

End of streaming in education

STREAMING: THE PAST ...AND THE FUTURE

Two members of Goh Keng Swee's team look back to 40 years ago when they proposed making streaming key to the then new education system

Amelia Teng
Education Correspondent

They were known by different names: system engineers, the "darling dozen" or the "Goh" team.

Their mission in 1978 was to fix a broken education system, where students were dropping out of school with low levels of literacy and having trouble even staying in secondary school.

After studying the problems in Singapore's schools, the study team of 12 – mostly in their late 20s and 30s – led by then Deputy Prime Minister and Defence Minister Goh Keng Swee, concluded that streaming was the solution.

Despite a heated debate over four days in Parliament in March 1979, the team's recommendations were accepted and swiftly adopted in the same year.

The new education system – detailed in the landmark 1979 report that is now part of the National Archives – that the group of 12 thinkers designed has been central to Singapore's education over the years.

The Goh Keng Swee report, as it was known, had recommended that students learn at their own pace, and a child's academic ability be assessed at Primary 3.

But 40 years later, the streaming system that the Goh team, many of whom were trained engineers, had put in place is coming to an end, with the Education Ministry's announcement on March 5 that secondary schools will no longer have the Nor-

mal and Express tracks in 2024. Primary schools had already done away with streaming since 2008.

EDUCATION IN THE EARLY YEARS

Professor Lim Siong Guan, 72, who was part of the Goh team, tells Insight that the New Education Report "had the same motivation as education has always had in Singapore, which is to help each child be the best he or she can be according to their talents and abilities".

The professor with the Lee Kuan Yew School of Public Policy, who was head of the civil service from September 1999 to March 2005, says that the percentage of students going on to secondary school after the Primary School Leaving Examination (PSLE) had been relatively low.

In the 1970s, a third of every Primary 1 cohort did not make the cut for secondary school. Failure rates were high, at 41 per cent for PSLE candidates and 40 per cent for O-level candidates in 1976.

Part of the problem was that pupils were promoted without much consideration of whether they were ready for the next level.

Children of varying abilities were going through the same rigid education programme. In school, most of them were learning English and Mandarin, which they did not speak at home. Back then, most families were speaking dialects.

Studies in 1975 also showed that at least 25 per cent to 33 per cent of Primary 6 pupils did not meet minimum literacy and numeracy standards.

Ms Low Sin Leng, 67, who was also part of Dr Goh's team, says: "We were focusing on what was wrong with our system and what we could do better. Attrition was one of the things that shocked us."

"The principle is that not everyone has the same level of capability, and if you push all of them through



Professor Lim Siong Guan and Ms Low Sin Leng were part of the study team, whose members were mostly in their 20s and 30s. PHOTOS: GIC, ST FILE

Children of varying abilities were going through the same rigid education programme. In school, most of them were learning English and Mandarin, which they did not speak at home. Back then, most families were speaking dialects. Studies in 1975 also showed that at least 25 per cent to 33 per cent of Primary 6 pupils did not meet minimum literacy and numeracy standards.

the same system, the weaker pupils would not be able to keep up and the gap will become harder to close over time.

"The education system at that time did not give such pupils an opportunity to learn something else,

and hence they dropped out. We felt this was unacceptable and could not go on."

THE NEED FOR STREAMING

Explaining the work that the team did, Prof Lim says: "The particular

context of Dr Goh's study was to increase the number of students who go on from primary school to secondary school, and to do this in a way which can be handled by the resources of school buildings and teachers.

"The goal was to make sure that students were taught at a level most suited to their learning ability.

"Streaming was a logical way to do this if we reckon that the 'total learning ability' of the child is reflected in the 'total examination results' the child has been able to get."

Prof Lim was 32 years old when the report was released in 1979 and the principal private secretary to founding Prime Minister Lee Kuan Yew.

One of their key recommendations was that the less academically able pupils would be streamed to the Extended or Monolingual stream, where they could complete their primary education in seven or eight years.

The pupils who fared better would go to the Normal track and finish primary school in six years.

Similarly, the team proposed that weaker students be placed on a five-year track to complete their O levels and, at the end of Secondary 4, take an examination to decide if they could make the cut for Sec 5.

Ms Low, who was 27 and had just given birth to her first son in June 1978, the same year she was asked to be part of Dr Goh's team, says the group's main task was to gather feedback from educators on the ground, study the problems and come up with recommendations.

