**Submission No 48**

# INQUIRY INTO REVIEW OF THE NEW SOUTH WALES SCHOOL CURRICULUM

**Organisation:** Institute of Technology Education

**Date Received:** 9 August 2020

# Inquiry into the review of the New South Wales school curriculum

# Institute of Technology Education response

9th August, 2020

Dear Committee,

Thank you for the opportunity to provide feedback on the 'Inquiry into the review of the New South Wales school curriculum'.

The Institute of Technology Education (iTE) (formerly the Institute of Industrial Arts Technology Education) is the largest teacher professional association in NSW, with over 2000 financial members.

If any of the content of this response requires clarification please do not hesitate to contact me.

Yours sincerely,

Grant Byrne
Institute of Technology Education President

**Inquiry into the review of the New South Wales school curriculum**

**TERMS OF REFERENCE**

That NSW Legislative Council Portfolio Committee No. 3 - Education inquire into and report on the contents of and proposed changes to the NSW school curriculum, and in particular:

1. *The extent to which the Masters Curriculum Review addresses its terms of reference, including:*

(a) *Curriculum content, flexibility and pedagogy*

The NSW Curriculum Review does not address any specific current curriculum content. It does refer to a reduction in content, without describing exactly where this should be reduced. It does describe the involvement of professional teachers working with NESA to make decisions about content to be removed from syllabus documents and this is appropriate. The additional content suggested in the from a studying a second language only adds to the crowded curriculum, however, the iTE supports this if the second language may be a coding language to improve the digital literacy of students. The review presents a poor understanding of the differences between Technologies subjects and Vocational Education subjects. This may be, in part, due to the limit research that has been undertaken in the Technologies Education area, even with the emergence of STEM over the past 20 years. The iTE is concerned about the effect of this limited understanding on future development of Technologies subjects.

The addition of a 'major investigative project' in the senior school is different to the initial consultation paper and the interim report, where the term 'major project' was used. 'Investigative project' infers that the completion of a physical product is not required. This is very disappointing at a time when society is facing major skills shortages. All students should have to complete some practical skill application in their Major Project. This matches the final report recommendations more accurately, where significant concern is expressed over the separation of hand and mind with subjects leading to either university, or to vocational pathways. Again, the misunderstanding of how Technologies subjects are designed and implemented by teachers for their students is a concern. Recommendation 6.3 will make the implementation of a major investigative project very difficult to deliver in some subjects.

Considering that Dr Alan Finkel, Chief Scientist of Australia, Optimising STEM industry-school partnerships report was a reference document for the NSW Curriculum Review, it is disappointing that STEM is mentioned only five (5) times in the NSW Curriculum Review final report.

Recommendation 1 follows the standard syllabus development process currently implemented by NESA.

Recommendation 2 is already addressed by Technologies subjects. This highlights why, for the iTE, the misunderstanding of the Technologies curriculum is so disappointing. Other learning areas could learn a lot by following what the Technologies learning area does. The NSW Curriculum Review does not do enough to demonstrate the importance of Technologies subjects in a highly technological society. The traditional core subjects of English, Mathematics and Science are maintained, with Science well below English and Mathematics in the pecking order. Technologies should be as valued as English and Mathematics if students are to make appropriate contributions to society throughout their lives.

Recommendation 8 addresses may go some way to addressing curriculum content and flexibility issues, however, it suggests two more reviews are needed.

Flexibility is addressed through Recommendation 3 and the use of 'progression points' for student achievement. This is similar to the Course Performance Descriptors used for most Years 7-10 or Stage 5 subjects. The iTE believes these can be easily developed and made transferrable across all year groups for use as 'progression points'. Using the NESA Schools Online system would allow student performance to be tracked regardless of which school they attend, and would be especially beneficial for students moving between schools and their teachers. The Assessment Resource Centre website requires a major overhaul and up to date resources to be developed to support the implementation of 'progression points'.

Pedagogy is extremely broad across all of the learning areas and is only minimally addressed by the NSW Curriculum Review final report. Recommendations 9 and 10 are admirable, but will require significant input from universities to be successful. The federal versus state requirements of universities and schools may cause problems in addressing these recommendations.

(b) *Quality and relevance of the evidence-base underpinning the recommendations (compared to CESE findings)*

The recommendations appear to be in line with the 'What works best' documentation recently released by CESE.

High expectations are addressed through the use of 'progression points'.

