



University of Jaffna
Professor Alagaiah Thurairajah
Memorial Lecture - 2019

**“Education in Sri Lanka -
Friend or Foe?”**

By
Dr. A. P. Nihal Somaratna
Senior Lecturer,
Head/ Dept. of Civil Engineering,
SLIIT
Malabe

On
Monday 11th November 2019
at 3.00 p.m

At
Kailasapathy Auditorium,
University of Jaffna.





University of Jaffna

Professor Alagaiah Thurairajah Memorial Lecture - 2019

**“Education in Sri Lanka -
Friend or Foe?”**

By

Dr. A. P. Nihal Somaratna

Senior Lecturer,

Head/ Dept. of Civil Engineering,

SLIIT

Malabe

On

Monday 11th November 2019

at 3.00 p.m

At

Kailasapathy Auditorium,

University of Jaffna.

Prof. Alagaiah Thuraiajah



Message from the Competent Authority

It is my honour and pleasure to welcome all of you to Professor Alagaiah Thurairajah Memorial Lecture.

Late Professor Alagaiah Thurairajah was highly respected professional, not only in Sri Lanka but also in the world as Scientist. He was the leader among researchers in his field in the world. He encouraged young graduates to carry out research and trained large number of research students. He was the former Vice-Chancellor of the University of Jaffna from September 1988 to March 1994. During the period of his service, University of Jaffna had faced lots of difficulties and downs and only a person of his caliber could manage such situation.

I wish to thank Dr.Nihal Somaratna for agreeing to deliver Prof. Alagaiah Thurairajah Memorial Lecture titled on "Education in Sri Lanka - Friend or Foe" which is very useful to students and researchers and I wish Dr. Nihal Somaratna every success in his endeavors to bring out the issues in his field.

K. Kandasamy

Prof. K. Kandasamy
Competent Authority

Message from the Congregational Authority

It is my honour and pleasure to welcome all of you to this special message. I trust you will find it helpful.

Our Professor Alvin T. Sison was highly respected professional, not only in the United States but also in the world as a scientist. He was the leader among leaders between the world and the university, being grateful to carry out research and trained large number of research students. He was the former Vice-Chancellor of the University of the Philippines from 1982 to March 1994. During the period of his service, Dr. Sison had faced lots of difficulties and downed many a person of his caliber could manage such situation.

I wish to thank Dr. Sison for giving me the opportunity to be a part of the Congregational Authority. He was a "Friend or foe" which is very useful in research and researchers and I wish Dr. Sison to be successful in his endeavor to bring out the issues in his field.

Richard J. ...
Prof. R. ...
Congregational Authority

Education in Sri Lanka – Friend or Foe?

Nihal Somaratna

*Head of the Department of Civil Engineering
Sri Lanka Institute of Information Technology*

**(Prof. A. Thurairajah Memorial Lecture, University of
Jaffna, Nov. 11, 2019)**

Prof. K. Kandasamy. Mrs. Thurairajah, Prof. Athputharajah,
And the other members of the staff of the University of Jaffna,
Friends, Ladies and Gentlemen.

Delivering the Prof. A. Thurairajah memorial lecture would be an important occasion for anyone. For me it is especially important. As one of my teachers at Peradeniya he had a lasting influence on me – both personally and professionally. It is with a profound sense of gratitude that I embark on this task today. This is a rare privilege. And it is indeed an honour for me to have been invited to deliver the memorial lecture today. I wish to place on record my sincere thanks to the organizers of this event – especially the Dean, Prof. A. Athputharajah, and his colleagues in the Faculty of Engineering – for giving me this opportunity.

Prof. Thurairajah that I knew

I wish to take a few minutes from the time allocated for this lecture to share with you just a few of the many nostalgic memories of Prof. Thurairajah that I have.

It has been 25 years since the untimely death of Prof. Thurairajah. During this time much has been said about his achievements and his contributions to our country. You would have learned about his academic brilliance, ground-breaking

research at Cambridge University, more than two decades of service to the Faculty of Engineering, Peradeniya starting from the time it was in Colombo, and the invaluable service he rendered under extremely trying conditions as the Vice Chancellor of the University of Jaffna. I do not wish to dwell further on these matters. What I would like to do instead is tell you a little bit about the simple man that he was – about the dedicated teacher that he was, who deeply cared for his students.

