Academy of Futures Skills

Name of provider/ organisation	ACT Government
State/Territory	ACT
Aim	Improved student learning outcomes; Increased student engagement; Student participation in STEM; Student career aspirations; Family partnerships
Description	The Academy of Futures Skills (the Academy) will build science, technology, engineering and mathematics (STEM) discipline and skills across ACT public schools through the establishment of two hubs: one in Canberra's north and one in the south. The Hubs will support student outcomes through a focus on improved teaching and learning in STEM disciplines. The Hubs will also provide an enabling environment for teachers using the facilities to be supported and guided by experienced STEM pedagogical leaders in the delivery of innovative and challenging learning programs. The objectives of the Academy are to: • showcase and inspire innovation in ACT public education • build instructional leadership capability and enable excellence in futures-focused teaching and learning • activate deep learning in STEM disciplines, and develop students' transdisciplinary knowledge, skills, capabilities and dispositions • provide access to expert mentors for teachers and students, and industry partnerships for schools • improve student achievement in STEM-related disciplines and enhance STEM study and employment pathways for all students.
Funder(s)	ACT Government
Current Funding	$5.7 million over 5 years
Years of Operation	2017 - present
Initiative type	Professional learning for teachers; Teaching and learning resources; Grants program; Mentoring for students; Competitions
Target Audience	Teachers; Students; Families; School leaders; Industry/community
Target ages	Primary; Secondary
Equity Target Groups	Low SES; Girls/women; Indigenous; Students with disability
Target STEM Areas	STEM
Scale	Available to ACT public schools
Evaluations	External and internal evaluation will occur when the Academy commences
Evaluation Methodology	Administrative data; Analysis of student work; Classroom observations; Focus groups; Interviews/consultations; Student achievement data; Surveys
Evaluation findings	N/A
Value for money	N/A
Decisions post-evaluations	N/A
Website	N/A

Science Mentors ACT

Name of provider/ organisation	ACT Government
State/Territory	ACT
Aim	Improved student learning outcomes; Increased student engagement; Student participation in STEM; Student career aspirations
Description	Science Mentors ACT provides ACT public school students in years nine to twelve the opportunity to work with science and engineering professionals on extended student-driven investigations. Through Science Mentors ACT, students gain a genuine science and engineering experience. Through Science Mentors ACT, students work with STEM professionals in a field of the student's choice, develop experimental, analytical and evaluative skills specific to their chosen field. They gain experience and skills writing professional level science reports. This initiative is part of the Academy of Futures Skills.
Funder(s)	ACT Government
Current Funding	N/A
Years of Operation	2018 - present
Initiative type	Mentoring for students
Target Audience	Teachers; Students; Families; School leaders; Industry/community
Target ages	Secondary
Equity Target Groups	N/A
Target STEM Areas	Science; Engineering
Scale	Approx. 35 students
Evaluations	Internal evaluation will be developed;
Evaluation Methodology	N/A
Evaluation findings	N/A
Value for money	N/A
Decisions post-evaluations	N/A
Website	N/A

Principals as Numeracy Leaders

Name of provider/ organisation	Association of Independent Schools, Western Australia - Dr Paul Swan, Mr David Dunstan and Mr Peter Farmer
State/Territory	ACT
Aim	Increased student engagement; teacher development; improved student learning outcomes
Description	The aim of the PANL program is to provide principals and other numeracy leaders with the knowledge and understanding of both effective leadership for learning and the content knowledge required to focus such leadership on numeracy. Specifically the aims are to: enhance school leaders' efficacy in instructional leadership, enhance school leaders' knowledge of essential numeracy content and to assist in the design of whole school planning for numeracy improvement. Four professional learning modules run over two semesters.
Funder(s)	ACT Education Directorate
Current Funding	Continuing budget with PANL professional learning and follow up support costing approximately $150,000 to date.
Years of Operation	2017 - present
Initiative type	Professional learning for teachers; teaching and learning resources
Target Audience	School leaders
Target ages	Primary; Secondary
Equity Target Groups	N/A
Target STEM Areas	Mathematics
Scale	52 ACT schools
Evaluations	Program is evaluated by participants after each module. This feedback is then summarised and presented to AISWA to inform future delivery. Whole school data collection of participating schools.
Evaluation Methodology	Administrative data; Classroom observations; Interviews/consultations; Surveys
Evaluation findings	As the project is still underway the collected data is mostly qualitative at this stage. Quantitative data is currently being tracked for collection. The feedback from schools has been overwhelmingly positive with many schools already beginning to see a difference in teacher self-efficacy in the teaching of numeracy, and whole school practices becoming part of their planning.
Value for money	N/A
Decisions post-evaluations	Three rounds of PANL have been undertaken, with 52 schools participating. The Directorate is continuing support with regular consultations with schools to continue momentum. Follow up support will continue for the next 18 months.
Website	N/A

Middle Years Mental Computation program

Name of provider/ organisation	ACT Education Directorate
State/Territory	ACT
Aim	Teacher development; improved student learning outcomes in numeracy
Description	The Middle Years Mental Computation program was established through a project directed by Professor Alistair McIntosh in partnership with Tasmania and the ACT. This program aimed at assessing and improving the mental computation ability of students. The product is a resource (Mental Computation: A Strategies Approach, 2004) for teachers to assess student understanding and scaffold learning through a series of modules with explicit teaching of strategies for understanding and applying number. The professional learning has seven modules linked to the Australian Curriculum: Introduction and planning, addition and subtraction, multiplication and division, fractions, percentages, decimals, and ratio, and is currently delivered face to face.
Funder(s)	ACT Education Directorate
Current Funding	N/A
Years of Operation	2008 - present
Initiative type	Professional learning for teachers; teaching and learning resources
Target Audience	Teachers; students
Target ages	Primary; Secondary
Equity Target Groups	N/A
Target STEM Areas	Mathematics
Scale	Available to ACT Directorate schools
Evaluations	Participants give feedback after every module. This feedback is then analysed and used to inform future program delivery.
Evaluation Methodology	Participant surveys; anecdotal evidence; student achievement data
Evaluation findings	The MYMC program has developed over a number of years and engagement as a system resources has been strong. Leaders in schools have been trained as facilitators in order to ensure continued implementation. The success of the program is such that experts in the system now deliver the professional learning and change agents within schools support successful implementation. Feedback from participants is overwhelmingly positive. The professional learning is in high demand.
Value for money	N/A
Decisions post-evaluations	The program has evolved with the changes in the Australian Curriculum, National Numeracy Progressions and feedback from participants. The instructional leadership piece in Principals as Numeracy Leaders has also been folded into the delivery of the program to ensure a cohesive and consistent approach to mathematics learning and teaching in the ACT. The ACT Education Directorate is considering how this program can be a blended delivery professional learning, with online components.
Website	N/A

Information Technology Educators ACT (InTEACT) Canberra Girls Programming Network

Name of provider/ organisation	InTEACT
State/Territory	ACT
Aim	Improved student learning outcomes; Increased student engagement; Teacher development; student participation in STEM; Student career aspirations; Family and community partnerships; Industry and education partnerships
Description	The Canberra Girls' Programming Network runs free, hands-on programming workshops for girls in grades 4–12. Girls are introduced to a range of topics such as cryptography and games and code their own programs using the Python programming language. Events are run several times a year by volunteer local women studying or working in IT in industry, academia and government.
Funder(s)	InTEACT
Current Funding	N/A
Years of Operation	N/A
Initiative type	Mentoring for students
Target Audience	Teachers; Students; Families; School leaders; Industry/community
Target ages	Primary; Secondary
Equity Target Groups	Girls/women
Target STEM Areas	Technologies
Scale	N/A
Evaluations	N/A
Evaluation Methodology	N/A
Evaluation findings	N/A
Value for money	N/A
Decisions post-evaluations	N/A
Website	https://canberragpn.github.io/

Lake Tuggeranong College in partnership with the Department of Human Services

Name of provider/ organisation	Lake Tuggeranong College
State/Territory	ACT
Aim	Improved student learning outcomes; Increased student engagement; Teacher development; student participation in STEM; Student career aspirations; Family and community partnerships; Industry and education partnerships
Description	Lake Tuggeranong College has partnered with the Department of Human Services Chief Information Officer Group to be part of a work experience pilot. This is an eight week work experience program where students study CISCO IT networking and will work with the Cybersecurity section of DHS. This program has targeted young female students to do girls-only work experience in IT-based security. The pilot program will expand to include other schools.
Funder(s)	Department of Human Services
Current Funding	N/A
Years of Operation	2015 - present
Initiative type	Professional learning for teachers; Mentoring for students
Target Audience	Teachers; Students; Families; Industry/community;
Target ages	Secondary
Equity Target Groups	Girls/women
Target STEM Areas	STEM
Scale	Around 10-15 students in three classes per year with two IT teachers
Evaluations	Internal evaluation; Some evaluation data collected
Evaluation Methodology	Focus groups; Interviews/consultations; Surveys
Evaluation findings	N/A
Value for money	N/A
Decisions post-evaluations	N/A
Website	N/A

Count Me in Too

Name of provider/ organisation	NSW Department of Education and Training
State/Territory	ACT (also National)
Aim	Teacher development; improved student learning outcomes
Description	Count Me In Too is based on the Australian Curriculum numeracy continuum and has a focus on quality teaching practices. This initiative enables teachers to see the learning and developmental progression from K – 8 along the numeracy continuum.
Funder(s)	ACT Education Directorate
Current Funding	N/A
Years of Operation	Early 2000s to present
Initiative type	Professional learning for teachers; teaching and learning resources
Target Audience	Teachers
Target ages	Primary
Equity Target Groups	N/A
Target STEM Areas	Mathematics
Scale	N/A
Evaluations	N/A
Evaluation Methodology	N/A
Evaluation findings	N/A
Value for money	N/A
Decisions post-evaluations	N/A
Website	https://education.nsw.gov.au/teaching-and-learning/curriculum/literacy-and-numeracy/teaching-and-learning-resources/numeracy/building-blocks-for-numeracy

Science Educators' Association of the ACT (SEAACT) Science Fair

Name of provider/ organisation	SEAACT
State/Territory	ACT
Aim	Improved student learning outcomes; Increased student engagement; Teacher development; Student participation in STEM; Student career aspirations; Family and community partnerships; Industry and education partnerships
Description	The SEAACT Science Fair encourages active involvement and interest by students in science both in class and beyond the boundaries of the classroom. It encourages students to undertake planned and controlled investigations in science and report their results in an appropriate manner and to apply these processes to scientific inquiry to topics of interest. The Fair then enables the community, including other students and teachers, to see project work completed by students in ACT senior secondary schools, primary schools, high schools and preschools. Entrants in this Fair can then gain entry to the BHP Billiton Science Competitions.
Funder(s)	SEAACT relies on sponsorship funding from CSIRO, BHP Billiton Foundation and Rowe Scientific
Current Funding	N/A
Years of Operation	N/A
Initiative type	Professional learning for teachers; Teaching and learning resources; Grants program; Mentoring for students; Competition
Target Audience	Teachers; Students; Families; School leaders; Industry/community
Target ages	Primary; Secondary
Equity Target Groups	N/A
Target STEM Areas	Science
Scale	N/A
Evaluations	N/A
Evaluation Methodology	N/A
Evaluation findings	N/A
Value for money	N/A
Decisions post-evaluations	N/A
Website	https://seaact.act.edu.au/

STEM Sells (CIT)

Name of provider/ organisation	The Creative Element
State/Territory	ACT
Aim	Improved student learning outcomes; Increased student engagement; Student participation in STEM; Student career aspirations
Description	STEM Sells provides girls with opportunities to develop skills in 3D printing, electronics, robotics, web development. This program aims to provide greater opportunities and engagement for girls in years 7-9 through STEM-based projects over a ten week period. The program provides a safe and supportive environment to explore the creative real-world applications of STEM.
Funder(s)	Partnership with the Canberra Innovation Network and The Creative Element. Scholarships for ACT public school students provided by ACT Education Directorate
Current Funding	Scholarships for 2018: $11,970 from ACT Education Directorate
Years of Operation	2017 - present
Initiative type	Mentoring for students
Target Audience	Students
Target ages	Secondary
Equity Target Groups	Girls/women
Target STEM Areas	STEM
Scale	15 students per term
Evaluations	N/A
Evaluation Methodology	N/A
Evaluation findings	N/A
Value for money	N/A
Decisions post-evaluations	N/A
Website	http://stemsells.com.au/women-in-stem/

Aviation Science program

Name of provider/ organisation	ACT Education Directorate
State/Territory	ACT
Aim	Improved student learning outcomes; increased student engagement; teacher development; student participation in STEM; student career aspirations
Description	Aviation Science program covering basic aviation theory as per the senior secondary Aviation Science and Navigation units accredited by the Board of Senior Secondary Studies (BSSS). As part of their assesment, students deliver a STEM project-based learning program to primary and high school students. The program also provides an opportunity for students to develop their general capabilities through the STEM practices and engagement with local students.
Funder(s)	ACT Education Directorate
Current Funding	N/A
Years of Operation	2018
Initiative type	Teaching and learning resources
Target Audience	Teachers; students; families
Target ages	Secondary
Equity Target Groups	N/A
Target STEM Areas	STEM
Scale	Two schools
Evaluations	internal evaluation
Evaluation Methodology	Administrative data; Classroom observations
Evaluation findings	N/A as recent initiative
Value for money	N/A
Decisions post-evaluations	N/A
Website	N/A

ACT teacher scholarships program

Name of provider/ organisation	ACT Government
State/Territory	ACT
Aim	Teacher development
Description	The ACT Teacher Scholarship Program provides financial support to ACT teachers and school leaders within the Education Directorate to undertake further education, training and research aligned to current Directorate priorities that will lead to an improvement in student learning outcomes.
Funder(s)	ACT Government
Current Funding	Election commitment Scholarships for Teachers offering 25 scholarships a year for STEM and languages ($250,000 per year).
Years of Operation	2016 - present
Initiative type	Professional learning for teachers; Scholarships program;
Target Audience	Teachers
Target ages	N/A
Equity Target Groups	N/A
Target STEM Areas	All
Scale	25 scholarships on offer per year
Evaluations	N/A
Evaluation Methodology	N/A
Evaluation findings	N/A
Value for money	N/A
Decisions post-evaluations	N/A
Website	N/A