Explicit teaching is something already well done in the Technologies learning area, as these subjects are demonstrably relevant to students and society. Most teachers should

already be following these principles. How well this is done on other learning areas is not for the iTE to say, however, the nature of some content will make explicit teaching difficult.

Effective feedback is already very well done in the Technologies learning area. The very nature of these subjects requires the use of regular formative assessment strategies and the provision of real time feedback. The application of skills to demonstrate the comprehension and mastery of knowledge is not something that all learning areas are able to do as effectively as the Technologies learning area.

Use of data to inform practice is an area that requires time on behalf of the teacher and school leaders. Professional development in the interpretation and use of data is currently limited. The development of appropriate processes linked to Recommendations 8, 9 and 10 could improve this facet of the teaching profession.

Assessment will be an integral part of developing the knowledge, skills and resources required by all Recommendations.

Classroom management is described in the NSW Curriculum Review final report in a very superficial manner. The need for classroom management strategies and the affect this has on student achievement is inferred only. There is no explicit discussion regarding classroom management.

Wellbeing is addressed throughout the NSW Curriculum Review. It is very difficult to balance the wellbeing needs of students in modern society with the educational learning needs because they are so intertwined. This will be an area that requires careful monitoring when Recommendations are being addressed.

Collaboration is inferred as being an important part of teaching throughout the NSW Curriculum Review final report. Recommendations 7, 9 and 10 are the main focus points for the importance of collaboration between stakeholders.

(c) *Recommendations for student-centred 'progression points' and 'differentiated learning' in schools and whether such initiatives are research-based and proven to be effective*

The NSW Curriculum Review final report encourages the use of differentiation as an effective teaching strategy. Differentiation has long been a strategy of Technologies based subjects. It is completely integrated into what is taught and how it is taught. It is extremely effective for having students achieve at their highest level, and is very useful when students of varying abilities are in the same class. Differentiation will be an important part of every classroom and subject with the implementation of student centred 'progression points'.

This is similar to the Course Performance Descriptors used for most Years 7-10 or Stage 5 subjects. The iTE believes these can be easily developed and made transferrable across all year groups for use as 'progression points'. Using the NESA Schools Online system would allow student performance to be tracked regardless of which school they attend, and would be especially beneficial for students moving between schools and their teachers. The Assessment Resource Centre website requires a major overhaul and up to date resources to be developed to support the implementation of 'progression points'.

(d) *Relationship with the national schools curriculum*

The Australian Curriculum Review was announced after the NSW Curriculum Review. In a recent APTA video conference with Acara Representatives, including the CEO, David de Carvahlo, it was suggested that the Australian Curriculum would be using the NSW Curriculum Review documents as points of reference. Considering the strength of the Technologies learning area syllabuses in NSW, this is appropriate for at least the Technologies area. Technologies and Mathematics are the areas being addressed first by ACARA for the Australian Curriculum review.

2. *The extent to which the Masters Review meets key Government policy objectives, including:*

(a) *Addressing concerns about the overcrowding of the curriculum*

The NSW Curriculum Review final report does not do this effectively. Introducing the study of another language into an already overcrowded and possibly misguided curriculum increases the amount of content to be delivered.

Recommendations 1-6 go some way to addressing concerns of an overcrowded curriculum, however, how these are implemented will be the proof of how seriously the NSW government is about addressing responsibly and appropriately.

The creation of three new learning areas in the senior curriculum (Engineering, Construction and Manufacturing; Information Technology and Computer Science; and Agricultural Science and Food Technologies) will go some way to addressing the current random grouping of disparate subjects that form the Technologies (Technological & Applied Studies) Key Learning Area, as created by the Excellence and Equity white paper in 1989.

(b) *Ensuring students' acquisition of excellence in literacy and numeracy, as well as deep knowledge of key subjects*

The NSW Curriculum Review final report does focus on the literacy and numeracy needs of students. It also describes the importance of deep knowledge development in each subject. These points are addressed in Recommendations 1-6.

(c) *Professor Masters' explanation for NSW declining school results and the role a revised curriculum can play in reversing this decline*

The terms of reference of the NSW Curriculum Review final report do not include provision of an explanation for declining school results. It does describe how the curriculum could be redesigned and presented to better support teaching, learning, assessment and reporting, as per the terms of reference.

3. *Other matters of public concern and interest in the development of the NSW curriculum:*

(a) *To what extent, if any, 'cross-curriculum priorities' are needed to guide classroom content and teaching*

'Cross-curriculum priorities' are different to 'General Capabilities', however, both will be addressed here.