Prof. Thurairajah was a great teacher in the broadest sense of the word. Not only did he teach well in his classes but he also cared about his students even beyond the walls of the class room. In return his students loved him and respected him. I know this very well. I was one of these students.

It is with pride that I say that he was a teacher of mine. And later, a senior colleague when I joined the faculty as an assistant lecturer. And a friend at all times.

Even before I entered the Faculty of Engineering at Peradeniya I had heard of Prof. Thurairajah from school friends who had entered the Faculty ahead of me. I remember my first day in the Faculty. The Dean of the Faculty spoke and introduced several other staff members to us. I was taken by surprise when he presented a tall, handsome young man with a pleasant smile on his face as Prof. Thurairajah. I must have expected a stern looking older person to fit the image of a professor in my mind. That was the first time I saw him in person.

I remember quite well the first time he showed that he knew me as a student. It was in our second year. He taught us structural analysis. He was the Dean of the Faculty at that time. Even though I had entered the Faculty at the top of my class

and had maintained the position in the first year examinations also, I did not have any direct contact with him. One day in his lecture he asked a question. There was no immediate response from the class. I was seated towards the back of the lecture theatre. He looked straight at me and called me by name. I was surprised. Not by the question. But by the realization that he had taken note of me.

The following year I had much more direct contact with him. I became a member of the executive committee of the Engineering Students' Union – the ESU. First as the Junior Treasurer and later as the President. This was a very turbulent time at Peradeniya. Strikes by non-academics and by students severely disrupted the functioning of the university. This unrest culminated with the police shooting a student dead. The university remained closed for months.

Quite often we - as the committee of the ESU - had to meet Prof. Thurairajah who was the Dean. He was always very cordial to us – even when we were making what might be considered unreasonable demands. But he was also firm. He would agree to do what he thought was right and proper. Otherwise he would smile and say 'No'. We could not press any further. His friendly manner and pleasant smile was disarming!

He went out of his way to help us – his students. I can tell you of many instances that illustrate this point. But in the interest of brevity let me just tell you one.

One of my batch mates – his name is Sunil Jaltotage – got quite sick and was admitted to the Kandy hospital. His friends took turns to stay with him. Prof. Thurairajah was the Dean and was aware of the situation. In fact he asked me about Sunil's

condition a couple of times. After about a week at the Kandy hospital there was no improvement and the family wanted to take Sunil to a hospital in Colombo. There was no means of transport. It was not possible to get an ambulance. We were helpless – or so it seemed. I went to the one person who might help. Prof. Thurairajah did not hesitate even for a moment. He said “Take my car with the faculty driver to take him to Colombo”. Remember that these were the old days when even Deans did not have official vehicles. He was offering his own personal car for this purpose. That is how Sunil was taken from the Kandy hospital to Colombo. Recently Sunil wrote to me in an e-mail that he will never forget how Prof. Thurairajah saved his life. Sunil is not alone in feeling this way. There are many, many others who feel enormous gratitude towards him. I am one of them.

Even after we were graduated he took an interest in our progress. He encouraged his students to pursue graduate studies and in many cases found them places in foreign universities to do so. Today in many universities in Sri Lanka as well as around the world his students occupy important positions – mainly in geotechnical engineering. To my knowledge there is no other academic in Sri Lanka – at least in engineering – who has promoted so many students for graduate studies.

After completing our degree several of us from our batch were recruited to the staff at Peradeniya as assistant lecturers. We had to find places for post-graduate studies. I was interested in studying structural engineering. On several occasions Prof. Thurairajah told me that if I was planning to study geotechnical engineering – his field of specialty – he would help me to find a university for graduate studies. But I was keen on structures.

Subsequently, with the help of Prof. M. P. Ranaweera – who also was one of the great teachers we had in the Faculty - I was able to get a place in the University of Illinois in Chicago, USA. One day in a discussion regarding my plans I told him I wanted to come back to the university after post-graduate studies. He said he won't be surprised if I decided to stay on in the USA. He said that at that time I couldn't say much on this because I didn't know what was out there. It looked as if only one of us would be right. But as things turned out both of us were right to some extent. I did not return immediately after completing post-graduate studies. I stayed back and worked in industry for about 6 years. So he was right. But then, in 1991, I returned to the Faculty. So I kept my word. I hope Prof. Thurairajah felt happy and took some satisfaction in that at least some of his students were returning to serve our country just like he had done many years ago.