Stage 3 integrated STEM project

Name of provider/ organisation	NSW Department of Education
State/Territory	NSW
Aim	Improved student learning outcomes; Student participation in STEM
Description	The Stage 3 Integrated STEM Project has adopted an integrated approach to teaching mathematics, science and technology in Stage 3 classrooms. The project aims to develop learning experiences through the use of project-based learning strategies and trial quality integrated STEM programs in schools across NSW. Teachers from 35 schools working either as individual schools or as communities of schools are involved in the project and will document their journey. Teachers will use design thinking methods to develop problems and find solutions, engaging their students in these processes as co-creators of the learning.
Funder(s)	NSW Department of Education
Current Funding	N/A
Years of Operation	N/A
Initiative type	Teaching and learning resources
Target Audience	Students
Target ages	Primary
Equity Target Groups	N/A
Target STEM Areas	STEM
Scale	Teachers and classes from 35 schools working either as individual schools or communities of schools
Evaluations	N/A
Evaluation Methodology	N/A
Evaluation findings	N/A
Value for money	N/A
Decisions post-evaluations	N/A
Website	http://www.stem-nsw.com.au/leading-stem/stage-3-integrated-stem-project

Stage 4 integrated STEM project

Name of provider/ organisation	NSW Department of Education
State/Territory	NSW
Aim	Improved student learning outcomes; Student participation in STEM
Description	The Stage 4 Integrated STEM Project promotes an interdisciplinary approach to teaching science, technology, engineering and mathematics in Stage 4. Teachers engaged in cross-curriculum planning with a major focus on aligning syllabus outcomes and promoting higher order thinking through authentic project-based tasks. The unit of learning provided a guide for integrated teaching and learning, inquiry learning and design thinking.
Funder(s)	NSW Department of Education
Current Funding	N/A
Years of Operation	N/A
Initiative type	Teaching and learning resources
Target Audience	Students; teachers
Target ages	Secondary
Equity Target Groups	N/A
Target STEM Areas	STEM
Scale	Teachers and classes from 27 schools
Evaluations	Internal evaluation
Evaluation Methodology	N/A
Evaluation findings	N/A
Value for money	N/A
Decisions post-evaluations	N/A
Website	http://www.stem-nsw.com.au/teaching-stem/stage-4-stem-projects https://education.nsw.gov.au/about-us/educational-data/school-research-and-evaluation/research-and-evaluation-projects/past-evaluation-projects/stem

STEM Action School Mentoring Program - Secondary

Name of provider/ organisation	NSW Department of Education
State/Territory	NSW
Aim	Teacher development; Increased student engagement; Improved student learning outcomes
Description	NSW Department of Education has established seven STEM Action Schools at a high school level to mentor and share innovative STEM practice and programs with other schools. STEM Action Schools implement curriculum programs designed to develop students' foundational knowledge and skills in STEM subjects as well as skills of collaboration, critical and creative thinking and problem solving. A goal of this program is to facilitate experienced staff to lead a community of practice in the teaching of STEM.
Funder(s)	NSW Department of Education
Current Funding	Funds provided from within Secondary Education, each of the seven Action schools were provided with a grant of $10,000 each year for two years. Additional funds were provided to allow Action school staff to attend professional learning and networking.
Years of Operation	2016 - 17
Initiative type	Community of practice; mentoring for teachers and schools
Target Audience	Teachers; Schools
Target ages	Secondary
Equity Target Groups	N/A
Target STEM Areas	STEM
Scale	Seven STEM Action Schools who are available to mentor multiple other schools across NSW
Evaluations	Some evaluation data collected
Evaluation Methodology	Surveys conducted by each STEM Action school
Evaluation findings	Excellent method for schools to receive introductory information about a range of STEM programs and make connections with schools also on the STEM journey.
Value for money	After the provision of the initial professsional learning for the seven STEM Action schools, each school was given $10,000 for each of two years. These funds were used to offer mentoring for other schools and build the capacity of teachers from both the STEM Action schools and the mentored schools. This represented excellent value for money.
Decisions post-evaluations	Two years is the maximum time it can be expected that an Action school can maintain the level of mentoring required. After two years difficulties arise related to staff movements, promotions and workload.
Website	http://www.stem-nsw.com.au/images/PDF/action_schools_all.pdf

ME Program — iSTEM curriculum

Name of provider/ organisation	Regional Development Australia
State/Territory	NSW
Aim	Increased student engagement; Student participation in STEM; Student career aspirations
Description	In 2013 the ME Program in collaboration with local industry and STEM teachers at Maitland Grossmann High School developed the iSTEM curriculum. iSTEM is a student centred subject for students in Years 9 and 10 that delivers Science, Technology, Engineering and Mathematics (STEM) in an integrated way. iSTEM is a School Developed Board Endorsed Course (SDBEC) which has been approved by the NSW Education Standards Authority. It incorporates mechatronics, aerodynamics, engineering, 3D CAD/CAM, aerospace and motion modules, iSTEM presents maths and sciences to students in ways that challenge not only their understanding of these key subjects but also their ability to manage projects and work in teams. It was initially taught in seven hunter region schools, but has now been rolled out to over 262 schools across NSW.
Funder(s)	Regional Development Australia; Department of Defence; other funding partners
Current Funding	N/A
Years of Operation	2013 - present
Initiative type	Teaching and learning resources
Target Audience	Students
Target ages	Secondary
Equity Target Groups	N/A
Target STEM Areas	STEM
Scale	262 schools across NSW
Evaluations	N/A
Evaluation Methodology	N/A
Evaluation findings	N/A
Value for money	N/A
Decisions post-evaluations	N/A
Website	N/A

STEMShare Community program

Name of provider/ organisation	NSW Department of Education
State/Territory	NSW
Aim	Student participation in STEM; Increased student engagement; improved student learning outcomes
Description	STEMShare Communities is a coordinated program of STEM technology kits, teacher training, curriculum-linked learning challenges and an online community of practice, empowering schools to teach students the skills to solve the problems of tomorrow. It aims to raise awareness of the effective use of technology, to improve student learning and enable teachers to understand, experience and embed STEM technologies effectively into the teaching and learning cycle.
Funder(s)	NSW Department of Education
Current Funding	$23 million
Years of Operation	Start 2018
Initiative type	Teaching and learning resources
Target Audience	Students
Target ages	Primary; Secondary
Equity Target Groups	N/A
Target STEM Areas	Technologies
Scale	NSW-wide
Evaluations	Internal evaluation conducted on 2018 pilot
Evaluation Methodology	Administrative data; Analysis of student work; Classroom observations; Focus groups; Interviews/consultations
Evaluation findings	Increased participant interest in STEM; increased participant confidence in their capacity to implement STEM concepts into their teachning and learning STEM abilities; increased likelihood of students continuing to study STEM subjects; improvement in participants' STEM skills; increased teacher confidence in the delivery of STEM foccussed teaching and learning; most participants would recommend the program.
Value for money	This program is funded for 3 years at a cost of $23Mil. Over the scope of this projects, all students and teachers across NSW (~2250 school sites - 6 operational directorates - 120 Principal Networks) will have access to resources, professional learning and support to enhance their understanding and capacity to implement STEM within their teaching and learning. An online resource Learning Library will be established, enabling teachers to collaborate and share high quality online learning resources, which will continue long after the project funding has ceased.
Decisions post-evaluations	Positive data received from all pilot participants supported the effectiveness of the STEMShare Communities Project and recommended the full implementation of the project, which commenced in Term 4, 2018. Ongoing research will be conducted to monitor and validate the project's performance and impact on student/teacher perfomance.
Website	N/A

STEM Industry Schools Partnership - SISP (STEM Share Partnerships)

Name of provider/ organisation	NSW Department of Education
State/Territory	NSW
Aim	Increased student engagement; Student participation in STEM; Student career aspirations
Description	This STEM initiative initally focuses on three regional areas: Cessnock, Orange and Goulburn. The main priorities for 2018 include setting up three regional communities of STEM practice, developing sustainable school/industry partnerships for STEM career education, providing professional learning for regional and remote schools, revising the Stage 5 iSTEM course, implementing a Stage 4 iSTEM course and developing a Stage 3 iSTEM course. Focus on primary school to high school transition is also embedded in the initiative.
Funder(s)	NSW Department of Education, Regional Development Australia
Current Funding	550000
Years of Operation	2018 - 19
Initiative type	Professional learning for teachers; Teaching and learning resources
Target Audience	Teachers; School leaders; Industry/community
Target ages	Primary; Secondary
Equity Target Groups	Rural/remote
Target STEM Areas	STEM
Scale	19 Schools (3 Secondary, 16 Primary). Additional Schools have accessed SISP activities in addition to pilot schools.
Evaluations	Internal evaluation of 2018 Semester 2
Evaluation Methodology	Surveys (student, teacher, industry partners)
Evaluation findings	To be finalised by 20th December 2018.
Value for money	To be finalised by 20th December 2018.
Decisions post-evaluations	To be finalised by 20th December 2018.
Website	https://rdacentralwest.org.au/initiatives/stem-workforce-initiative/

STEM Action School Mentoring Program - Primary

Name of provider/ organisation	NSW Department of Education
State/Territory	NSW
Aim	Teacher development; Increased student engagement; Improved student learning outcomes
Description	NSW Department of Education has established eight STEM Action Schools at a primary school level to mentor and share innovative STEM practice and programs with other schools. STEM Action Schools implement curriculum programs designed to develop students' foundational knowledge and skills in STEM subjects as well as skills of collaboration, critical and creative thinking and problem solving. A goal of this program is to facilitate experienced staff to lead a community of practice in the teaching of STEM.
Funder(s)	NSW Department of Education
Current Funding	179000
Years of Operation	2017 - present
Initiative type	Community of practice; mentoring for teachers and schools
Target Audience	Teachers; students
Target ages	Primary
Equity Target Groups	N/A
Target STEM Areas	STEM
Scale	63 schools, though some STEM action schools have provided professional development for an increased number of mentee schools
Evaluations	Internal evaluation conducted in 2018
Evaluation Methodology	Surveys
Evaluation findings	Internal evaluation to be finalised 2018
Value for money	After the provision of the initial professsional learning for the eight STEM Action schools, each school was given an initial $10,000. Additional funds were provided for schools due to the high number of schools interested in becoming mentee schools in STEM education. These funds were used to offer mentoring for other schools and build the capacity of teachers from both the STEM Action schools and the mentored schools. This represented excellent value for money.
Decisions post-evaluations	Internal evaluation to be finalised.
Website	N/A

Rural and Remote Primary STEM project

Name of provider/ organisation	NSW Department of Education
State/Territory	NSW
Aim	Teacher development; Increased student engagement; Improved student learning outcomes
Description	The Rural and Remote Primary STEM Project has adopted an integrated approach to teaching mathematics, science and technology across K-6. The project aims to develop learning experiences through the use of project-based learning strategies. Teachers from 33 schools working either as individual schools or communities of schools are involved in the project and will document their journey. Three STEM action schools provided advice and support for the 33 schools.
Funder(s)	NSW Department of Education
Current Funding	277000
Years of Operation	2018
Initiative type	Community of practice; professional learning for teachers; teaching and learning resources
Target Audience	Teachers; students
Target ages	Primary
Equity Target Groups	Rural/remote
Target STEM Areas	STEM
Scale	33 schools
Evaluations	Internal evaluation conducted in 2018
Evaluation Methodology	Surveys; school visits; focus groups; classroom observations
Evaluation findings	Internal evaluation to be finalised 2018
Value for money	Internal evaluation to be finalised in 2018. Each school was provided with $6,000 to support the implementation of their STEM project.
Decisions post-evaluations	Internal evaluation to be finalised.
Website	N/A

Centre for Excellence schools

Name of provider/ organisation	Northern Territory Department of Education
State/Territory	NT
Aim	Improved student learning outcomes; Increased student engagement; Student career aspirations
Description	Centres for Excellence cater for high ability government school students in Years 10, 11 and 12 who have a passion for learning in a specialist area.
Funder(s)	Northern Territory Department of Education
Current Funding	Currently school-based processes
Years of Operation	2011 - present
Initiative type	Other - specialist school program for gifted students
Target Audience	Students
Target ages	Secondary
Equity Target Groups	N/A
Target STEM Areas	STEM
Scale	5 schools
Evaluations	N/A
Evaluation Methodology	N/A
Evaluation findings	N/A
Value for money	N/A
Decisions post-evaluations	N/A
Website	https://nt.gov.au/learning/primary-and-secondary-students/apply-to-a-centre-for-excellence-school

Extending digital skills challenge events to children in regional centres

Name of provider/ organisation	Northern Territory Department of Education
State/Territory	NT
Aim	Improved student learning outcomes; Increased student engagement; Student participation in STEM; Student career aspirations
Description	Children in regional areas will have opportunities to participate in digital challenges and learn new skills so they can succeed in the digital jobs market.
	Digital skills programs successfully delivered in Darwin are being taken to Territory regional and remote centres to reach more NT children. Digital solutions, drone programs, LEGO® League competition, Coding Camps and RoboCup Junior competitions programs are fun learning activities that excite and engage children and foster their natural interest in learning while gaining valuable digital skills.
Funder(s)	Northern Territory Department of Education
Current Funding	Within existing core funded program budget
Years of Operation	STEM in the Territory Strategy 2018 - 2022
Initiative type	Teaching and learning resources
Target Audience	Students
Target ages	Primary; Secondary
Equity Target Groups	Low SES; Rural/remote; Girls/women; Indigenous
Target STEM Areas	Technologies
Scale	16 schools participating in the ACARA Digital Technologies in Focus project
	Schools participate in the University of Adelaide National lending Library
Evaluations	Internal evaluation
Evaluation Methodology	Administrative data; Student achievement data
Evaluation findings	N/A
Value for money	N/A
Decisions post-evaluations	N/A
Website	https://digitalterritory.nt.gov.au/digital-directions/building-digital-skills