They are not priorities as they are not mandatory to deliver, merely suggestions. They should not be made mandatory. Recently developed NSW syllabus documents all incorporate cross-curriculum priorities and general capabilities from the Australian Curriculum. NSW syllabuses also include 'Other learning across the curriculum areas'. These are: Civics and citizenship; Difference and diversity; and Work and enterprise.

Good programming by teachers incorporates all of these and good teaching delivers them throughout a course.

(b) *To what extent, if any, knowledge and the curriculum are 'socially constructed', requiring the teaching of source verification and fluidity principles*

Socially constructed knowledge is usually only delivered when it is thrust upon schools by government in response to social pressure.

NSW Technologies syllabus development follows a structured approach where content is verified and consulted on through a range of professional opportunities and bodies. Knowledge and skills delivered through NSW Technologies subjects are based in Australian Standards, engineering and scientific principles. While most NSW syllabuses will address a range of social, economic and environmental issues, these are delivered in an integrated manner with the verified knowledge and skill content so that students can make appropriate judgments based on this content.

Fluidity principles are generally applied as changes I technology filter into schools. In NSW Technologies subjects this is generally covered under an 'emerging 'technologies' content point. The rate of uptake of new technologies in NSW public is generally slower than non-government schools due to funding and procurement contract issues hampering the introduction of new technologies related to the fields of design, manufacture, engineering and technologies.

(c) *Whether and to what extent schools should be involved in the 'social and emotional development' of students, as per the Melbourne/Alice Springs Declarations, and growing popularity of 'wellbeing programs' in NSW schools*

Socialisation is an important part of schooling for students. Schools must be involved in this process as some students spend more time with their teachers than with their parents. Social pressures are rapidly changing, including easier access to online social platforms, media, etc. Modern students, in their personal and group reponses to the wide and varied nature of social changes they are exposed to, often do not have the mental toolkit or capacity to deal with these issues appropriately. This is often referred to as a lack of resilience. The huge changes to Australian society and expectations of young people; the cost of living; the nature and range of jobs available; their exposure to local, national and international events; and other issues, are often difficult to relate to by those who are older and making decisions that affect young people.

(d) *Adequacy of the content and depth of teaching of Australian history, pre- and post-1788*

The content and depth of teaching of Australian history, pre- and post-1788 is beyond satisfactory. The study of History is mandatory from K-10 and Australian History is explicitly covered in the Stage Statements, Outcomes and Content from K-10. History is also available to students as an elective subject while studying mandatory History from Years 7-10. The content and depth of teaching pre and post 1788 Australian history is well covered.

Opposing this is the adequacy of content and depth of teaching of Technologies and STEM subjects. It is definitely inadequate. How can schools have a focus on 21st century learning in a modern, technologically driven society when the Technologies learning area is not afforded the same value in terms of mandatory hours as English, Mathematics and Science. The Technologies learning area covers the T and E of STEM, yet is given only 40% of the mandatory hours to be studied compared to English, Mathematics and Science in secondary schooling, and even less in primary schooling. This is a significant disservice to the education of our young people in what is arguably the most relevant learning area today, will continue to be in the future, and has been for the past 30 plus years.

(e) *Given the importance of English literacy across the curriculum, adopting the most effective evidence-based approaches to language acquisition, especially for reading and writing*

The NSW Curriculum Review definitely places importance on English literacy. It is a key component of Recommendation 4. How this is achieved is to be determined by NESA and the NSW Government.

(f) *Role and effectiveness of vocational education syllabuses in NSW schools*

The role of vocational education appears to be misunderstood by the NSW Curriculum Review final report, especially concerning the differences between Technologies subjects and VET subjects. Given the high priority assigned to the integration of knowledge and skills in the final report, this is extremely disappointing. The iTE did contact the NSW Curriculum Review team on numerous occasions throughout the consultation process and made ourselves available to meet with the team and Professor Masters but were never taken up on this offer. The iTE is concerned about the effect this limited understanding may have on future development of Technologies subjects.

Most VET subjects delivered in NSW schools provide students with a Certificate II qualification. They are effective at providing this. Some deliver at the Certificate III level.