By the time of my return to Peradeniya Prof Thurairajah had moved to the University of Jaffna as the Vice Chancellor. But I had the opportunity of meeting him when he visited Peradeniya. I never imagined it would be the last time I would see him alive. But alas, that was what fate had in store for us.

Prof. Thurairajah was a towering figure in the academic and engineering circles in Sri Lanka. There was much demand on his time. But that did not prevent him from giving some time to his undergraduate students. That is what I admire about him.

I think what Kipling wrote long before Prof. Thurairajah was even born fits him perfectly:

“ If you can talk with crowds and keep your virtue,
If neither foes nor loving friends can hurt you,
If all men count with you, but none too much;

If you can fill the unforgiving minute
With sixty seconds' worth of distance run,
Yours is the Earth and everything that's in it,
And – which is more – you'll be a Man, my son! ”

Yes. Such a Man – a Great Man - was he.

He dedicated his life to educating the youth of this country. The title I have chosen for this lecture poses a question about education. About education as it is practised in Sri Lanka. Is it a friend or a foe?

Friend or Foe?

I believe everyone present here today has benefitted from education. In fact most of us are involved in education – mainly university education. Obviously we all think it is something worth doing. It is an article of faith among us that education is a positive influence. It makes the students more enlightened and productive. And more useful citizens. It helps to elevate their standards of living. This has a beneficial effect on the entire society. An educated citizen will be able to participate better in the society's decision making processes and steer society in the right direction. These are some of the benefits that justify spending a substantial amount of public funds on education. I accept these arguments and I believe in the positive effects of education. That is why I have returned to Sri Lanka and chosen the career of a university teacher. I served as a teacher in the Faculty of Engineering at Peradeniya for nearly 25 years and I have been serving in my present capacity for a few years as well.

But then why am I posing this question to you – to this distinguished audience that has benefitted from education and that is involved in education? Is education as implemented in

our country a friend or a foe? All in all is it beneficial to society or not? I have some concerns and thoughts that I wish to share with you.

There is a famous quotation about education that is widely cited. It is assigned to several different people including Albert Einstein:

“Education is what remains after one has forgotten what one has learned in school”

What is important is the training of the mind for logical reasoning and analytical thinking. This has been highlighted in a quotation from Martin Luther King, Jr.

“The function of education is to teach one to think intensively and to think critically. Intelligence plus character - that is the goal of true education.”

On many occasions my friends from industry have called on me to recommend to them names of suitable graduates for recruitment. What were the characteristics of the prospective recruits that they were looking for? A good academic record, of course. Some of them had very specific requests. They said they were interested in graduates who could get things done – who could lead teams to achieve goals. Some even said very high academic performance was not essential. But they would like graduates who had been all-rounders – who had taken part in extra-curricular activities – sports, drama, music etc. Or even politics! These qualities are what Martin Luther King, Jr. called “Character”. When I look around and consider the accomplishments of my contemporaries at the university and of my students I can see very well the justifications for these requests.

Inculcation of these qualities in our students is also a part – a very important part – of education. It needs to start in schools and continued in the universities as well. We need to prepare our students to face the challenges of the future. Giving them knowledge – or more precisely access to knowledge – is necessary but not sufficient. They need to be able to analyze problems and come up with solutions. This needs logical and analytical abilities. The solutions to the increasingly more complex problems that they will have to face in the future will require creative and innovative ideas.

Is our education system preparing our students for this?

The urgent problems that the world is facing today were not even recognized as such a few decades ago. For example: Global warming, climate change, sea level rise, waste disposal, urbanization, pollution, nuclear waste, population explosion. All these are new challenges that the current generation has to face.

Sri Lanka is not immune to these problems. In the recent past we have seen in news reports how air pollution is creating serious problems in cities such as Beijing and New Delhi in our region. A few days ago it was reported that Sri Lanka also was affected by these incidents of air pollution. Sri Lanka is considered to be among the countries that will be affected most by sea level rise. In Colombo we have a serious waste disposal problem. In time to come other urban areas also might be faced with similar problems. The list can go on. I haven't even mentioned the grave socio-political problems we face. We all know the numerous problems that our country faces.

