QUESTION ON NOTICE
Additional Estimates 2016 - 2017

Outcome: Higher Education Research and International

Department of Education and Training Question No. SQ17-000230

Senator Carr, Kim provided in writing.

Enhancing the Training of Mathematics and Science Teachers Program

Question

Has the Enhancing the Training of Mathematics and Science Teachers Programme ceased? Is there any ongoing funding for this programme? If not, are there any other programs or activities run by the Department to improve the quality and training of teachers in STEM?

Answer

- Program funding was $12 million over three calendar years 2014 to 2016. The funding supported five multi-institution consortia, involving 25 higher education institutions as well as research organisations and state governments. The five projects are scheduled to be completed by mid-2017.
- In response to the Teacher Education Ministerial Advisory Group recommendation, the Government has implemented new accreditation standards that require all primary teaching students to graduate with a subject specialisation, with a focus on subject or curriculum areas which are in demand, including STEM subjects.
- There are a number of other programs, some of which are initiatives under the National Innovation and Science Agenda (NISA), to improve the quality and training of teachers in STEM. A list and description is provided below.

EARLY LEARNING STEM PROGRAMS

PROGRAM	DESCRIPTION	AIMS/OBJECTIVES
Let's Count (***NISA initiative***)	A one-off grant is being provided to the Smith Family to support and expand the Let's Count initiative and facilitate the development of an online Let's Count facility, including a parent application (app). The expanded Let's Count program will be delivered to more early learning educator and care centres, including those outside The Smith Family network. Let's Count was developed to support children from disadvantaged backgrounds to develop mathematics skills. Educators support parents and carers to notice, explore and talk about numbers, counting, measurement and patterns with their child. Let's Count emphasises maths in the everyday, and helps children to see mathematics as relevant, stimulating and fun.	The initiative aims to: • increase the numbers of early education and care services successfully engaged with Let's Count • improve the capacity of early education workers to support parents/carers to enhance their children's numeracy • improve capacity of parents/carers to support the numeracy development of their children.

PROGRAM	DESCRIPTION	AIMS/OBJECTIVES
Little Scientists (*NISA initiative*)	A one-off grant is being provided to Froebel Australia to support and expand the *Little Scientists* initiative that facilitates children's natural curiosity for STEM through age-appropriate, fun and playful experiments in the early years. The expanded Little Scientists program will provide eight new Little Scientists workshop modules, increased STEM professional development opportunities and resources for early learning educators through additional workshops nationally and two Science Educator conferences (September 2017 and June 2019).	The initiative aims to: • increase the numbers of early education and care services successfully engaged with Little Scientists • improve STEM knowledge and abilities for transition to school.
Early Learning STEM Australia (ELSA) (*NISA initiative*)	A pilot program to design, develop and distribute a series of six apps to engage children, educators and families in STEM education in the early years. A national pilot will be held throughout 2018, with 100 preschool services to take part before the program is nationally rolled out in 2019.	The initiative aims to: • embed the constructive use of technology in preschool programs and raise awareness of the importance of STEM • provide opportunities for preschool children to explore an online play-based learning environment that is rich in STEM concepts. • support early childhood educators to understand STEM concepts and learning outcomes in the Early Years Learning Framework and Australian Curriculum.

PRIMARY AND SECONDARY STEM PROGRAMS

PROGRAM	DESCRIPTION	AIMS/OBJECTIVES
The University of Adelaide's Digital Technologies Massive Open Online Courses (*NISA initiative*)	Funding to expand online learning programs to improve digital technologies training for teachers. This initiative supports implementation of the Australian Curriculum: Digital Technologies.	Increase teacher engagement with, and confidence in, implementing the Australian Curriculum: Digital Technologies through a free nationally available professional learning program with support available in all jurisdictions.
Teacher Support for Digital Technologies (*NISA initiative*)	Provide schools in disadvantaged areas access to specialist ICT educators and support, in person or via telepresence.	To provide intensive support for school leaders and classroom teachers to facilitate implementation of the Australian Curriculum: Digital Technologies, in targeted schools in disadvantaged areas.

PROGRAM	DESCRIPTION	AIMS/OBJECTIVES
STEM Partnerships with Schools (*NISA initiative)*	The funding is being used for continued operation of the program currently known as Scientists and Mathematicians in Schools. Funding supports flexible partnerships between STEM professionals and schools to enable students and teachers in both primary and secondary schools understand how STEM is applied in the real world; introduce them to emerging STEM innovations and potential career paths; provide student mentoring opportunities; and better match industry expectations and aspirations. CSIRO delivers this program for the department and provides additional in-kind support in the form of program staff with relevant expertise in subject areas and program management.	Increase student interest and motivation in science, mathematics and the ICT profession through exposure to the breadth of real world science, mathematics and ICT. Increase the number of young people pursuing STEM studies in Years 11 and 12, vocational and/or tertiary education.
Digital Literacy School Grants (*NISA initiative)*	Two rounds of competitive grants expected to fund approximately 100 projects which support innovative methods of implementing the Australian Curriculum: Digital Technologies.	Increased teacher and school leader engagement with, and confidence in, implementing the Australian Curriculum: Digital Technologies. Students to benefit from the new digital technologies curriculum being implemented in their schools. Closing the digital divide.
Mathematics by Inquiry	Delivered by the Australian Academy of Science, this project develops and disseminates a suite of resources incorporating contemporary mathematics pedagogies. Resources will be available free to all Australian students and teachers. Preliminary projects conducted in 2014–15 refined the focus of the initiative, improved access to records on Scootle and provided annotated work samples of the proficiencies in the Australian Curriculum: Mathematics.	To change how mathematics is taught and learnt in schools through the development of a suite of resources for Foundation to Year 10 to help students learn mathematics in an innovative and engaging way.
Coding Across the Curriculum	Coding across the curriculum will support the introduction of computer coding and computational thinking across different year levels in Australian schools, including: • Creation of the Digital Technologies Hub, developed and hosted by Education Services Australia. The Hub is a collection of activities, learning sequences and other resources related to the digital technologies curriculum, and is now available to all teachers across Australia • Code Club, a one-off grant to support expansion of Code Club Australia	Increased teacher and student engagement with, and confidence in, implementing the *Australian Curriculum: Digital Technologies*. Increased student proficiency in coding and computer programming.

PROGRAM	DESCRIPTION	AIMS/OBJECTIVES
Science by Doing	Delivered by the Australian Academy of Science, this project supports the development of secondary science teaching and learning resources, as well as professional learning resources to support teaching by inquiry.	Improved teaching and student learning outcomes in science within secondary schools and increased student interest and engagement in learning about science. Improve the skills and confidence of secondary school teachers to teach science through inquiry.
Primary Connections: Linking science with literacy	Delivered by the Australian Academy of Science, this project supports the development of primary science teaching and learning resources, which aim to enhance primary school teachers' confidence and competence for teaching science. The project also provides subsidised delivery of professional learning to teachers in regional and remote areas as well as to pre-service primary school teachers.	Improved primary teaching and student learning outcomes in science. Increased student interest and engagement in learning about science, and improved skills and confidence of primary teachers to teach science through inquiry.