(g) *Effectiveness of NESA in curriculum development and supervision*

NESA's effectiveness in these areas is hampered by bureaucratic red tape. While the Technologies syllabuses developed are generally good, the time taken to develop a syllabus is protracted. There are limited opportunities for expert teachers to have significant input to the writing process. The time between syllabus updates is unacceptable for the Technologies area, where content changes rapidly due to the very nature of the subjects.

4. *Any other related matters.*

The NSW Curriculum Review final report is poorly structured, making it difficult to follow or find relevant information after the Executive Summary. It is very repetitive, jumps around and is more an evolution of Excellence and Equity, than it is a revolutionary map to educational reform. A number of the Recommendations are simply changing the names of processes already in place, making most easily implemented. The main concern will be the implementation of the NSW Curriculum Review final report by the NSW Government and NESA.
The final report does not go far enough to restructure the existing Key Learning Area arrangement from K-10.

By maintaining the existing mandatory hours for each learning area, the final report considerably undervalues the importance of the Technologies learning area.

The Recommendations made in the iTE submission during the interim report consultation period follow. The iTE initial consultation response and the interim report response can be found on the NSW Curriculum Review website.

Recommendations

1. Technologies Education (TE) must maintain a separate identity to STEM. The current name of the Technological & Applied Studies KLA is cumbersome and should be changed to Technologies. The content described through most current syllabus documents is appropriate and matches nicely to the descriptions provided throughout Optimising Stem Industry-school Partnerships: Inspiring Australia's Next Generation Final Report April 2018 as requirements for delivering improved STEM or TE outcomes.

2. Practical, project-based learning type (Major Project) externally assessed examinations should be implemented for all subjects as at least one assessment item.

3. Mandatory hours of study for Technologies Education must increase. In Primary schooling it should be allocated the same amount of time as English and Mathematics. In Secondary schooling the current 200 hours should be at least doubled to 400 hours across Stages 4-5. The study of a Stage 6 Technologies Education subject should be mandatory for all students.

4. Removing elective subjects or the broad range of Technologies Education subjects must not occur. Removal of these subjects and options will only reduce the ability of students to access relevant and appropriate learning opportunities.

5. It is important for the NSW Curriculum to be just that. In many ways, directly adopting the Australian Curriculum, especially in the Technologies learning area, will be a step backwards from the high level of Technologies Education that is currently presented through the various NSW syllabus documents. The Optimising Stem Industry-school Partnerships: Inspiring Australia's Next Generation Final Report April 2018 appears to have neglected the strength of the NSW Curriculum, and other states, to focus almost exclusively on the Australian Curriculum. NSW must continue to develop its own syllabus documents.

6. While Optimising Stem Industry-school Partnerships: Inspiring Australia's Next Generation Final Report April 2018 provides case studies describing how longer school hours have assisted some countries improve the STEM skills of their students, they do not provide the time that is actually allocated to the study of TE subjects. The mandated hours for the study of TE in the NSW Curriculum should be increased so that it is equal to that of English and Mathematics in the Primary curriculum, and at least doubled to 400 hours in the Secondary curriculum.

7. Teacher professional associations, such as the Institute of Technology Education, must be closely involved in the development of curriculum documents, resources and teacher professional learning related to their academic fields. These associations are formed of experts in discipline specific pedagogy and can make significant contributions to the improvement of teacher and student knowledge, skills and attributes.

8. Attainment Levels should be linked to micro-credentials. In the senior school at least, these micro-credentials should provide opportunities for accreditation at tertiary levels.

9. The implementation of Learning Progressions are supported and should be used to replace written reports. Learning Progressions need to be implemented consistently across the state. This will require the development of detailed Learning Progressions for each Attainment Level, appropriate support materials such as graded and annotated work

samples, and ongoing professional development of teachers to ensure they are applied consistently and fairly.

10. A number of changes to the nature of work done by teachers must be introduced to support the proposed curriculum reforms. These include reduced class sizes, reduced face to face teaching time, increased opportunities for team teaching, greater numbers of support staff including technical/workshop assistants, and greater administrative support.

11. If the Major Project, as presented in the interim report, is included as a mandatory requirement for study in the senior school, those subjects (Industrial Technology, Design & Technology, Textiles & Design, etc.) that already include a Major Project as part of their curriculum must be permitted to continue offering the Major Project as an externally assessed task. This may be in addition to the Major Project idea presented in the interim report. Students are currently able to undertake more than one Major Project during their HSC course of study.

12. The Major Project must be externally assessed if it is to form a valid part of the HSC assessment schedule.