Build partnerships between the education sector, digital innovators and industry to grow STEM education and increase digital skills

Name of provider/ organisation	Northern Territory Department of Education
State/Territory	NT
Aim	Improved student learning outcomes; Increased student engagement; Student participation in STEM; Student career aspirations; Industry and education partnerships
Description	The Department of Education will coordinate and pursue partnerships between schools and innovation orientated organisations to strengthen the focus on STEM skills for Territory school students and highlight opportunities that are available through digital jobs.
Funder(s)	Northern Territory Department of Education
Current Funding	Within existing core funded program budget
Years of Operation	STEM in the Territory Strategy 2018 - 2022
Initiative type	Other - partnerships between schools and organisations
Target Audience	Students; School leaders; Industry/community
Target ages	Primary; Secondary
Equity Target Groups	Low SES; Rural/remote; Girls/women; Indigenous
Target STEM Areas	STEM
Scale	N/A
Evaluations	Internal evaluation
Evaluation Methodology	Administrative data; Student achievement data
Evaluation findings	N/A
Value for money	N/A
Decisions post-evaluations	N/A
Website	https://digitalterritory.nt.gov.au/digital-directions/building-digital-skills

STEM Hub for schools

Name of provider/ organisation	Queensland Department of Education
State/Territory	Qld
Aim	Improved student learning outcomes; Increased student engagement; Student participation in STEM; Student career aspirations; Family and community partnerships
Description	The STEM hub for schools website supports school staff to implement engaging STEM teaching and learning programs and foster student participation and achievement in STEM. The STEM hub brings together information, resources and advice for students, families and community members wanting to learn more about STEM.
Funder(s)	Queensland Department of Education
Current Funding	N/A
Years of Operation	2016 - present
Initiative type	Teaching and learning resources
Target Audience	Teachers; Students; Families; School leaders
Target ages	Primary; Secondary
Equity Target Groups	N/A
Target STEM Areas	STEM
Scale	Approximately 800 views per month
Evaluations	Program is self-evaluated annually. No departmental or external evaluation has been conducted.
Evaluation Methodology	Web analytics
Evaluation findings	Increased awareness to schools, staff, parents and students about STEM programs, support, resources and initiatives offered. This is shown in increased participation in STEM programs and student engagement in STEM subjects and competitions.
Value for money	N/A
Decisions post-evaluations	Both websites continue to be monitored and updated with relevant and up to date information and resources.
Website	https://learningplace.eq.edu.au/cx/resources/file/0fc6062c-a582-4c7b-9313-dc453c8d8901/1/index.html https://learningplace.eq.edu.au/cx/resources/file/5da759ed-285d-4132-b8e8-58198109fb03/1/index.html

Entrepreneurs of Tomorrow school grants

Name of provider/ organisation	Queensland Department of Education
State/Territory	Qld
Aim	Improved student learning outcomes; Increased student engagement; Teacher development; Student participation in STEM; Student career aspirations; Family and community partnerships; Industry and education partnerships
Description	116 state primary and high schools, including some clusters of schools, shared in 100 Entrepreneurs of Tomorrow grants. The schools or cluster of schools each received or shared in a $16,600 grant to nurture the next generation of digital entrepreneurs.
	Entrepreneurial skills are essential to drive innovation, productivity and global awareness. Schools used their coding, robotics and entrepreneurial programs to provide opportunities for students to create innovative digital solutions and to connect with industry expertise. Schools built students' entrepreneurial skills through real world experiences by inspiring them to be the creators of Queensland's future.
Funder(s)	Queensland Department of Education
Current Funding	$1.66 million (2016-2018)
Years of Operation	2016 - 2018
Initiative type	Grants program
Target Audience	Teachers; Students; School leaders
Target ages	Primary; Secondary
Equity Target Groups	N/A
Target STEM Areas	Technologies
Scale	116 schools
Evaluations	Internal evaluation and evaluation data collected.
Evaluation Methodology	Analysis of student work; Classroom observations; interviews/consultations and surveys with students/teachers/school leaders.
	Each school or cluster that participated in the program were required to completed an Interim report by the end of 2017 and an Evaluation report by the end of 2018.
Evaluation findings	Report and survey findings found that when this project commenced, knowledge of entrepreneurship was limited.
	The parameters for expenditure of the EoT grant funding were that the school implementation was:
	- based on improving students' and/or teachers' entrepreneurial skills using coding and/or robotics in innovative and creative ways;
	- linked to the Australian Curriculum: Technologies; and
	- creating and expanding connections with external expertise through establishing sustainable partnerships.
Value for money	Participating schools (including clusters of schools) received their first payment of $10,000 in June 2016, a second payment of $3,300 in June 2017 and third payment of $3,300 in June 2018. Comprised of: Department of Education and Training ($670,000) and the then Department of Tourism, Major Events, Small Business and the Commonwealth Games ($990,000). As a result of this project almost 1300 teachers from the 116 Entrepreneurs of Tomorrow schools were involved in professional learning associated with entrepreneurship.

	Over 27,000 students have been involved in entrepreneurialism programs as a result of this grant.
Decisions post-evaluations	The project commenced in June 2016 and officially concluded in June 2018 although schools have incorporated sustainability measures to maintain and enhance the project in their school beyond this period.
	The final review of the program found that the EoT grant was implemented in a majority of schools involved in the program and that the program met its overall aims and objectives.
Website	https://education.qld.gov.au/curriculum/school-curriculum/stem

STEM Girl Power initiative including: Camp and Alumni Event

Name of provider/ organisation	Queensland Department of Education
State/Territory	Qld
Aim	Improved student learning outcomes; Increased student engagement; Student participation in STEM; Student career aspirations
Description	The STEM Girl Power Camp is an annual initiative of Advancing Education: An action plan for education in Queensland. The camp encourages girls to participate in STEM by engaging in a range of exciting STEM experiences and inviting them to inspire other students by being a STEM ambassador in their school and community. The camp coincides with the annual World Science Festival Brisbane.
	The STEM Girl Power Alumni Event is held in Semester 2 and celebrates the activities STEM Girl Power Camp students have undertaken in their schools during the year.
Funder(s)	Queensland Department of Education
Current Funding	Budgeted at approximately $157,807 for 2019
Years of Operation	2017 - present
Initiative type	Residential camp for students; Mentoring for students
Target Audience	Students
Target ages	Secondary
Equity Target Groups	Girls/women
Target STEM Areas	STEM
Scale	Approximately 60 female students per year.
Evaluations	Multiple internal evaluations have been conducted over the life of the program.
Evaluation Methodology	Surveys with students and teachers who attended or previously attended the camp or forum
Evaluation findings	The survey of participants following the 12-month STEM Girl Power initiative demonstrated that:
	- 100% of students are planning to select senior STEM subjects and 92% of students are considering STEM pathway beyond Year 12;
	- 97% of students have been inspired by STEM role models and 95% felt they have gained real-world STEM experience;
	- 92% of students felt they have been able to connect with like-minded students;
	- 84% of students identified that they had refined their leadership skills and 92% of students felt that they had enhanced their communication skills;
	- 92% of students identified that they had promoted STEM in their region, with 95% of students having participated in or organised regional STEM events; and
	- 100% of students reported that they enjoyed their role as a STEM Girl Power Ambassador, with 97% of students indicating that they would like to remain connected to the STEM Girl Power network in future years.
Value for money	Estimated costs for major project activities include travel, catering and teacher relief. There are no costs to students or schools.

Decisions post-evaluations	Student comments on the overall program highlighted the inspiring nature of the program, connecting with like-minded students, interacting with STEM experts and developing as a STEM Ambassador.
	Since 2017 the program has been successfully implemented and will continue in 2019.
Website	https://education.qld.gov.au/about-us/budgets-funding-grants/grants/state-schools/core-funding/stem-girl-power-camp

Queensland Coding Academy

Name of provider/ organisation	Queensland Department of Education
State/Territory	Qld
Aim	Improved student learning outcomes; Increased student engagement; Teacher development; Student participation in STEM
Description	There are two related but separate websites.
	The Queensland Coding Academy is a resource developed to build teacher capability and support school implementation. It was developed in recognition that the Australian Curriculum: Digital Technologies contains content some schools may not have previously taught. It includes advice for school leaders, resources and links, teaching strategies, introductory activities, and unpacks the curriculum including key concepts.
	The QCA: Student supports differentiated teaching and learning of the Digital Technologies subject in the classroom. It includes practical activities for all levels of student ability. The website is a supplementary resource that can be used to support teaching the Curriculum into the Classroom (C2C) Digital Technologies' units. It is accessible by students and teachers.
Funder(s)	Queensland Department of Education
Current Funding	N/A
Years of Operation	2016 - present
Initiative type	Professional learning for teachers; Teaching and learning resources
Target Audience	Teachers; Students; School leaders
Target ages	Primary; Secondary
Equity Target Groups	N/A
Target STEM Areas	STEM
Scale	Approximately 3100 registered users in 2018.
Evaluations	Multiple internal evaluations have been conducted over the life of the program.
Evaluation Methodology	Web analytics
Evaluation findings	Web analytics show increased participation and implementation of the Australian Curriculum: Digital Technologies both in terms of teacher capability and teaching practise.
Value for money	N/A
Decisions post-evaluations	Review of the program shows that there is a need to continue to review and audit the program to ensure resources are up to date and the websites are user friendly.
	The program has been successfully implemented and will continue to operate in 2019.
Website	Queensland department intranet links only: https://elearn.eq.edu.au/webapps/blackboard/content/listContent.jsp?course_id= _119219_1&content_id=_21147820_1&mode=reset
	Queensland https://learningplace.eq.edu.au/cx/resources/file/7c486586-67bd-4b3a-9bbc-010a499ce559/1/index.html

Premier's Coding Challenge

Name of provider/ organisation	Queensland Department of Education
State/Territory	Qld
Aim	Increased student engagement; Student participation in STEM; Student career aspirations
Description	The Premier's Coding Challenge encourages student creativity and engagement in coding, and provides an opportunity to showcase and celebrate their innovation and achievements developing a game, animation or app to help friends stay safe and secure in a digital world.
Funder(s)	Queensland Department of Education
Current Funding	Approximately $24,331.12 spent in 2017-2018 financial year.
Years of Operation	2017 - present
Initiative type	Awards
Target Audience	Students
Target ages	Primary; Secondary
Equity Target Groups	N/A
Target STEM Areas	Technologies
Scale	215 entries in 2018
Evaluations	Internal evaluation; Some evaluation data collected
Evaluation Methodology	Surveys and feedback are collected and reviewed each year
Evaluation findings	Review findings include: - there is a greater public awareness of the competition; - more schools are implementing Australian Curriculum: Digital Technologies; - Increased student creativity and engagement in coding, and the competition provided an opportunity to showcase and celebrate their innovation and achievements developing a game, animation or app to help friends stay safe and secure in a digital world.
Value for money	The total cost for the 2017-2018 Financial year was $24,331.12. This includes the cost of the entry submission portal, prizes, media services, certificate framing, photographer and travel. The competition is free for students from state and non state schools across Queensland to enter.
Decisions post-evaluations	Review of the project resulted in changes to the open and close submission dates, strengthening the functionality of the entry submission portal, encouraging students who begin entries to complete them. The program has been successfully implemented and will continue to operate in 2019.
Website	http://advancingeducation.qld.gov.au/codingcounts/Pages/codingcompetition.aspx

STEM virtual academies

Name of provider/ organisation	Queensland Department of Education
State/Territory	Qld
Aim	Improved student learning outcomes; Increased student engagement; Student participation in STEM
Description	The Queensland Virtual STEM Academy (QVSA) will deliver enrichment and enhancement programs focusing on current, real world STEM challenges and research. These programs will be developed and delivered by Queensland Academy for Science Mathematics and Technology or sourced from likeminded, quality assured partners and school centres of innovation or specialisation. The learning delivered by the QVSA is aligned to the Australian Curriculum and is designed to extend learning and challenge student interests and learning beyond the Australian Curriculum. The QVSA will use an innovative, real time, online learning platform to deliver programs and enable students to collaborate with other likeminded, highly capable STEM students.
Funder(s)	Queensland Department of Education
Current Funding	$0.65m in 2016-18
Years of Operation	2016 - present
Initiative type	Teaching and learning resources
Target Audience	Students
Target ages	Primary; Secondary
Equity Target Groups	N/A
Target STEM Areas	STEM
Scale	In 2017, 364 students accessed 29 scheduled programs; 92 state schools participated. In 2018, 956 students accessed 76 scheduled programs; 124 state schools participated.
Evaluations	Multiple internal evaluations and data collection conducted over the life of the program.
Evaluation Methodology	Surveys with students/teachers/school leaders and Web analytics has been collected
Evaluation findings	Continued reviews of the project found that QVSA continues to: – increase access to specialist science experiences for rural and remote students. – increase STEM participation of target groups – girls and Indigenous students. – collaborate with universities, industry and organisations. – support teachers to expand their STEM knowledge and digital pedagogy.
Value for money	There are no costs to students or schools during the pilot phase.
Decisions post-evaluations	Through the use of surveys and the collation of feedback, the trial has successfully demonstrated that virtual learning solutions are an effective tool in enabling collaborative empowerment for both students and educators. It has facilitated learning opportunities across Queensland's geographically dispersed education population without the significant financial overhead of service provision within rural and remote communities. The program has been successfully implemented and will continue to operate in 2019.
Website	https://qvsa.eq.edu.au/Pages/default.aspx