Fifty years ago people did not even recognize some of the problems of today. Similarly some of tomorrow's problems might be beyond our comprehension today. But today's students have to be prepared to face these yet undefined problems of tomorrow.

Are we doing a good job in preparing them for the future? Are we encouraging them to be creative? To be innovative? To be un-conventional?

When this issue is discussed among academics many of them agree that the students need to be better trained in logical and analytical thinking rather than mere regurgitation of what they have memorized from textbooks and class notes etc. One of the most frequently offered explanations is that the students even in the university have the "tuition mentality". They have only been trained to answer typical problems in conventional fashion. When faced with a new problem they have difficulties in logically applying the basics that they have or at least should have learned.

There was an undergraduate student who used to come to my office and discuss his studies and the problems he faced. To earn some income he was conducting a tuition class for A/L students and sometimes its timing clashed with his classes in the faculty. I pointed out that successfully completing the degree was the number one priority because that would open many other opportunities for him.

One day I asked him a question. I said "you are a teacher in your class. I am also a teacher here in the university. Based on your experience what can you suggest for me to do a better job as a teacher?". Without any hesitation he explained. "You can't do in the faculty what I have to do in my tuition class. Here you teach us the basic theories and let us think and apply them in appropriate situations. But I can't do that in my tuition class. I have to teach the material in a section and then explain all the different ways a question can be formulated to test this material. And I have to describe how each type of question can be answered.

Otherwise I will lose the students.” I thought he gave me an honest and illuminating answer. There is a difference between teaching a subject and teaching how to answer questions based on the subject.

Today tuition classes have become an integral and essential component of our education system. Almost every student seems to go for them. I have been told that there are tuition classes even for grade 5 students to prepare them for the scholarship exam. Long time ago – close to half a century ago – when I was an advanced level student at Mahinda College, Galle, very few students attended tuition classes. The teachers in the school frowned upon their students attending tuition classes. But now the situation has reversed. Only very few students do not go for tuition classes.

I have some personal experiences related to tuition classes.

I have two sons; they are grown up now. They attended a reputed private school. Getting admission to state schools was not an easy task. After completing grade 11 and sitting for the O/L exams in December my younger son had to stay home for a few months until the school would start A/L classes. That would be in June or July because the A/L exams would be held in August and the graduating class would not leave school before that. But my son went to school every afternoon for basketball practices -- he played for the school team. One day he told me that on the way to practices he met a few teachers at the school entrance. He had asked one of them when his classes would start. She told him “It would be in a couple of months’ time. But you must have started going for classes by now”. He explained to me that by classes the teacher meant tuition classes! I was flabbergasted. I could not believe that the teachers take it for granted that their students would be attending tuition classes.

After his A/L classes started one day I attended a parent – teachers’ meeting. At one point I was having a conversation with one of his teachers. In front of me the teacher told my son that he can be a good student but he needs to study harder. Then he asked my son whether he was getting help from me. And quite casually he said “But you must be attending classes”! I knew what “classes” meant. Once again I was shocked. I just wanted to ask what on earth was my son doing in school if he had to attend private tuition classes elsewhere to learn. But I didn’t. It would have been embarrassing. And I also knew that the teacher was being honest and sincere. It was not his fault. He was simply pointing out the reality. Perhaps the fault was actually mine – I am old-fashioned and I expect, quite naively, the students to actually learn in school!

Students in schools now have to attend two parallel systems – the school in weekday mornings and the tuition classes in the afternoons and weekends. I have spoken to students and parents who say there are some tuition classes that start in the early morning – 5 am. These students have no time for anything else. Extra-curricular activities take a back seat. It looks like one can’t do both. One has to make a choice. Do your studies or take part in extra-curricular activities. It is only a rare individual who can handle both.

Once I had an interesting conversation with a principal of a leading school. He told me that he was considering banning all extra-curricular activities to students in the grade 11 who had to sit for the O/L exams at the end of the year. Now this was a school considered to be a power house of sports. I was surprised, to say the least. But he explained that the students had to study hard for the O/L exam and they hardly had time for extra-curricular activities. I had to disagree. In any case I don’t think this plan

was implemented. But the mere fact that the principal was considering it is a sign of where things are headed. Once again, in his defense, I must say that the principal was just trying to come up with a solution to overcome a difficult situation.