A President's Scholar and Colombo Plan Scholar, Ms Low had been working as an engineer for a few years at the then Radio and Television Singapore, the predeces-

LOGIC OF BANDING continued on B6

Subject-based banding will help Normal stream students make it to higher education and level up, and go some way in reducing social stratification, say experts

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What are the chances of a Normal (Technical) or Normal (Academic) stream student making it to a local university?

Not too good, going by the figures released by the Education Ministry (MOE) in Parliament last year in response to Member of Parliament Louis Ng.

From 2015 to 2017, of the graduates from the six local universities, about 1 per cent (one in 100) had come from the N(T) route and 5 per cent from the N(A) route. The rest – 94 per cent – came from the Express stream.

There is a higher chance of Normal stream students making it to the polytechnics, though.

Of those who graduate yearly from the five polytechnics, 5 per cent are from the N(T) stream, 35 per cent from the N(A) stream and the remaining 60 per cent from the Express stream.

Another set of figures released by MOE, however, paints a more upbeat picture, showing that more students from the Normal streams in secondary school have made the cut for higher education in the last decade.

Figures show that more than 10 per cent of Secondary 1 N(A) students move on to publicly funded universities, up from 5 per cent 10 years ago. For those in the N(T) stream, for students who are the

weakest academically, more than 20 per cent have made it to at least polytechnic diploma courses, up from 15 per cent a decade ago.

When it released the figures, MOE attributed the better outcomes to streaming, which it said has helped students learn at a pace suited for them by customising teaching and learning approaches.

So, with the move to subject-based banding, can Singaporeans expect to see more Normal stream students level up and make it to the polytechnics and universities?

WHAT THE MOVE INVOLVES

Earlier this month, Education Minister Ong Ye Kung announced that from 2024, streaming in secondary schools will come to an end.

In its place will come subject-based banding, where students take subjects taught at one of three difficulty levels, based on their abilities and strengths. These are the G3 level, which corresponds to today's Express stream; G2 level, to the N(A) stream; and G1 level, to the N(T) stream.

At the end of four years in secondary school, students will take a common national examination and graduate with a common certificate, which will show the subjects taken and the levels at which they were learnt.

Gone will be the days where students walk down three separate paths and where each student learns all the subjects at a pace designed for a particular path.

The Sunday Times spoke to education experts, MPs who had argued against streaming, and parents on what outcomes they expect with the changes.

All are generally for the move towards subject-based banding and expect Normal stream students to do better and be able to access more higher education opportunities.

Mr Ng says that when MOE re-

STREAMING, OVER THE YEARS

1980s: Pupils are streamed at the end of Primary 3, into the Normal Bilingual, Extended Bilingual or Monolingual courses. This is later replaced by EM1, EM2 and EM3 streams. Courses at the secondary school level are divided into three: Special (English and mother tongue at first-language level), Express and Normal.

1994: Normal course is split into Normal (Academic) and Normal (Technical) streams. The latter allows the 15 per cent to 20 per cent of the cohort who had previously dropped out after primary school to progress to secondary school and have 10 years of schooling.

1995: Express students can take Higher Mother Tongue language as a subject. Special stream merges with Express.

2002: Upper secondary students are allowed to take higher-level subjects if deemed suitable – that is, a N(A) student can take an O-level subject.

2004: EM1 and EM2 streams are merged.

2008: EM3 system scrapped. Subject-based banding introduced in primary schools, through which they provide a differentiated curriculum for Primary 5. Pupils take a combination of subjects at two different difficulty levels, Standard or Foundation level.

2014: Subject-based banding extended to lower secondary students; pilot scheme starts in 12 schools in which those from N(A) and N(T) streams who score at least an "A" for English, mathematics, science or mother tongue in the Primary School Leaving Examination can study the corresponding subjects at Express level.

2018: Limited subject-based banding rolled out to all secondary schools.

2020 to 2023: Full subject-based banding to be offered in 25 pilot schools where students will be able to study humanities subjects at a higher level from Secondary 2. The schools will also try out new form class arrangements instead of the traditional sorting by Express, N(A) and N(T) streams.

Amelia Teng

leased the figures showing only 6 per cent of university graduates coming from the Normal stream, it struck him as being rather low.