Robotics for the future Lending Library

Name of provider/ organisation	Queensland Department of Education
State/Territory	Qld
Aim	Improved student learning outcomes; Increased student engagement; Teacher development; Student participation in STEM; Student career aspirations
Description	The Robotics for the future Lending Library provides access to Pepper, NAO robots and Sphero classroom kits from the Robotics for the future Lending Library to support schools to teach coding and robotics.
Funder(s)	Queensland Department of Education
Current Funding	$0.66m project in partnership with SoftBank – ST Solutions Australia. To date, the six Pepper and 10 Nao humanoid robots purchased have cost $338,503.
Years of Operation	2018 - present
Initiative type	Professional learning for teachers; Teaching and learning resources
Target Audience	Teachers; Students
Target ages	Primary; Secondary
Equity Target Groups	N/A
Target STEM Areas	Technologies
Scale	Since Semester 1 2018, the Robotics for the future lending library has enabled 65 schools across Queensland to provide opportunities for their students to code the robots in their own classroom.
Evaluations	Multiple internal evaluations and data collection has been conducted over the life of the program.
Evaluation Methodology	Analysis of student work; Classroom observations and Surveys with students/teachers/school leaders
Evaluation findings	This project allows the department to provide students with authentic learning challenges to meet current and future needs in our knowledge-based society.
Value for money	There are no costs to students or schools.
Decisions post-evaluations	Review of the project and feedback shows that students are able to connect their classroom learning with future opportunities. The 10 NAO and 6 Pepper robots are providing students with access to cutting edge technology. The program has been successfully implemented and will continue to operate in 2019.
Website	https://det-school.eq.edu.au/schools/stem-rbf/

Advancing STEM in Queensland's state primary schools

Name of provider/ organisation	Queensland Department of Education
State/Territory	Qld
Aim	Improved student learning outcomes; Increased student engagement; Teacher development; Student participation in STEM; Industry and education partnerships.
Description	Advancing STEM in Queensland state primary schools is enabling primary schools to source the expertise they need in their local context from secondary schools, universities or industry and align this with their school improvement plan. The funding is also helping primary schools to access the resources they need and forge new partnerships to make STEM learning more active and engaging.
Funder(s)	Queensland Department of Education
Current Funding	The Advancing STEM for State primary schools initiative will allocate $81.3m in funding over four years (2018 - 2022)to provide expertise in STEM disciplines for Queensland's state primary schools.
Years of Operation	2018 - 2022
Initiative type	Professional learning for teachers; Teaching and learning resources; Grants program
Target Audience	Teachers; Students; School leaders
Target ages	Primary
Equity Target Groups	N/A
Target STEM Areas	STEM
Scale	All Queensland state primary schools
Evaluations	Internal evaluation; Some evaluation data collected.
Evaluation Methodology	Focus groups and surveys with teachers/school leaders is collected during regional workshops and through Regional STEM Champions
Evaluation findings	Evaluation found that the funding was widely implemented and has been successful in building teacher capacity. Schools are using the funding to source expertise from local secondary schools, universities or industry to support their school's improvement plan, or to access resources they need and forge new partnerships to make STEM learning more active and engaging.
Value for money	There are no costs to students or schools. The grant increases from $25 per student in 2018–2019 to $51 per student in 2019–2020; $79 per student in 2020–2021 and $108 per student in 2021–2022.
Decisions post-evaluations	Regional workshops were undertaken to 82 Queensland state primary schools to support schools to build teacher capability to teach STEM subjects. Feedback shows there is a need for STEM resources and online professional learning and development support for teachers. The program has shown to be successful and funding, resources and professional development will continue in 2019.
Website	https://education.qld.gov.au/about-us/budgets-funding-grants/grants/state-schools/core-funding/stem-primary-schools

#qldtechschools

Name of provider/ organisation	Queensland Department of Education
State/Territory	Qld
Aim	Teacher development; Improved student learning outcomes; Increased student engagement; Student participation in STEM
Description	The #qldtechschools initiative has been developed to support Queensland state schools to implement the new Australian Curriculum: Technologies by the end of 2020. Participation in #qldtechschools will support schools to build teachers' capability to teach, assess and report on Digital Technologies and Design and Technologies.
Funder(s)	Queensland Department of Education
Current Funding	N/A
Years of Operation	2017 - present
Initiative type	Professional learning for teachers; Teaching and learning resources
Target Audience	Teachers; School leaders
Target ages	Primary; Secondary
Equity Target Groups	N/A
Target STEM Areas	Technologies
Scale	All Queensland schools
Evaluations	Internal evaluation; Some evaluation data collected.
Evaluation Methodology	Surveys (with teachers/school leaders); Web analytics
Evaluation findings	Review and feedback collected from schools who have participated in the project shows that schools are being provided with the necessary resources and support to help teachers to collaborate and share their practice through professional learning communities.
Value for money	There are no costs to students or schools.
Decisions post-evaluations	Feedback shows there is a continued need to build teacher capability to teach, assess and report on Digital Technologies and Design and Technologies. The program is scheduled to end in Semester 1 2019. However resources and support will continue to be offered and available.
Website	https://intranet.qed.qld.gov.au/EducationDelivery/Stateschooling/Teachingquality/Pages/STEM.aspx

STEM Teacher Symposium

Name of provider/ organisation	Queensland Department of Education
State/Territory	Qld
Aim	Improved student learning outcomes; Increased student engagement; Teacher development; Student participation in STEM; Industry and education partnerships
Description	The STEM Teacher Symposium aims to build a culture of evidence-based practice and to showcase the delivery of innovative and high quality STEM teaching and learning in state schools.
Funder(s)	Queensland Department of Education
Current Funding	N/A
Years of Operation	2016 - present
Initiative type	Professional learning for teachers; Teaching and learning resources
Target Audience	Teachers; School leaders
Target ages	Primary; Secondary
Equity Target Groups	N/A
Target STEM Areas	STEM
Scale	Queensland state schools
Evaluations	Internal evaluation; Some evaluation data collected
Evaluation Methodology	Surveys (teachers/school leaders/presenters)
Evaluation findings	The survey of participants following the event demonstrated that: -79% of participants felt they had a better understanding of the evidence underpinning STEM teaching and learning; - 92% of participants felt they had better understanding of inquiry, design and innovation in STEM teaching and learning; - 80% of participants could see the opportunities to translate research into practice; - 83% of participants identified that the presentations helped to reflect on their classroom practice; - 96% of participants identified that the workshops helped to reflect on their classroom practice; and - 80% of participants rated the event overall as very good or excellent. - Comments made by delegates on the benefits of the Symposium highlighted the key themes of collaboration, evidence and improving practice.
Value for money	The budget of ~$34,000 partially offset by a registration fee of $50 per day for the two-day event for the 160 participants per day.
Decisions post-evaluations	Comments made by delegates on the benefits of the Symposium highlighted the key themes of collaboration, evidence and improving practice. The two day event continues to be a success since 2016. The event meets the main objectives to build teacher capability. The two day event will be held again in 2019.
Website	https://learningplace.eq.edu.au/cx/resources/file/0fc6062c-a582-4c7b-9313-dc453c8d8901/1/html/resources.html

STEM partnerships and collaborations with Queensland Museum, World Science festival Brisbane

Name of provider/ organisation	Queensland Department of Education and Queensland Museum
State/Territory	Qld
Aim	Improved student learning outcomes; Increased student engagement; Teacher development; Student participation in STEM; Student career aspirations; Family and community partnerships; Industry and education partnerships
Description	The department has developed partnerships and collaborations to support STEM professional development for teachers, engage students in STEM learning and share resources. World Science Festival Brisbane (WSFB) program includes dedicated educational programs that underpin Queensland Museum's commitment to support and foster STEM-literacy and inspire a love of science by showcasing the diverse career opportunities afforded by studying these subjects.
Funder(s)	Queensland Department of Education and Queensland Museum, World Science Festival Brisbane
Current Funding	In 2016 and 2017 the Queensland Museum pilot project to develop a program overview and curriculum links for the World Science Festival Brisbane. In 2018 the department agreed to $100,000 in sponsorship for the World Science Festival Brisbane and provided support at events.
Years of Operation	2017 - present
Initiative type	Professional learning for teachers; Teaching and learning resources; Mentoring for students
Target Audience	Teachers; Students; Families; School leaders; Industry/community
Target ages	Primary; Secondary
Equity Target Groups	N/A
Target STEM Areas	STEM
Scale	Queensland schools
Evaluations	External evaluation; partners conduct their own evaluations and report outcomes.
Evaluation Methodology	Interviews/consultations and surveys with students/teachers/school leaders/parents
Evaluation findings	The Queensland Museum World Science Festival Brisbane (WSFB) independent evaluation found that the event offered: - opportunities for high performing and high potential students to directly participate in WSFB; - increased access for all students across Queensland and other states through curated streaming opportunities using the departments information technology (IT) platforms; and - teacher professional and capability development opportunities.
Value for money	Following a review of the 2018 sponsorship arrangement, the Queensland Government has decided to fund the WSFB collaboration directly in 2019 rather than through sponsorship from various departments.

Decisions post-evaluations	The department and Queensland Museum World Science Festival Brisbane will continue their partnership in 2019 and continue to align events to the Science and Technologies curricula that are suitable for a range of year levels across Prep to Year 12.
Website	http://www.worldsciencefestival.com.au/

STEM partnerships and collaborations with Wonder of Science (University of Queensland)

Name of provider/ organisation	Queensland Department of Education and Wonder of Science (University of Queensland)
State/Territory	Qld
Aim	Improved student learning outcomes; Increased student engagement; Teacher development; Student participation in STEM; Student career aspirations; Industry and education partnerships
Description	The department has developed partnerships and collaborations to support STEM professional development for teachers, engage students in STEM learning and share resources. The Wonder of Science program will provide inquiry-based STEM experiences for schools and students. Wonder of Science supports students in remote and rural areas.
Funder(s)	Queensland Department of Education and Wonder of Science (University of Queensland)
Current Funding	No transfer of money but the department will continue to pay the salary and oncost for the seconded State Schools officer at AO8 level
Years of Operation	2013 - present
Initiative type	Professional learning for teachers; Teaching and learning resources; Mentoring for students
Target Audience	Teachers; Students; School leaders; Industry/community
Target ages	Primary; Secondary
Equity Target Groups	Rural/remote
Target STEM Areas	STEM
Scale	Queensland schools
Evaluations	External evaluation; partners conduct their own evaluations and report outcomes. Last Annual report conducted 2016-2017.
Evaluation Methodology	Analysis of student work; Classroom observations; consultations with students, teachers, school leaders; Student achievement data; Surveys with students, teachers, school leaders
Evaluation findings	The Wonder of Science independent evaluation found that the program promoted a Strong STEM culture, was widely implemented and was successful in building teacher capacity.
Value for money	The 2016-2017 report found that the growth in demand for Wonder of Science has significantly extended the reach into schools across Queensland in 2016-17. This included schools in the metropolitan region as well as regional and remote areas, impacting almost 6000 students (175% growth) and their teachers in 130 schools. "The money we put forward on Wonder of Science supported the significant learning of 35 students. So if you work that at cost per head, it's less than $100 per child. What they got out of the learning; bringing those specialised people into the school, having a follow up program (conference), and then building new partnerships. You couldn't do that for three times that amount of money. So in terms of value for money, principals if you see this come on board." Principal of Kimberley Park State School.
Decisions post-evaluations	The review concluded that the partnership between the department and Wonder of Science is valuable in building teacher capability to support students in rural and remote places and will and will continue in 2019.
Website	www.wonderofscience.com.au

STEM partnerships and collaborations with CSIRO

Name of provider/ organisation	Queensland Department of Education and CSIRO
State/Territory	Qld
Aim	Improved student learning outcomes; Increased student engagement; Teacher development; Student participation in STEM; Student career aspirations; Industry and education partnerships
Description	The department has developed partnerships and collaborations to support STEM professional development for teachers, engage students in STEM learning and share resources.
	CSIRO's Education and Outreach has a team of professional educators across Australia which:
	- develop and provide high quality, innovative and authentic STEM education experiences to deliver positive impact for Australia;
	- deliver value through engaging and empowering opportunities for educators, industry, government and community;
	- work creatively and collaboratively to deliver high quality products and services and provide authentic learning experiences to all Australians; and
	- raise the awareness of CSIRO and Australian Innovation to drive economic, environmental and social impact for Australia.
Funder(s)	Queensland Department of Education and CSIRO
Current Funding	Total grant amount approximately $90,000 (GST not included) per financial year
Years of Operation	2017 - present
Initiative type	Professional learning for teachers; Teaching and learning resources; Mentoring for students
Target Audience	Teachers; Students; School leaders; Industry/community
Target ages	Primary; Secondary
Equity Target Groups	N/A
Target STEM Areas	STEM
Scale	Queensland schools
Evaluations	External evaluation; partners conduct their own evaluations and report outcomes.
	Last Annual report was conducted 2017-2018.
Evaluation Methodology	Analysis of student work; Classroom observations; consultations with students, teachers, school leaders; Student achievement data; and Surveys with students, teachers, school leaders
Evaluation findings	CSIRO is supporting the Queensland Department of Education in delivering on the Strategy for STEM in Queensland State Schools by assisting schools in building teacher capability, achieving excellence in STEM (lifting student achievement) and engaging more students in STEM (increasing student participation).
Value for money	The 2017-2018 CSIRO report found that CSIRO has delivered to both state government and non-government schools from all seven Queensland regions. The program delivered an innovative range of programs, all aligned to the Australian Curriculum, and have seen the participation of 40,000 students and 800 teachers in their events and/or programs in Queensland during the 2017–2018 financial year.