What is driving this madness? Intense competition to enter universities is one major factor. In some cases one needs all A's to gain admission to a university. So it is only natural that students will engage in a single minded pursuit of high grades in the A/L exam. They will do whatever it takes to earn high grades.

In this extremely competitive environment creativity and innovation take a back seat. The examination system is unforgiving – failures will be severely penalized. Creativity and innovation carry inherent possibilities of failure. They are to be avoided. Time tested conventional approaches with near zero probability of failure is the safe way to go. Good bye, creativity. Good bye, innovation.

This in turn leads to a series of inter-connected complications:

- Demand for high grades
- Tuition classes
- Competition to enter “Good” schools
- Demands for high level of performance in the O/L exams.
- Need to excel in Grade 5 scholarship exam to be able to get admission to a good school
- Gaining admission to a good school at grade 1
- Demands by trade unions for places in good schools for the children of their members

When students who have gone through this process enter the universities they expect the same type of spoon-feeding in the universities too. I have seen many student feedback sheets where

they say “give us solutions to tutorials; and marking schemes for past exam papers”. Now I am told that there are tuition classes for university students too. There are agencies that would do their assignments; write their project reports or theses.

All these are mere symptoms of the root cause.

Root Cause and Possible Solutions

The root cause, most probably, is the lack of adequate tertiary education opportunities. We need to expand them. Universities, Technical Colleges, Vocational training facilities, other professional colleges in law, accountancy, finance etc. should be expanded and/or multiplied. If we can thereby reduce the intensity of competition to enter these facilities then the pressure on the students might ease off. They might even become creative and innovative.

The knee-jerk reaction to this type of proposal by administrators is that there are no funds to implement them. Everyone knows that financial resources available from state are limited. There have been demands in the recent past for 6% of GDP to be allocated for education. At the moment it is much less.

Currently university education at state universities is free of tuition fees. If state universities can be expanded to cater to the increased demand that would be excellent.

However, if the state cannot provide all the financial resources required that should not be used as an excuse to avoid expansion of opportunities. Instead other options should be explored. The United State provides some good examples. They have a mixed system of universities: State Universities that receive a certain amount of funding from the state governments co-exist

with private universities which do not receive direct funding from state or federal governments. It must be emphasized that most of these "private" universities are non-profit institutions. All the well-known private universities belong to this category. Usually the tuition fees at state universities are lower than those at private universities. But many of these universities have very generous need-based financial aid packages that are tied to the income of a student's family. In some cases the aid package will cover not only full tuition but room and board as well.

We also have to look at different models to finance the expansion of tertiary education facilities. At the moment a considerable number of our young people who are not accommodated in state universities go to foreign universities and pay substantial sums as tuition fees. If handled properly this could become a source of financial resources for expansion of our university system.

The hope of a better future for the next generation is the force that drives the development of society. This is true for a family and this is true for a country. Parents want to make the future of their children better. Lack of state funds should not be an excuse to deny these children the educational opportunities that they aspire to.

Right now there are very little tertiary educational opportunities outside of the state sector. Even if one achieves the prescribed minimum level of performance at the A/L exams one might not get a chance to pursue a degree unless he is admitted to a state university. Just imagine what the situation would be if we were to apply the same principle to the provision of health care. Imagine that only the government hospitals are allowed to function. Actually this was the situation many years ago. But

then the demand for better and broader health care facilities resulted in a system of private hospitals that peacefully co-exist with government hospitals. We must explore similar solutions for the expansion of tertiary education too.

If there is a will there is a way.

Decision Making

Who should be making the decisions regarding how our education system is operated? I think for far too long we have allowed bureaucrats to make these vital decisions without informed public debate and discussion.

A case in point is the reduction of the number of subjects a student takes at the A/L exam. In the past this used to be 4. In the science streams there were two paths: physical sciences where the four subjects were Pure Mathematics, Applied Mathematics, Physics, and Chemistry; and the biological sciences where the four subjects were Physics, Chemistry, Zoology, and Botany. In the mid 1990's teachers from science faculties of our universities proposed that all science students should be required to study same four subjects and that they need not be required to decide between physical science path and biological science path. The reasoning was that the A/L should try to impart a broad science education. The four subjects proposed were: Physics, Chemistry, Mathematics (combination of pure and applied maths), and Biology (combination of Zoology and Botany). I think this was a very sensible proposal.