The Nee Soon GRC MP, who made an impassioned plea in Parli-

ment recently to do away with streaming, had pointed out the fact that Normal stream students tend to have a lower socio-economic status – from 2014 to last year, 69 per cent of secondary school students

who received financial help from MOE were in the Normal stream.

He tells Insight that the low percentage of Normal stream students heading to university shows that there is very little mobility in Singapore's education system.

"We need to make sure that students who may not do well initially in their education journey can still have a chance in the later part of their education journey," he says.

National University of Singapore economist Kelvin Seah has called for tracking of the higher education and job prospects of Normal stream students.

He says the old practice of streaming students into tracks is likely to have "disadvantaged" Normal stream students by constraining their life pathways.

For instance, a student placed in the N(T) stream may find it incredibly hard to progress on to a junior college (JC) or a polytechnic subsequently since he or she would still have to spend much time and effort sitting the N(A) levels followed by the O levels.

Also, N(T) students from poorer families who have to support their families financially might understandably opt for the more direct Institute of Technical Education route before entering the workforce, even though they would have liked to have a tertiary education.

"If we observe a sizeable increase in the proportion of Normal stream students attending the JC and polytechnics after the move towards subject-based banding, then this would be indicative (it) helped decrease rigidities within our education system," notes Dr Seah.

Ms Denise Phua, MP for Jalan Besar GRC, who for years has argued against streaming, says the big change is that while in the past, a

SOCIAL MIXING continued on B6



Mr Nicholas Ooi, co-founder of social enterprise Bantu, studied at the ITE and polytechnic after secondary school and graduated last year with an honours degree in computing from the National University of Singapore. The 28-year-old says: "It took me a longer journey but I don't have any regrets." ST PHOTO: GAVIN FOO

Former EM3 and Normal student carves out tech path

It took him a longer time than most people, but Mr Nicholas Ooi, 28, finally graduated last year with a university degree.

From a young age, he had always belonged to the bottom rung of the educational system – until he found his niche in computing as a teenager.

From the EM3 stream in primary school, he went on to Normal (Technical) in secondary school and then the Institute of Technical Education (ITE), before entering Ngee Ann Polytechnic.

His turnaround began at the ITE, where he completed a Nitec in information and communication technologies, and that was also where he was given the chance to develop his interest in computing.

"The pace was good for me, it gave me the time and opportunity

to discover my interests within and outside of school," says Mr Ooi, who took part in information technology (IT) competitions and even experimented with computer games and platforms on his own.

He did well at ITE and earned a scholarship to enrol in polytechnic, where he studied IT.

Then, last year, he graduated from the National University of Singapore with an honours degree in computing.

Of his educational pathway, he re-

flects: "The subjects in secondary school didn't really interest me. I was more drawn to IT stuff. I preferred tinkering with the physical components of a computer, creating games and servers."

Did streaming help or hurt him? Mr Ooi, who attended Assumption English School in Bukit Timah as a secondary school student, is ambivalent.

"I didn't think about comparing myself to people in other streams. People will criticise and belittle you

– and not that the stigma didn't bother me – but I tended to just ignore them," says the only son of a deliveryman and a housewife.

"I don't know if I'm a success story, but I just found out what I'm interested in, and I kept on doing what I do best."

Today, he is the co-founder of Bantu, a social enterprise which uses technology to manage volunteers in the social service sector in Singapore. Since its launch last year, more than 60 organisations

have signed up with the platform. Mr Ooi says the latest changes to end streaming will help to reduce the stigma attached to students from the Normal stream.

"The good thing is that each student is no longer categorised by their streams but whether they are good at particular subjects."

He adds: "There's more to life than grades. It took me a longer journey but I don't have any regrets."

Amelia Teng

Normal (Academic) student Low Jie Ying consistently scores As in Maths at Express level, but declined her school's offer to transfer to the Express stream. She welcomes subject-based banding as it will allow students to grow and be developed in the subjects they are strong in. ST PHOTO: GIN TAY



Subject-based banding gives N(A) student confidence boost

Jolene Ang

Being able to solve mathematical problems gives Normal (Academic) student Low Jie Ying a sense of satisfaction – and even more so when her Express schoolmates approach her for help.