Decisions post-evaluations	The review concluded that the partnership between the department and CSIRO is valuable and all Key Performance Indicators (KPI) were met and the partnership will continue onto 2020.
Website	www.csiro.au

Step into STEM Teaching Scholarships

Name of provider/ organisation	Queensland Department of Education
State/Territory	Qld
Aim	Other - attract new teachers to teach STEM subjects.
Description	The Step into STEM Teaching Scholarships program offers support for accomplished, tertiary-qualified individuals to undertake postgraduate initial teacher education studies. The program is managed by the Qld Department of Education (DoE) to assist state schools in attracting high quality professionals. Scholarship recipients receive generous financial support, guaranteed employment as a teacher in a Qld state school and a range of additional assistance during their studies and transition from graduate to beginning teacher. Scholarship recipients who secure permanent employment with the Qld DoE are required to fulfil a minimum service commitment of up to three years (dependant on category) full-time employment once their studies are completed.
Funder(s)	Queensland Department of Education
Current Funding	$0.403 million has been awarded for Step into STEM teaching scholarships in 2017
Years of Operation	2014-2018
Initiative type	Professional learning for teachers and scholarship program.
Target Audience	Other - Tertiary-qualified individuals who are considering a career in teaching.
Target ages	Other - Tertiary-qualified adults
Equity Target Groups	N/A
Target STEM Areas	STEM
Scale	N/A
Evaluations	Multiple internal and external evaluations have been conducted over the life of the program.
Evaluation Methodology	Surveys, focus groups, administrative data
Evaluation findings	Since the program began in 2014 the scholarships have attracted and supported high-quality preservice teachers (undergraduate or postgraduate) in an initial teacher education programs, specialising in STEM curriculum for employment in high-priority, rural and remote Queensland state schools.
Value for money	There are no costs to teachers or schools.
Decisions post-evaluations	Review findings show that the scholarship program has been successfully implemented and met the programs objectives each year and continued in 2017-2018 as the rural and remote STEM teaching scholarships (32 scholarships of $15,000 each).
Website	N/A

Year 7 and 8 STEM Collaborative Inquiry Project

Name of provider/ organisation	South Australian Department for Education
State/Territory	SA
Aim	Improved student learning outcomes; Increased student engagement; Teacher development; Student participation in STEM; Student career aspirations; Family and community partnerships; Industry and Education partnerships
Description	The Year 7 & 8 STEM Collaborative Inquiry Project brings together five school networks with industry and academic partners to collaboratively design, trial and evaluate innovative and evidence-informed approaches for STEM learning across primary and secondary schools.
Funder(s)	South Australian Department for Education
Current Funding	Funding for 5 school networks of $1,309,000 for three years 2016 - 2018
Years of Operation	2016 - present (2016 - schools selected; 2017 - 2018 - evaluation data collected; 2019 - continuation of data collection)
Initiative type	Other
Target Audience	Teachers; Students; Families; School leaders; Industry/Community
Target ages	Primary; Secondary
Equity Target Groups	Low SES; Indigenous; Rural/remote; Girls/women
Target STEM Areas	STEM
Scale	39 schools, 50 leaders, 250 teachers, 6000 students, 46 industries
Evaluations	External evaluation
Evaluation Methodology	Surveys (teachers, students, parents, industry); Focus groups (teachers, students); Interviews/consultations (teachers, leaders, students, other); Student achievement data; Classroom observations; Analysis of student work; Analysis of student and teacher journals; Administrative data; Other (videos)
Evaluation findings	Evaluation report by external evaluators to be published in early 2019.
Value for money	Cost per school approximately $27,000.
Decisions post-evaluations	Using collaborative inquiry projects to enhance students' self-efficacy and self-concept in science: Patterns and surprises in the data. (Elliott,K., Panizzon,D., Semmens,A., White,B., 2018) Presented at the Australasian Science Education Research Association (ASERA) conference June 29th 2018 by Associate Professor Debra Panizzon. This paper will now become a book chapter in 'Springer Nature', in 2019. Paper published 2018 Mathematics Anxiety: Year 7 and 8 Student Perceptions. (Elliott,K., O'Keefe,L., Panizzon,D., Semmens,A., White,B., 2018) Presented at the Mathematics Education Research Group of Australasia (MERGA) conference July 4th 2018 by Dr Lisa O'Keefe.
Website	Year 7/8 STEM Collaborative Inquiry Project Moodle - https://dlb.sa.edu.au/tlsmoodle/course/view.php?id=234 Department for Education intranet - https://edi.sa.edu.au/educating/stem-education/programs/7-and-8-stem-inquiry

Thinking Maths

Name of provider/ organisation	South Australian Department for Education
State/Territory	SA
Aim	Improved student learning outcomes; Increased student engagement; Teacher development; Student participation in STEM
Description	Thinking Maths (SA), a professional learning program for Year 6-9 mathematics teachers, aims to deepen understanding of mathematical concepts (in the Australian Curriculum: Mathematics) and evidence based effective pedagogies. The program was extended to Years 10 and 11 in late 2018 and a Masterclass program for Year 6-9 graduates to support them to lead learning in the field.
Funder(s)	South Australian Department for Education (-2020)
Current Funding	$3.5 million
Years of Operation	2016 - 2020
Initiative type	Professional learning for teachers; Teaching and learning resources
Target Audience	Teachers
Target ages	Primary; Secondary
Equity Target Groups	Low SES
Target STEM Areas	Mathematics
Scale	To 2018: approx. 7700 students, 200 sites, 400 teachers
Evaluations	External evaluation
Evaluation Methodology	Surveys, Analysis of learning outcomes; Observation of Professional Learning
Evaluation findings	The largest statistical impact is on teachers' pedagogical content knowledge (Effect size: 0.70), as well as their professional identity and self-efficacy (ES: 0.61). Most teachers (92%) reported that Thinking Maths had an impact on their teaching practice that would last; their understanding of mathematics had improved (86%), their use of effective instructional strategies increased (91%) and it helped them to increase student engagement (87%). An impact equivalent to +2 months additional learning gain in Primary students' achievement.
Value for money	Evidence for Learning estimated the cost at $149 AUD per student per year. This estimate includes training and materials ($1070 per teacher or $43 per student), and the significant cost of five teacher release costs ($2650 per teacher or $106 per student). Rated as very low, according to the Evidence for Learning Cost Rating approach.
Decisions post-evaluations	2018-2020: Continuation of the Thinking Maths Program, development of a Thinking Maths – Secondary Years program to respond challenges of implementation In secondary contexts and development of Thinking Maths-Master class to support graduates of TM to support pedagogical shift in their sites and partnerships.
Website	https://edi.sa.edu.au/educating/stem-education/programs/thinking-maths http://evidenceforlearning.org.au/lif/our-projects/thinkingmaths/ http://evidenceforlearning.org.au/assets/Thinking-Maths/E4L-Thinking-Maths-Evaluation-Report.pdf http://www.beib.org.uk/2018/09/findings-evaluation-thinking-maths

STEM 500 Primary Educators

Name of provider/ organisation	South Australian Department for Education
State/Territory	SA
Aim	Teacher development; Improved student learning outcomes
Description	The STEM 500 Primary Educators project has developed a professional learning program to build expertise in designing and delivering STEM Learning for the R-7 years. Learning Improvement is offering this program to teachers in all South Australian government schools with primary enrolments. STEM 500 has been enhanced by integrating it with the Learning Design professional learning primary component of the Department for Education Learning Design, Assessment and Moderation Strategy (LDAM), enabling two teachers from each school to participate. The professional learning has been designed to: • develop and deepen teacher's pedagogical and content knowledge in the STEM subjects of science, technology or mathematics • build their capacity to design intentional and responsive learning for STEM • improve dispositions towards STEM teaching and learning.
Funder(s)	South Australian Department for Education
Current Funding	$2 million
Years of Operation	2017 - 2020
Initiative type	Professional learning for teachers; Teaching and learning resources
Target Audience	Teachers
Target ages	Primary
Equity Target Groups	N/A
Target STEM Areas	Science; Technology; Mathematics
Scale	A trial Professional Learning Program for 120 teachers from 3 portfolios commenced in 2017 comprising 15 professional learning days. Approximately 300 teachers from 21 partnerships, commenced Phase 1 of the program in 2018 and will complete Stage 2 Masterclasses over terms 1 and 2 of 2019. Phase 2 for approximately 450 teachers from across 31 partnerships will commence in June 2019.
Evaluations	Internal evaluation
Evaluation Methodology	Surveys; Other (Personal Action Plan); Other (Moodle analytics)
Evaluation findings	Teachers' understanding of the Australian Curriculum, effective pedagogies and Learning Design has improved dramatically. A consequence of this has been a reported positive impact on student learning and engagement. Surfacing and addressing content and pedagogical misconceptions held by teachers enables them to understand the importance of doing the same for their students. Implementation decisions made in schools and partnerships impact on the success of the program. The most successful Professional Learning Communities (PLCs) followed the model that was provided.

	The online platform was mostly used by participants to access resources rather than as an interactive space.
Value for money	To date, approximately $2 million has been provided since 2017 with the program involving 420 participants. As the program entails 15 professional learning days, a large proportion of funding is utilised through the payment of TRT.
Decisions post-evaluations	The program will run until 2020 with a final evaluation to be carried out at that time. Thus far, findings provide evidence of teachers' greater content knowledge as a result of the program with a significant percentage of participants reporting increased confidence and proficiency in teaching their focus discipline. These preliminary findings indicate that the program would be viable long-term in building expertise in STEM teaching and learning.
Website	Department for Education intranet - https://edi.sa.edu.au/educating/stem-education/programs/stem-500-primary-educators

STEM Scholarship Program

Name of provider/ organisation	South Australian Department for Education
State/Territory	SA
Aim	Improved student learning outcomes; Increased student engagement; Student participation in STEM; Student career aspirations
Description	A $1 million scholarship fund has been created to support up to 110 high school students from under-represented groups to pursue science, technology, and mathematics (STEM) subjects at SACE level. All scholarships recipients will receive $10,000 which can be used to cover the cost of tutors, laptops, excursions or anything that directly supports the student to achieve in their chosen STEM subjects. Scholarship recipients will participate in mentoring and career guidance programs to help them realise their potential in STEM professions and improve their professional and life skills.
Funder(s)	South Australian Department for Education
Current Funding	493000
Years of Operation	2017 – 2020
Initiative type	Mentoring for students; Other (Scholarship)
Target Audience	Students
Target ages	Secondary
Equity Target Groups	Low SES; Rural/remote; Girls and women; Indigenous
Target STEM Areas	STEM
Scale	In 2017, 42 scholarships (including 13 scholarships for Aboriginal students) were awarded to students studying SACE Stages 1 and 2 in 2018 and 2019. In 2018, 65 scholarships awarded to students studying SACE Stages 1 and 2 in 2019 and 2020 (Aboriginal students: 4 males and 11 females; Low SES: 35 females and 15 males).
Evaluations	Internal evaluation
Evaluation Methodology	Surveys with students; Surveys with parents/caregivers; Surveys with teachers; Student achievement data; Administrative data
Evaluation findings	Two STEM scholarship rounds have been conducted with 107 scholarships awarded to students from cohorts underrepresented in STEM; Aboriginal learners and girls and boys from low SES backgrounds. As round 2 scholarship recipients commenced Term 1 2019 no evaluation data for this cohort is available.
Value for money	STEM scholarships to the value of $10,000 are awarded to successful applicants, with the funds being provided to the recipient's school. Based on evaluation thus far, the relatively low cost for each recipient compared with the positive impact on the student's learning achievement and therefore future career aspirations, makes this project financially viable.
Decisions post-evaluations	Given the positive impact of the program to date, a further round of scholarships is currently being negotiated.
Website	https://edi.sa.edu.au/educating/stem-education/programs/scholarships

Big Ideas in Number – Middle Years

Name of provider/ organisation	Professional Learning Institute
State/Territory	Tas
Aim	Teacher development
Description	A two day spaced professional learning program which introduces teachers and leaders of numeracy in schools to a range of teaching strategies and pedagogical practices to support a deeper understanding of "Big Ideas in Number" by their students.
Funder(s)	Department of Education Tasmania
Current Funding	13700
Years of Operation	2018
Initiative type	Professional learning for teachers
Target Audience	Teachers; School leaders
Target ages	Primary; Secondary
Equity Target Groups	N/A
Target STEM Areas	Mathematics
Scale	67 teachers
Evaluations	Some evaluation of program
Evaluation Methodology	Surveys of teachers
Evaluation findings	Teachers feel more confident in teaching number in the middle years.
Value for money	The PL has given many middle years teachers the confidence and greater understanding to teach maths. For some of the staff, they are teaching out of area. Many secondary staff have not experienced how to assist students who are still learning the basic concepts. Overwhelmingly positive feedback aligns with value for money.
Decisions post-evaluations	Decisions made from particpipation in workshop and survey feedback.
Website	https://pli.education.tas.gov.au/program/big-ideas-number-years-5-8/

Explicit Teaching of Number in Prep for LIFT schools

Name of provider/ organisation	Professional Learning Institute
State/Territory	Tas
Aim	Teacher development
Description	Two full day spaced face to face workshops that focus on key teaching strategies and resources to support the Big Ideas in Number, the role of the teacher for planning for intentional teaching in number, and the use of diagnostic tools for identification of and planning for student needs. For teachers at LIFT (Learning in Families Together) schools. LIFT provides opportunities for families to be actively involved in their K-2 child's learning.
Funder(s)	Department of Education Tasmania
Current Funding	13700
Years of Operation	2017
Initiative type	Professional learning for teachers
Target Audience	Teachers; School leaders
Target ages	Primary
Equity Target Groups	N/A
Target STEM Areas	Mathematics
Scale	178 teachers
Evaluations	Some evaluation of program
Evaluation Methodology	Surveys of teachers
Evaluation findings	Teachers feel more confident in teaching number in the K-2 years.
Value for money	The course has been overwhelmingly supported by staff. Many early years teachers have not been confident with mathematical concepts. Many expressed an enthusisam for maths as a result of participating in the workshops and trialling strategies within their classroom. At a cost of $154 per staff member this is excellent value for money.
Decisions post-evaluations	Decision made after survey feedback completed and from teacher comments at workshops.
Website	https://pli.education.tas.gov.au/program/explicit-teaching-number-prep-lift-schools/