But when this proposal went to the administrators they thought of reducing the number of subjects to 3. I have the impression that this was based on cost-cutting. They decided to discard the idea of a broad based science education which was

the main objective of the proposals. The system of separating students into physical science path and biological science path was continued. Physical science path had Mathematics, Physics, and Chemistry; biological science path had Physics, Chemistry, and Biology.

The end result was that the original proposal was mutilated beyond recognition and the number of subjects at the A/L was reduced from 4 to 3.

Subsequently in place of pure mathematics and applied mathematics two new subjects produced by combining parts from the two mathematics subjects were introduced as Combined Mathematics and Higher Mathematics. At one point the engineering faculties were asked which three subject combination should be required at the A/L for engineering students. We at the Peradeniya Engineering Faculty responded by saying that both combinations - Physics, Combined Mathematics, and Chemistry as well as Physics, Combined Mathematics, and Higher Mathematics were acceptable to us. Even this was discarded with the lame excuse that the other two engineering faculties had opted for only Physics, Chemistry, and Combined Mathematics. As a result Higher Mathematics never became popular. The number of candidates taking it never reached even 500. So much for logic and reasoning!

We should have demanded that the reasoning behind these decisions should be openly discussed. But we didn't. It is the students who are paying the price. Their choice has been reduced further.

The most recent player to enter this arena is our own professional organization – the Institution of Engineers, Sri Lanka. They have come out saying that for obtaining associate membership of the institution one must have taken this one combination. Nothing else! I strongly feel that for engineering students Physics, Combined mathematics, and Higher Mathematics is a perfectly acceptable combination. I would love to hear the justification for the IESL decision. It is taking us back - not forward. Actually we should encourage students to even explore other relevant subjects such as Biology, Economics, and Sociology. That would be progress.

This type of meaningless, artificial restrictions would make education even more of a burden for the students. They should be allowed to study what they like as far as possible.

Make Education a Friend – not a Foe

I have a few suggestions as described above.

- Expand tertiary education opportunities
- Explore funding options
- Eliminate artificial restrictions
- Allow students some choice
- Make decision making transparent

It is high time that all stakeholders – all of us - the parents, the teachers, the students, the employers, the politicians – took an active interest in this vital area. I have a feeling that if he were alive today Prof. Thurairajah would be involved in such efforts. He believed in making education accessible. I remember when we were undergraduate students there was a

workers education unit in the Faculty. It was meant to provide educational opportunities to working people. Prof. Thurairajah actively supported these efforts.

It is by actively taking part in these processes that we all can honour his memory. I have placed before you my thoughts and my concerns and even some suggestions in the hope that it will act as a catalyst for you to think about these issues, if you haven't been doing that, and for you to act. I wish all of you the courage and the determination to do so.



Dr. Nihal Somaratna

Dr. Nihal Somaratna is a Head of the Department of Civil Engineering at Sri Lanka Institute of Information Technology (SLIIT) where he has been a Faculty member since July 2014.

Dr. Nihal Somaratna completed his M.Sc and Ph.D. at University of Illinois at Chicago, and his undergraduate studies at University of Peradeniya. His research interests lie in the area of Numerical methods in solid mechanics, finite element simulation of alkali aggregate reaction in concrete with special reference to Victoria dam, and safety of dams.

From 1991–2017, he was a Senior lecturer at Department of Civil Engineering, University of Peradeniya, Sri Lanka. He held the several positions: from 2005 – 2008, Head of the Department of Civil Engineering, University of Peradeniya; from Feb 2004 – Sep 2004, Fulbright Senior Research Scholar in the Department of Aerospace Engineering, University of Michigan; from 2001 – 2002, Chairman of the Board, National Engineering Research and Development Center of Sri Lanka; From 1985 – 1991, Project Manager and Senior Structural Analyst at Engineering Technology Associates, USA.

Dr. Nihal Somaratna has published more than forty international and national research publications and received several awards: Prof. E.O.E. Pereira memorial orator at the Institution of Engineers, Sri Lanka, (2012); Prof. E.O.E. Pereira prize for the best paper presented at the annual sessions of the Institution of Engineers, Sri Lanka, (2011); Fulbright Senior Research Scholar (2004), at the Department of Aeronautical Engineering, University of Michigan, USA.