Victorian Space Science Education Centre
Response to
Consultation Paper about the National priorities and industry linkage fund

The Victorian Space Science Education Centre (VSSEC) is pleased to provide the comments that follow in response to the Consultation Paper about the National priorities and industry linkage fund (NPILF).

VSSEC is one of six specialist maths/science education centres funded by the Victorian Department of Education and Training (DET). VSSEC is located on the campus of Strathmore Secondary College in Melbourne and offers programs to students from early primary to VCE level. All of VSSEC's programs are designed around principles of learning by doing, taking account of current research in neuroscience (the physiological and chemical evidence that indicates how people learn) and pedagogy (the science of teaching). The Centre's signature program is the Mission to Mars program. In this program students are split into teams. Two venture onto a small crater on a simulated Mars surface and two sit in a mission control centre and oversee, direct and ensure the safety of the teams on the simulate Martian surface. The object of the activity is to gain an understanding of the geology of the crater being examined by collecting rock samples and making other measurements whist dealing simultaneously with the natural hazards and other challenges that confront Martian explorers.

Central to this, and other programs offered by VSSEC, is the imperative for students to work in teams. Students must set aside personal friendships, likes and dislikes if they are to achieve the learning goals of the program in which they are participating. They are encouraged to focus on the task at hand and are assisted to do so by a team of student educators – university students employed by VSSEC to run the Centre's programs.

More about VSSEC may be found on our website, here.

How is VSSEC's experience relevant to the NPILF?

The Consultation Paper rightly points out that the skills needed to 'job ready' today and into the future are very different to those of the past. However, the Discussion Paper makes no reference to the social and psychological implications of the work integrated learning (WIL) program that is proposed.

VSSEC offers three observations on the proposal outlined in the Consultation Paper.

Is the NPLIF a good idea? VSSEC's experience, backed by the evidence from neuroscience, indicates that learning by doing, or experiential learning is the most effective type of learning there is. Three areas of the brain relevant to learning (reptilian, limbic and neo-cortex) must work together for learning to be most effective. This is readily and routinely achieved through curricula and syllabi that emphasise learning by doing. In principle, therefore the NPLIF is a good idea.

Is the NPILF directed at the right level? VSSEC's experience over nearly 15 years of operation is that student self-awareness and ability to work in or with a team leads to substantially better educational outcomes than where these qualities are poorly developed or absent. Behaviours captured by phrases such as self- respect and respect for others are set well before most young men and women complete their secondary education. The Consultation Paper assumes that the students who might undertake WIL assignments are equipped mentally, socially and psychologically to do so. The paper also assumes that the workplaces in which WIL students will be placed will be equally receptive and well-prepared. On the basis of VSSEC's experience with secondary level work experience on the one hand, and the anecdotal reports from our student educators as well, many tertiary level students struggle to find their feet in the workplace. Compounding the problem, some workplaces struggle to know how to use students other than on menial tasks that require minimal training and supervision.

We would urge those responsible for the program to collect and collate data on the students who report benefit from the NPILF and those who do not and ask whether the earlier educational experiences of those surveyed was a factor in the benefit (or otherwise) that they obtained from their WIL experience. These results need to be fed back into Australia's primary and secondary education systems.

What is the Principal Aim of WIL under the NPILF? VSSEC is not convinced that the proposed definition of WIL is especially helpful because of the inclusion of words such as 'purposeful 'and 'authentic' that are imprecise and can be meaningful or meaningless. VSSEC's experience may assist in coming to a meaningful definition. Part of VSSEC's success is its use of university students as student educators. They have chosen to do this work, instead of working in retail and hospitality to generate income. Many of VSSEC's student educators have been science and engineering students with more than a passing interest in space and a desire to work in the space domain.

To a man and woman, the student educators have learnt about and applied professional courtesy and respect to students, staff, and visitors to VSSEC, including many VIPs. They have learnt to work as a team and as subsets of the team, they have learnt about the importance of humour and a good-natured approach to their work and to those with whom they relate. Some have gone on to win prestigious awards and placements at NASA. Others have changed their career paths to become teachers. Perhaps, VSSEC has developed, as a corollary of our core business, a WIL model worthy of study, if not emulation.

We stand ready to answer any questions you may have.

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VSSEC
30 October 2020