Middle Years Mathematics — Number and Algebraic Reasoning

Name of provider/ organisation	Professional Learning Institute
State/Territory	Tas
Aim	Teacher development
Description	A four-day program for numeracy/mathematics coordinators, coaches, specialist teachers and mathematics teachers to develop content knowledge and associated pedagogical skills in the teaching of algebraic reasoning from Years 5-9.
Funder(s)	Department of Education Tasmania
Current Funding	27000
Years of Operation	2018
Initiative type	Professional learning for teachers
Target Audience	Teachers; School leaders
Target ages	Primary; Secondary
Equity Target Groups	N/A
Target STEM Areas	Mathematics
Scale	37 teachers
Evaluations	Some evaluation of program
Evaluation Methodology	Surveys of teachers
Evaluation findings	Not yet finished so evaluation not completed.
Value for money	N/A
Decisions post-evaluations	N/A
Website	https://pli.education.tas.gov.au/program/building-numeracy-capacity/

Amplify STEM Schools

Name of provider/ organisation	Department of Education Tasmania
State/Territory	Tas
Aim	Teacher development; Student participation in STEM
Description	Amplify STEM schools have been selected by the Tasmanian Department of Education to lead the way in STEM professional learning and integrated curriculum planning for Tasmanian primary and secondary schools.
Funder(s)	Department of Education Tasmania
Current Funding	N/A
Years of Operation	2016 - 2017
Initiative type	Professional Learning for teachers; Teaching and Learning Resources
Target Audience	Teachers; School leaders; Students
Target ages	Primary; Secondary
Equity Target Groups	N/A
Target STEM Areas	STEM
Scale	24 Schools
Evaluations	Some evaluation of program
Evaluation Methodology	Surveys of teachers
Evaluation findings	67% of the Amplify STEM Schools now have a whole school STEM learning program.
Value for money	Most of the teachers involved in the program are now leading STEM learning in their schools. The teaching and learning resources that are hosted on a public facing website can be accessed by other schools and teachers not only in Tasmania but Australia-wide as well as globally. Data from the website use suggest that it is good value for money.
Decisions post-evaluations	N/A
Website	https://stem.education.tas.gov.au/

STEM Professional Learning — based on the STEM Framework

Name of provider/ organisation	Department of Education Tasmania
State/Territory	Tas
Aim	Teacher development
Description	Various STEM professional learning programs ranging from Intoduction to STEM, Leading STEM, Next Steps in STEM learning (for teachers that had engaged in the Intoduction to STEM and Leading STEM programs) and Implementing STEM. All four programs are based on the DoE STEM Framework.
Funder(s)	Department of Education Tasmania
Current Funding	N/A
Years of Operation	2016 - present
Initiative type	Professional Learning for teachers
Target Audience	Teachers; School Leaders
Target ages	Primary; Secondary
Equity Target Groups	N/A
Target STEM Areas	STEM
Scale	367 teachers
Evaluations	Some evaluation of program
Evaluation Methodology	Surveys of teachers
Evaluation findings	From the surveys, teachers reported that they now have an understanding of the STEM Framework use it to plan STEM learning for their students.
Value for money	Teachers that have participated have valued the courses. This has been evidenced by the fact that teachers in subsequent workshops would participate because the course would have been recommended by their colleagues.
Decisions post-evaluations	N/A
Website	https://pli.education.tas.gov.au/program/implementing-stem-primary/ https://pli.education.tas.gov.au/program/implementing-stem-secondary/

Teacher Development Initiative — Technologies Specialisation

Name of provider/ organisation	Department of Education Tasmania/University of Tasmania
State/Territory	Tas
Aim	Teacher development
Description	Technologies Specialisation to support the teaching of the 'Technologies and Engineering' components of STEM.
Funder(s)	Department of Education Tasmania
Current Funding	N/A
Years of Operation	2018
Initiative type	Professional Learning for teachers
Target Audience	Teachers
Target ages	Primary; Secondary
Equity Target Groups	N/A
Target STEM Areas	Technologies; Engineering
Scale	21 teachers
Evaluations	Not yet - program still underway
Evaluation Methodology	Surveys of teachers
Evaluation findings	Not yet finished so evaluation not completed.
Value for money	The program is on track to successfully upskill 21 teachers in with a Graduate Certificate in teaching the Australian Curriculum Technologies, through an integrated inquiry approaches such as STEM and project based learning. Teachers will return to schools with the opportunity to support colleagues with curriculum implementation and teaching practice. The course provided the opportunity to connect and collaborate with a range of stakeholders including UTAS, Greening Australia, MONA, Code Club and ACARA. The relationships developed will provide immeasurable value to the DoE.
Decisions post-evaluations	N/A
Website	https://pli.education.tas.gov.au/program/teacher-development-initiative-design-digital-technologies/

Primary Mathematics and Science Specialists

Name of provider/ organisation	Department of Education and Training Victoria
State/Territory	Vic
Aim	Teacher development; Improved student learning outcomes
Description	2 teachers from participating schools are trained in either mathematics or science over a two-year period. Professional learning is delivered by experts in mathematics, science and educational leadership, as well as by PMSS specialists from previous cohorts, to support the school-wide improvement of mathematics and science education in participating schools.
Funder(s)	Victorian Government
Current Funding	$60 million (2015-2021)
Years of Operation	2009 - present
Initiative type	Professional learning for teachers
Target Audience	Teachers
Target ages	Primary
Equity Target Groups	N/A
Target STEM Areas	Science; Mathematics
Scale	197 schools completed, 49 currently undertaking and approximately 100 commencing in 2019. State-wide primary schools.
Evaluations	Multiple external evaluations have been conducted throughout the lifetime of the program.
Evaluation Methodology	Surveys; interviews; Classroom observations; Student achievement data
Evaluation findings	Significant and above average growth in student achievement in maths and science.
Value for money	N/A
Decisions post-evaluations	New funding announcements by successive governments. Modifications to the implementation model and professional learning program in response to evaluation findings.
Website	https://www.education.vic.gov.au/about/programs/learningdev/vicstem/Pages/schools.aspx#link45

STEM Catalysts

Name of provider/ organisation	Department of Education and Training Victoria (Deakin University provided the qualification)
State/Territory	Vic
Aim	Teacher development; Improved student learning outcomes; Increased student engagement; Student participation in STEM
Description	(pilot initiative) 54 secondary teachers, from 29 schools, completed a Graduate Certificate in STEM Education. Catalysts came from very low SES schools. Catalysts were intended to come in pairs (one a curriculum leader, one an out-of-field teacher) – didn't always happen like this. Final evaluation due December 2018.
Funder(s)	Department of Education and Training Victoria
Current Funding	$1.5 million (2016-2018)
Years of Operation	2016 - 2018
Initiative type	Professional learning for teachers
Target Audience	Teachers
Target ages	Secondary
Equity Target Groups	Low SES
Target STEM Areas	STEM
Scale	54 secondary teachers, from 29 schools,
Evaluations	External evaluation due December 2018
Evaluation Methodology	Surveys; focus groups; adminstrative data
Evaluation findings	External evaluation due December 2018.
Value for money	TBC - External evaluation due December 2018.
Decisions post-evaluations	TBC - External evaluation due December 2018.
Website	N/A

Victorian Maths Challenge

Name of provider/ organisation	Department of Education and Training Victoria
State/Territory	Vic
Aim	Increased student engagement; Family and community partnerships
Description	The Challenge provides a range of high quality, online, captivating mathematical experiences that young people in kindergarten to Year 10 and their families can participate in together.
Funder(s)	Department of Education and Training Victoria
Current Funding	$4.21 million (2015-present)
Years of Operation	2016 - present
Initiative type	Other - resources and challenges for families and educators
Target Audience	Teachers; students; families
Target ages	Early childhood; primary; secondary
Equity Target Groups	N/A
Target STEM Areas	Mathematics
Scale	Statewide
Evaluations	External evlauation due April 2019
Evaluation Methodology	Interviews; surveys; web analytics
Evaluation findings	External evaluation due April 2019.
Value for money	External evaluation due April 2019.
Decisions post-evaluations	External evlauation due April 2019.
Website	http://vmc.global2.vic.edu.au/

Secondary School Software Suite

Name of provider/ organisation	Department of Education and Training Victoria
State/Territory	Vic
Aim	Improved student learning outcomes; increased student engagement; teacher development; student participation in STEM
Description	The Secondary School Software Suite provides broad-ranging, fun, interactive and up-to-date digital resources to drive student engagement, collaboration, communication and learning in secondary schools. The software supports teaching across the Victorian Curriculum F-10, VET, and VCE. As it is accessible on students' own devices, the software also helps reduce costs to schools and families. Wolfram and Stile software is provided as part of this suite to support STEM learning and teaching.
Funder(s)	Victorian Government - ERSC Budget Bid and DET
Current Funding	$9.3 million
Years of Operation	2016/2017 - 2017/2018
Initiative type	Teaching and learning resources; professional learning for teachers
Target Audience	School leaders; teachers; students; families
Target ages	Secondary
Equity Target Groups	Students with disability
Target STEM Areas	STEM
Scale	Depending on licencing agreements up to 340 secondary schools (including non-government)
Evaluations	External evaluation
Evaluation Methodology	Administrative data; Focus groups (teachers/school leaders); Interviews (teachers/school leaders); Web analytics
Evaluation findings	Final Evaluation Report due February 2019.
Value for money	Final Evaluation Report due February 2019.
Decisions post-evaluations	Final Evaluation Report due February 2019.
Website	https://www.education.vic.gov.au/school/teachers/teachingresources/digital/Pages/tools.aspx

STEM Learning Project

Name of provider/ organisation	The STEM Education Consortium comprises Scitech (lead) in collaboration with the Educational Computing Association of WA (ECAWA), the Mathematical Association of WA (MAWA) and the Science Teachers Association of WA (STAWA) Delivered on behalf of the WA Department of Education
State/Territory	WA
Aim	Teacher development; Student participation in STEM; increased student engagement
Description	The STEM Learning Project was established to deliver a range of innovative STEM teaching resources that align with the Western Australian Curriculum including the General Capabilities. The resources will support teachers to teach STEM in an integrated way from Kindergarten (Foundation) to Year 12 and have been developed with input from Western Australian school teachers. The project will include the delivery of: - 38 teaching and learning resources across Foundation to Year 12 -16 online professional learning modules aligned to the teaching and learning resources - Statewide face to face professional learning The resources will be available to all Western Australian schools through the Department of Education Connect portal. Professional Learning workshops have occurred since 2016.
Funder(s)	WA Department of Education
Current Funding	Approximately $3.5 million
Years of Operation	2016 - 2019
Initiative type	Professional learning for teachers; Teaching and learning resources
Target Audience	Teachers; School leaders
Target ages	Primary; Secondary
Equity Target Groups	N/A
Target STEM Areas	STEM
Scale	From June 2016 to June 2019 more than 2800 teachers and school leaders have participated in over 95 professional learning workshops.
Evaluations	External evaluation; Internal evaluation
Evaluation Methodology	Independent evaluation by Edith Cowan University Data collection started in January 2017 and was gathered during the trial and the role out phases of the project. The initial data is being used for formative purposes, guiding the revision of teaching and learning resources and professional learning workshops to enhance their quality, acceptability and effectiveness. Data gathered during the roll-out phase is being used for summative and illuminative purposes to assess the quality, acceptability and effectiveness of the resources and professional learning, barriers to uptake and to provide insights into potential directions for future work. The classroom videos are being collected to illustrate effective teaching and learning behaviours. The videos are also being used for the analysis of teacher pedagogy, student engagement and interactions to highlight opportunities provided for developing learning outcomes related to STEM capability. A particular focus during the video analysis process has been to identify video footage, which shows how higher order thinking and reasoning are being developed through the STEM Learning Project modules.

	The professional learning survey was completed by 282 school leaders and teachers, who attended the workshops. The purpose of this survey was to gather feedback on the workshops. An additional survey, on the classroom implementation of the modules, was designed to be completed by teachers as they finished implementing the curriculum modules. Only 11 of these surveys were completed. In order to gather more data the research team provided surveys to the teachers who were involved in the filming.
	A sample of the teachers were interviewed to gain feedback on the curriculum resources and how well the professional learning workshops prepared them for teaching with the STEM resources. Trial teachers were asked to annotate copies of the teaching and learning resources as feedback for revisions. A small number of classes were sampled from the four phases of learning for capture of classroom video of the implementation of selected curriculum modules.
Evaluation findings	Professional Learning
	The feedback on the professional learning workshops was very positive with 99% of the teachers and school leaders strongly indicating that they felt the professional learning workshops were informative and valuable and 89% of the participants indicating that the workshops were very successful in equipping them with strategies for teaching STEM.
	There was general support that the project activities also provided for student development of the general capabilities. The analysis of the qualitative data suggested that participants valued the professional learning on developing questioning skills; a crucial part of developing critical and creative thinking.
	The SLP Team altered several processes regarding the workshop types and the duration of the workshops in response to interim feedback. The implementation of shorter workshops should increase the numbers attending the workshops especially for secondary teachers.
	Towards the end of the interim evaluation period the ECU research and evaluation team was able to share video clips and photographs from three case studies with the SLP team. A selection of these clips and photographs have been successfully incorporated into PL workshops and module booklets.
	Modules and Resources
	The participants in the trial schools rated the modules and the resources as being highly effective. There were suggestions for smaller "starter modules" where schools did not have enough time to implement whole modules. From the feedback it appears that providing resources that are ready to use will contribute to the success of the project. The close alignment of the resources with the Western Australian Curriculum was important to the teachers.
	Phase of schooling
	The year level and stage of schooling impacted on the implementation and the uptake of the modules.
	In the primary classes there was a greater willingness among the teachers to implement the modules. Primary Teachers are familiar with working across curriculum areas. The primary teacher appeared to be able to focus on facilitating higher order thinking when using the modules.
	In Secondary classes there is more subject based teaching and there seemed was not a clear pathway as to which teachers would engage with the modules. Timetabling issues made it difficult for teachers to implement STEM activities that worked across learning areas.
	Ongoing support for teachers
	A number of teachers asked for more support during the implementation in schools. The teachers valued meeting and working with other teachers and suggested that this could continue in a community of practice model with support from the SLP team. Other teachers commented that they felt they did not have the skills required for the technology based tasks like coding and game design.
	The findings of the interim research undertaken by the ECU evaluation team support the conclusion that the resources, videos and professional learning were highly valued by the

	teachers. The SLP has made a good start to giving teachers the strategies and skills to plan and deliver integrated projects in STEM.
Value for money	To date more than 1900 teachers and school leaders have attended more than 80 professional learning events. At this stage the number of staff who have accessed the curriculum resources is unknown.
Decisions post-evaluations	Formal evaluation has informed the ongoing writing of modules and professional learning.
Website	https://www.education.wa.edu.au/resources-for-educators

