction or purpose, people work, contribute, toil, love, live, and fight with little sense of connection and meaning to their country.

A government, as I see it, acts in some ways like a parent who listens patiently and with empathy to the citizens, but, in wisdom and courage, acts for the greater and ultimate good of the people even if these acts are unpopular among some people. A government is weak if it bows only to populist demands without considering the repercussions.

Unfortunately, those voting for the present government are also voting out of ignorance. Unresolved questions over rising crime rates (even if statistics oddly point to the other direction) and corruption are the black eye of this current government. Lack of avenue for public debates and lack of information have deprived us of invaluable data with which we can form our decisions.

This election has become an exercise of who can shout the loudest on issues of corruption and blame. Lots of mud-slinging and sex videos, but almost no important issues discussed by any political side.

So May 5, 2013 has become an important day for all Malaysians. I have already decided whom I am going to vote, but my decision, as do most Malaysians, I suspect, is based heavily on corrupted and missing data. *God help us ...*