When she was in Secondary 1, the Paya Lebar Methodist Girls' School student was offered the chance to take mathematics and Chinese at the Express level, under subject-based banding, as she had done well in those subjects in the Primary School Leaving Examination.

Now a Sec 3 student, Jie Ying, 15, tells Insight that she has been consistently scoring As in Maths exams at the Express level.

She says: "Maths classes are easy. I enjoy solving problems and,

sometimes, my Express classmates ask me for help.

"They'll text me questions or ask me after school, and I won't hesitate to help."

This has given her a huge confidence boost. "There are no real differences between Express and Normal stream students," she says.

"We each have our own unique personalities, strengths and areas we are not so good at. For maths, I am on a par with the Express stream students and can do just as

well as they can. "I've become more confident and mature in thinking, and I learnt how to manage my time better."

But not everyone can be good at everything, she adds.

English and literature are two of her weaker subjects. So when the school offered her a chance to transfer to the Express stream this year, she turned it down.

She explains: "I like the pace of learning in N(A). The teacher will go through things slowly in class to

let us understand better. In Express classes, we learn more things and at a faster pace so it's very difficult – but maths and Chinese are okay."

She was heartened by the Education Ministry's announcement earlier this month that it will be removing the Normal and Express streams in secondary schools.

In place of those streams will be full subject-based banding, which will include humanities subjects such as geography, literature and history, on top of the current offer-

ings of English, mother tongue languages, maths and science. Students can choose subjects at a higher or lower level based on their strengths.

Says Jie Ying: "The removal of Normal and Express streams will be beneficial. (Full subject-based banding) recognises the strength of every student, allowing the students to grow and be developed in the subjects they are strong in."

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End of streaming in education

Subject banding is next logical step

FROM B4

sor of Mediacorp, before she was selected to join the team.

They interviewed and consulted more than 260 education officials, principals and teachers, and referred to about 120 studies and reports from the Education Ministry (MOE) for their work. They also conducted 58 studies on their own where data was not available.

Ms Low, who is now chairman of the board of Nanyang Academy of Fine Arts, recalls: "The work was very intense. We were stationed at Mindef's headquarters at Dempsey because Dr Goh was then the Defence Minister. There were nights we worked through 2am to 3am."

In February 1979, their report was submitted to PM Lee, and in March, the paper was presented in Parliament during MOE's budget debate.

"We all sat on the top floor in Parliament. I remember there were a lot of objections and the report was heavily contested," says Ms Low.

"To be fair, our report also stated that the education system must allow for lateral transfers, and there must not be any hurdles for students, though this is not as easy to implement," she adds.

Some MPs like Dr Koh Lip Lin, Mr Eugene Yap and Mr Sha'ari Tadin cautioned against the idea of streaming, warning that it would disadvantage late bloomers and lead to a serious psychological impact on students streamed into the academically inferior tracks.

Ms Low, who was with MOE for about seven years and started its computer service branch, says: "I was disappointed when some teachers who were posted to teach the Monolingual stream said they themselves were demoted. I thought they would feel that they were doing a good thing by helping the weakest students."

CHANGING TIMES

Both Prof Lim and Ms Low feel that the latest changes to the education system are a step in the right direction, although they think that the idea of streaming is still very much alive today. Instead of the Normal and Express streams, students will take a combination of subjects at different difficulty levels.

Prof Lim says: "With the experience gained over the years, and the achievement of virtually all students who can benefit from secondary school education in fact doing so, it is logical that the next step is to go on to banding.

"If we look at the effect of banding, we can even say that it is 'streaming' taken to its logical conclusion of 'streaming' by individual subject rather than by individual student."

The new approach will mean more complexities in timetabling and teacher and student assignments, adds Prof Lim. "Today, we are certainly much better able to cope with such complexity than at the time of the New Education report some 40 years ago."

Ms Low says: "Society has changed. We are in a different league altogether, in terms of the languages that children speak, their parents' education level and how enlightened they are."

The attrition rate has fallen to less than 1 per cent today, down from a third of every cohort four decades ago. Still, what has not changed is that children must be taught according to their abilities, she adds, and MOE has been gradually fine-tuning the system over the years.

"Overall, I still think Singapore's education system has been a successful one. It has earned praises from many other countries," she says.

"No system is perfect. Streaming was necessary in the past, but removing the stigma associated with it is a good thing."