Teacher Development Schools (TDS)

Name of provider/ organisation	Delivered on behalf of the WA Department of Education
State/Territory	WA
Aim	Teacher development; improved student learning outcomes; student participation in STEM; increased student engagement; industry and education partnerships
Description	Teacher Development Schools (TDS) deliver practical, school-based professional learning opportunities for teachers and school leaders to learn directly from the successful practices of others. This enables expertise to be applied and shared across schools.
Funder(s)	WA Department of Education
Current Funding	$3,456,000 for 2 years (or $1,728,000 per year)
Years of Operation	2018 – 2019 (calendar years)
Initiative type	Professional learning for teachers; Teaching and learning resources
Target Audience	Teachers; School leaders
Target ages	Primary; Secondary
Equity Target Groups	N/A
Target STEM Areas	STEM
Scale	For 2018, 26 TDS provided support for the teaching and learning of STEM and STEM-related subjects. TDS made available 165 STEM related professional learning events and responded to 297 STEM related requests for tailored support from schools, teachers and networks across the state.
Evaluations	Internal evaluation
Evaluation Methodology	Administrative data; surveys with participants; annual reports.
Evaluation findings	Feedback from teachers attending TDS professional learning shows the initiative continues to support teachers. The following observations from 2018 surveys are provided: • 78% of participants indicated the professional learning provided sufficiently or considerably improved their curriculum knowledge. • 68% of participants indicated they had changed practice in their classroom as a result of attending the professional learning. • 95% of participants indicated they were keen to attend further professional learning provided by a TDS.
Value for money	Each TDS receives an annual grant allocation of $44,000 to provide support to other schools. For 2018, in addition to supporting other schools, all TDS responded that being a TDS had improved the curriculum knowledge and practices of teachers in their school.
Decisions post-evaluations	Continuation of the project for 2020.
Website	N/A

DigiTech Schools

Name of provider/ organisation	Department of Education WA
State/Territory	WA
Aim	Improved student learning outcomes; Increased student engagement; Teacher development; Student participation in STEM
Description	For 2018 and 2019, seven DigiTech Schools have been established to support the implementation of the WA Curriculum: Digital Technologies. DigiTech Schools deliver practical, school-based professional learning opportunities for teachers and school leaders to learn directly from the successful practices of others. This enables expertise to be applied and shared across schools. Each DigiTech school received $44 000 and participated in an induction day on 12 and 13 February 2018. The DigiTech Schools are participating in the Teachers Can Code professional learning to build their own capacity to teach the more challenging aspects of the curriculum. DigiTech Schools also participate in the Innovation Partnership Schools program to develop innovative methods and practices in Digital Technologies.
Funder(s)	WA Department of Education
Current Funding	616000
Years of Operation	2018 - 2019
Initiative type	Professional learning for teachers
Target Audience	Teachers; School leaders
Target ages	Primary; Secondary
Equity Target Groups	N/A
Target STEM Areas	Technologies
Scale	As at 20 June 2019, Digitech Schools have offered a total of 146 Digital Technologies professional learning events.
Evaluations	Internal evaluation; Some evaluation data collected
Evaluation Methodology	Surveys with students, teachers and school leaders
Evaluation findings	A key finding in the success of the professional learning support is the use of expert practising teachers to deliver the professional learning. Participants indicated the professional learning provided sufficiently or considerably improved their curriculum knowledge and impacted their practice in their classroom.
Value for money	Over 2018-2019 each DigiTech receives a grant allocation of $88,000 to provide support to other schools.
Decisions post-evaluations	New initiative.
Website	N/A

Innovation Partnerships Program

Name of provider/ organisation	Innovation Unit Delivered on behalf of the WA Department of Education
State/Territory	WA
Aim	Improved student learning outcomes; Increased student engagement; Teacher development; Student participation in STEM; Industry and education partnerships
Description	The STEM Innovation Partnerships program was established as a partnership between the Department and the Innovation Unit. The program focuses on the collaborative development of practices that increase engagement, participation and achievement of all learners. These partnerships are action-oriented and require participants to be prepared to learn and work together in a collaborative endeavour, for the benefit of students in their school, other schools, and every public school in Western Australia. Since 2016, 131 schools have engaged with the STEM Innovation Partnership initiative.
Funder(s)	WA Department of Education
Current Funding	1570000
Years of Operation	2016 - 2019
Initiative type	Professional learning for teachers and school leaders
Target Audience	Teachers; School leaders
Target ages	Primary; Secondary
Equity Target Groups	N/A
Target STEM Areas	STEM
Scale	In 2016, 29 schools developed professional practices to increase student engagement. In 2017, 27 STEM Innovation Partnership schools engaged with 34 other schools on innovative STEM practices. At an expo in August 2017, innovative STEM practices were showcased to more than 470 school leaders and teachers. In 2018, 27 schools engaged in the Innovation Partnerships Schools program. In 2019, the program expanded from 27 schools to 68 schools. These schools will share and further develop their practices with schools and partners within their community.
Evaluations	Internal evaluation; Some evaluation data collected
Evaluation Methodology	Surveys with students, teachers and school leaders
Evaluation findings	In 2017, 82% of partnership schools reported increased confidence to implement STEM education, and 89% reported their teachers had changed teaching practices as a result of the initiative. 90% of schools have seen their practice change as a result of engaging in the TDS STEM Innovation Partnerships. Feedback from partner schools suggested the program improved confidence to implement STEM education and led to teachers changing their teaching and learning practices. In 2018, Innovation Partnership schools submitted an interim report detailing the variety of methods they used to assess the impact of the initiative. 86% of partnership schools reported a sufficient or considerable improvement in confidence to implement new teaching and learning strategies in their designated focus area.
Value for money	Partnership schools will have access to resources (up to $10,000 in the 2018 calendar year and $5,000 in 2019) to support their enquiry.

Decisions post-evaluations	Extension of the project to include a focus on the teaching and learning of Aboriginal students and secondary engagement and retention.
	An additional cohort of schools will be participating in the STEM Enterprise Schools initiative in 2019-20 utilising funding provided by the State Government through the Western Australian Department of Jobs, Tourism, Science and Innovation.
Website	https://www.innovationunit.org/projects/stem-innovation-partnerships/

Teachers Can Code (TCC)

Name of provider/ organisation	WA Department of Education in partnership with the Australian Computing Academy (ACA), University of Sydney
State/Territory	WA
Aim	Teacher development
Description	The Teachers Can Code (TCC) professional learning program is a Department of Education (Department) initiative to support the implementation of the Western Australian Curriculum: Digital Technologies. The program develops teachers' capacity to integrate Digital Technologies, including coding, into teaching and learning programs. ACA has been contracted to design, develop and deliver the TCC professional learning program.
	During 2018 and 2019, the ACA is training selected 110 TCC lead teachers to deliver eight primary and eight secondary TCC professional learning modules.
	TCC lead teachers are supporting other teachers to build their knowledge and expertise enabling quality implementation of the Western Australian Curriculum: Digital Technologies.
	Lead teachers' schools receive funds to support lead teacher participating and delivering TCC professional learning program. This funding covers ten teacher relief days for the lead teacher to attend the face-to-face workshops (six days); and plan and present a minimum of six modules of the TCC professional learning program in 2018 and 2019.
Funder(s)	WA Department of Education
Current Funding	10 days TR for 110 lead teachers and contingencies for regional teachers = $814,000
	Design, develop and deliver TCC professional learning program to lead teachers = $410,000
Years of Operation	2018 - 2019
Initiative type	Professional learning for teachers
Target Audience	Teachers; School leaders
Target ages	Primary; Secondary
Equity Target Groups	N/A
Target STEM Areas	Technologies
Scale	Lead teachers are delivering the TCC modules. As at 20 June 2019, 328 TCC events had been made available across Western Australia, with over 4140 attendees. TCC lead teachers are also offering additional Digital Technologies professional learning events to schools on request.
Evaluations	Some evaluation data collected
Evaluation Methodology	Surveys
Evaluation findings	As a result of the TCC workshops 94% of the lead teachers reported that their knowledge of the Digital Technologies curriculum improved. 98% reported their understanding of the design and structure of the curriculum improved, 100% reported their confidence to implement the DT curriculum improved. 95% reported their ability to integrate DT across learning areas improved. There is module content specific data being collated and the report will be available later this year.
	A key finding in the success of the professional learning provided by the Australian Computer Society support in the use of expert practising teachers to deliver the professional learning.

	94% of the participants reported that the program has expanded their ability to meet the learning needs of students.
	94% of participants reported that the program has had a positive change on their professional practice.
Value for money	During 2018 and 2019, lead teachers' schools receive ten days teacher relief funding to attend and present TCC workshops. Regional schools receive additional funding for contingencies.
	Funding also includes the contract with ACA.
	The feedback has been very positive.
Decisions post-evaluations	No decisions have been made about continuation yet as the project commenced in March and continues into 2019.
Website	N/A

Marine Industry School Pathways Program

Name of provider/ organisation	WA Department of Education.The Marine Industry School Pathways Program (SPP) is a National Partnership Agreement (between the WA Department of Education and the Department of Defence)
State/Territory	WA; SA; NSW
Aim	Improved student learning outcomes; Increased student engagement; Teacher development; Student participation in STEM; Student career aspirations; Family and community partnerships; Industry and education partnerships; provide the school community with raised awareness and positive career experiences in marine and defence industries
Description	Defence and Allied Industy work placements and traineeships; University Engineering summer schools, Robotics pathways, Integrated Cross-curricula STEM programs; Defence Industry incursions, Excursions and career expos, Professional development STEM capability of school staff, STEM initiatives which provide an increased focus on indigenous and female participation.
Funder(s)	Australian Government Department of Defence
Current Funding	5897853
Years of Operation	2010 - 2020
Initiative type	Professional learning for teachers; Teaching and learning resources; Mentoring for students; Sustainable links with industry, training and universities; cross-curricular project based initiatives
Target Audience	Teachers; Students; School leaders; Industry/community
Target ages	Primary; Secondary; Training and University
Equity Target Groups	Low SES; Girls/women; Indigenous
Target STEM Areas	STEM
Scale	30 Schools; 150 teachers, 6000 students
Evaluations	External evaluation; Internal evaluation; Evaluation data collected to meet KPIs.
Evaluation Methodology	Administrative data; Interviews with teachers and school leaders; Surveys with teachers and school school leaders; student participation and achievement data
Evaluation findings	Increase in the proportion of students participating in STEM courses and programs in SPP schools; increase in the proportion of students engaged in STEM pathways to Defence and Marine industry careers in SPP Schools.
Value for money	N/A
Decisions post-evaluations	N/A
Website	N/A

STEM Enterprise Schools initiative

Name of provider/ organisation	WA Department of Education
State/Territory	WA
Aim	Delivery of STEM professional learning and mentoring to teachers in public schools with a mid to low Index of Socio-Educational Advantage (ICSEA).
Description	As part of the State STEM Skills Strategy, the STEM Enterprise Schools initiative consists of: STEM Professional Learning During 2019, 60 STEM Enterprise Pioneer Schools are participating. In 2020, an additional 60 schools will commence. The program is supporting identified public schools with a low to mid ICSEA to implement whole-school approaches to STEM education and build capacity in STEM education practices. It will bring together the school community, including parents, local industry and employers. Clusters of schools will focus on building pathways from primary to secondary to post-school to support students to take up STEM-related careers. STEM Mentoring Program The STEM Mentoring program is supporting the primary and secondary schools participating in the STEM Enterprise Schools program, to implement whole-school approaches to STEM education and to build their capacity in STEM education practices. The program is promoting the sharing of STEM education classroom expertise and innovation practices. STEM Mentor Schools have implemented programs that foster students' curiosity towards STEM, share effective STEM pedagogy, exemplify innovative practice for student engagement in STEM and demonstrate successful leadership. Mentee schools receive a range of face-to-face and online mentoring opportunities to develop and implement a whole-school STEM education improvement plan.
Funder(s)	WA Department of Jobs, Tourism, Science and Innovation
Current Funding	$1.96 million
Years of Operation	2018 - 2022
Initiative type	Professional learning for staff; Mentoring for staff
Target Audience	Teachers; School leaders
Target ages	Primary; Secondary
Equity Target Groups	Low to mid ICSEA
Target STEM Areas	STEM
Scale	During 2019, available to 60 low to mid ICSEA WA public schools. During 2020, available to an additional 60 low to mid ICSEA WA public schools.
Evaluations	Some evaluation data collected
Evaluation Methodology	Surveys; annual reports. Procurement for a monitoring program is underway.
Evaluation findings	N/A
Value for money	The WA Department of Jobs, Tourism, Science and Innovation provided $1.96 million to implement the initiative. The Department of Education is providing additional funding to schools to participate in the program.
Decisions post-evaluations	N/A
Website	N/A

Primary Connections: Linking Science with Literacy

Name of provider/ organisation	Australian Academy of Science
State/Territory	National
Aim	Teacher development; Improved student learning outcomes; Increased student engagement; Student participation in STEM
Description	Primary Connections provides primary teachers with comprehensive curriculum and professional learning resources that link the teaching of science with the teaching of literacy. Focuses on developing primary students' knowledge, understanding and skills in both science and literacy, through an inquiry-based approach.
Funder(s)	Funded by the Australian Government since 2004-05. Stage 1 was funded by the Australian Academy of Science through its Australian Foundation for Science. Other supporters have included Eucalypt Australia and the Primary Industries Education Foundation of Australia.
Current Funding	$4.5 million (2014-2020) (Total Australian Government funding of $15.7 million since 2004)
Years of Operation	2003 - present
Initiative type	Professional learning for teachers; Teaching and learning resources
Target Audience	Teachers
Target ages	Primary
Equity Target Groups	N/A
Target STEM Areas	Science
Scale	National reach, over 20,000 users registered to use Primary Connections resources
Evaluations	Multiple internal and external evaluations have been conducted over the life of the program
Evaluation Methodology	Surveys, focus groups, adminstrative data
Evaluation findings	The University of Technology Sydney's independent evaluation found that Primary Connections had strong brand recognition, was widely implemented and was successful in building teacher capacity.
Value for money	$15.7 million in Australian Government funding has been provided since 2004-05. While this represents a considerable investment, the initiative is widely used by teachers across Australia.
	Over 2014 to 2018, Primary Connections received $3.5 million in Australian Government funding. During this period, 1304 teachers from 803 Australian schools and 2342 pre-service teachers from 32 Australian universities participated in Primary Connections professional learning workshops. Primary Connections resources are well regarded by teachers and are consistently some of the most popular resources on Scootle, the national digital resource database for teachers.
	A survey conducted by the Australian Science Teachers Association in 2014 found that Primary Connections materials were highly valued by primary teachers across all sectors, with 85% of the 810 primary teachers and principals surveyed indicating they had used the resources.
Decisions post-evaluations	Further Australian Government funding provided. Updated teaching and learning approach; increased interactivity of resources; online professional learning support for teachers.
Website	www.primaryconnections.org.au

reSolve: Mathematics by Inquiry

Name of provider/ organisation	Australian Academy of Science
State/Territory	National
Aim	Teacher development; Improved student learning outcomes; Increased student engagement; Student participation in STEM
Description	reSolve: Mathematics by Inquiry provides teaching and professional learning resources that support teaching mathematics through inquiry-based methods and help students learn mathematics in fun and innovative ways. reSolve: Mathematics by Inquiry resources target students from Foundation to Year 10 and are freely available to all Australian teachers.
Funder(s)	Australian Government
Current Funding	$1 million over 2018–19 to 2019–20. Previously received $7.4 million over 2014–2015 to 2017–18.
Years of Operation	2015 - present
Initiative type	Professional learning for teachers; Teaching and learning resources
Target Audience	Teachers
Target ages	Primary; Secondary
Equity Target Groups	N/A
Target STEM Areas	Mathematics
Scale	National reach, over 1200 schools trialling resources, over 300 teacher Champions are promoting the resoures and supporting their colleagues
Evaluations	External evaluation (underway)
Evaluation Methodology	Web analytics; surveys; classroom observations; interviews; focus groups
Evaluation findings	Interim report findings - resources are high quality, though current awareness and uptake are somewhat limited.
Value for money	$8.4 million in Australian Government funding has been provided since 2014-2015 (including small amounts for other work conducted under the wider Mathematics by Inquiry initiative). While this represents a considerable investment, the initiative is widely used by teachers across Australia. Over 1200 schools have signed up to trial the reSolve: Maths by Inquiry resources that are available on the website. Other schools are using the resources without providing feedback, and the number is increasing as shown by web analytics. Over 280 teacher Champions across Australia have participated in professional learning to learn how to support other teachers to use the project's resources.
Decisions post-evaluations	Interim report is informing the future work of the project, including contract variation to be drawn up by December 2018. Final report could inform future policy decisions around the project or similar projects.
Website	www.resolve.edu.au

Coding across the Curriculum initiative
(Digital Technologies Hub and Code Club)

Name of provider/ organisation	Education Services Australia and Code Club Australia
State/Territory	National
Aim	Improved student learning outcomes; Increased student engagement; Teacher development; Student career aspirations
Description	Provides a scope and sequence, lesson ideas and assessment matarials to support teaching DT. Resources are in a searchable repository. Resources are provided to support inclusive teaching practices. Materials are included for students and families. Materials are a mix of providing access to resources that already exist and those that are purpose developed for the Hub. An active professional learning network is fostered through newsletters, social media, conference presentations and webinars.
Funder(s)	Australian Government
Current Funding	$2,941,300 (2015 - 2020) This includes $577,402 for agriculture and Mathematics inquiry resources in 2015)
Years of Operation	Design began 2015. Launch 2016.
Initiative type	Professional learning for teachers; Teaching and learning resources; Other
Target Audience	Teachers; Students; Families; School leaders
Target ages	Primary; Secondary
Equity Target Groups	N/A
Target STEM Areas	Technologies
Scale	214,047 unique users since launch.
Evaluations	External evaluation
Evaluation Methodology	Web analytics; Surveys; interviews/consultations; focus groups
Evaluation findings	Report not yet publically available but has been provided to University of Adelaide, ESA and Code Club. The report indicates that the resource is useful especially for teachers new to DT and the resources are of high quality. Scope and sequence teacher resource especially well received.
Value for money	$11.00 per user currently but this funding continues until the end of 2020, so this figure may change.
Decisions post-evaluations	In progress. ESA are condsidering the suggestions for improvement and report to the department on their progress.
Website	www.digitaltechnologieshub.edu.au www.dthub.edu.au

Summer Schools for STEM (Curious Minds)

Name of provider/ organisation	Australian Mathematics Trust and Australian Science Innovations
State/Territory	National
Aim	Improved student learning outcomes; Increased student engagement; Student participation in STEM; Student career aspirations
Description	A hands-on extension and mentoring program to ignite girls' passion in STEM. Around 60 girls who have demonstrated potential partipate in a six month program, including a summer school, follow-up activities and winter school, each year.
Funder(s)	Australian Government
Current Funding	$1.49 million (GST excl.) (2015-2020)
Years of Operation	2015 - present
Initiative type	Residential camp for students; Mentoring for students
Target Audience	Students
Target ages	Secondary
Equity Target Groups	Girls/women; Low SES; Rural/remote; Indigenous
Target STEM Areas	STEM
Scale	Approximately 50-60 students per year.
Evaluations	Program is self-evaluated annually. No departmental or external evaluation has been conducted.
Evaluation Methodology	Surveys; Student achievement data
Evaluation findings	Increased participant interest in STEM; increased participant confidence in their STEM abilities; increased likelihood of students continuing to study STEM subjects; improvement in participants' STEM skills; most participants would recommend the program.
Value for money	Cost per student is approximately $6000. This covers an intensive program that includes two residential workshops and a six month mentoring program.
	In addition, approximately 40 mentors per year are engaged and trained, giving them skills to engage with and mentor other students in the future.
	Program has strong results. Objectives include building participants' skills, encouraging confidence in their own abilities, inspiring them to continue their STEM studies and to increase the number selected to participate in the Australian science, informatics and mathematics Olympiad teams. 90% of participants say that they gained new skills, 80% report increased confidence, 70% report that the program helped them decide that their future study will be in STEM, and 37% sat the Australian Science Olympiad exams - 8 made it to the Olympiad summer school and 3 were selected in Australia's International Science Olympiad teams.
	100% of participants studied a STEM subject in year 11 and 12, and 80% intend to pursue a career in STEM.
Decisions post-evaluations	Program has changed to better meet its objectives, including:
	- Adding more "supercharge sessions", which allow students to delve deeply into subjects. The additional subjects mean that students are exposed to all disciplines, broadening their experience.
	- Enhancing the mentoring system into a coaching model, working on more specific goals.

	- Adding a workshop to develop skills in science communication.
Website	https://www.asi.edu.au/programs/curious-minds/

ICT Summer Schools (digIT)

Name of provider/ organisation	Australian Mathematics Trust
State/Territory	National
Aim	Improved student learning outcomes; Increased student engagement; Student participation in STEM; Student career aspirations
Description	A series of summer schools that target Year 9 and 10 students from groups that are under-represented in STEM and engage them in digital technologies and related careers. digIT gives students the chance to attend a digital technology-based summer school, accompanied by five months of mentoring and a follow-up residential school.
Funder(s)	Australian Government
Current Funding	$1 million (ex. GST) (2016-2020)
Years of Operation	2016 - present
Initiative type	Residential camp for students; Mentoring for students
Target Audience	Students
Target ages	Secondary
Equity Target Groups	Girls/women; Low SES; Rural/remote; Indigenous; Students with disability
Target STEM Areas	Technologies
Scale	Approximately 60 students per year.
Evaluations	Program is self-evaluated annually. No departmental or external evaluation has yet been conducted. Will be externally evaluated at the conclusion of the program.
Evaluation Methodology	Surveys; Student achievement data
Evaluation findings	Increased participant interest and enjoyment of ICT subject matter; increased participant confidence in their ICT abilities; increased likelihood of students continuing to study ICT; most participants would recommend the program.
Value for money	Cost per student is approximately $4600. This covers an intensive program that includes two residential workshops and a six month mentoring program. Around 30-40 mentors per year are trained, giving them skills to engage with and mentor other students in the future.
	Program has strong results. Objectives include inspiring participants to increase their participation in digital technologies STEM studies in school, post secondary school nd workforce opportunities.
	62.5% of participants said they were likely to study IT in years 11 and 12, an increase of 16% prior to participating in the program. 56% said they were likely to study IT in university, an increase of 22% prior to participating. 81% of participants said their enjoyment of IT as a subject increased.
	100% of participants would recommend the program to other students.
Decisions post-evaluations	Program has changed to better meet its objectives, including: - Refining the selection process to improve the gender ratio and increase the number of Aboriginal and Torres Strait Islander students - Refining the mentoring program to better utilise participants' time at the camp and improve communication.
Website	https://www.amt.edu.au/information/for-students/digit/

STEM Professionals in Schools

Name of provider/ organisation	CSIRO
State/Territory	National
Aim	Improved student learning outcomes; Increased student engagement; Teacher development; Student participation in STEM; Student career aspirations; Industry and education partnerships
Description	STEM Professionals in Schools partners teachers with STEM professionals to enhance STEM teaching practices and deliver engaging STEM education in Australian schools. Flexible partnerships enable students and teachers in both primary and secondary schools to: • support delivery of the Australian Curriculum • understand how STEM skills and knowledge are applied in the real world • introduce them to emerging STEM innovations and potential career paths • provide them with student mentoring opportunities • connect with industry to understand workplace expectations and aspirations.
Funder(s)	Australian Government
Current Funding	$10 million (GST excl.) (2016-2020) (previously received $6.5 million in 2012-2015)
Years of Operation	2012 - present
Initiative type	Professional learning for teachers; Student participation in STEM
Target Audience	Teachers; Students; STEM Professionals; Business/Industry
Target ages	Primary; Secondary
Equity Target Groups	Girls/women; Low SES; Rural/remote; Indigenous
Target STEM Areas	STEM
Scale	Approximately 1700 partnerships across Australia, involving around 300 industry groups and benifitting over 60,000 students.
Evaluations	External evaluation
Evaluation Methodology	N/A
Evaluation findings	Since 2007 this program has had three independent evaluations. The most recent evaluation in 2015 found that the program is highly effective in terms of its scale of operation and there are significant benefits for students, teachers and STEM professionals.
Value for money	The 2015 evaluation found that the program leverages considerable volunteer STEM profesional resources. Each partnership represents an estimated annual commitment of $1250 from the department of Education and CSIRO. This funding input leverages however the equivalent of almost three times this amount through the committment of STEM professionals
Decisions post-evaluations	Based on the 2015 evaluation learnings the funding agreement (2016/17 - 2019/20) stipulated the program must commence to an enriched model to increase particpation and success for particpants.
Website	www.csiro.au/STEM-Professionals-in-Schools

Digital Technologies Massive Open Online Courses

Name of provider/ organisation	University of Adelaide
State/Territory	National
Aim	Teacher development; improved student learning outcomes in digital technologies learning area
Description	The University of Adelaide's Digital Technologies Massive Open Online Courses (MOOCs) provide free professional development for teachers on the Australian Curriculum: Digital Technologies, and free access to the latest digital technologies equipment through a National Lending Library.
Funder(s)	Australian Government
Current Funding	$6.9 million (GST excl.) (2016-17 to 2019-20)
Years of Operation	2016 - present
Initiative type	Professional learning for teachers; Teaching and learning resources
Target Audience	Teachers; Students
Target ages	Primary; Secondary
Equity Target Groups	N/A
Target STEM Areas	Technologies
Scale	Over 23,000 teachers enrolled in Digital Technologies CSER MOOCs Approximately 605,618 students are taking part in classroom activities as a result of teacher engagement with the DT MOOCs As of 2/10/2018 23,293 teachers have participated in CSER MOOCs Professional Development Program
Evaluations	Internal evaluation
Evaluation Methodology	N/A
Evaluation findings	Internal evaluation in progress – will inform overarching NISA evaluation to be conducted by the Department.
Value for money	N/A
Decisions post-evaluations	N/A
Website	https://csermoocs.adelaide.edu.au/

Digital Technologies in Focus

Name of provider/ organisation	ACARA
State/Territory	National
Aim	Teacher development; Improved student learning outcomes in digital technologies learning area
Description	Digital Technologies in Focus, delivered by the Australian Curriculum, Assessment and Reporting Authority (ACARA), provides support for around 160 disadvantaged schools to assist them in implementing the Australian Curriculum: Digital Technologies, including access to specialist digital technologies and ICT Curriculum Officers. Formerly known as 'Supporting implementation of Digital Technologies (Peripatetic Initiative)'.
Funder(s)	Australian Government
Current Funding	$7.88 million (GST excl.) (2016-17 to 2019-20)
Years of Operation	2016 - present
Initiative type	Professional learning for teachers; Teaching and learning resources
Target Audience	Teachers; Students
Target ages	Primary; Secondary
Equity Target Groups	Low SES; Rural/remote; Indigenous
Target STEM Areas	Technologies
Scale	There are currently around 160 schools participating, over 2,300 teachers and 30,000 students.
Evaluations	External evaluation
Evaluation Methodology	N/A
Evaluation findings	Independent evaluation in progress. Being undertaken by Deakin University.
Value for money	N/A
Decisions post-evaluations	N/A
Website	N/A

Digital Literacy School Grants

Name of provider/ organisation	Australian Government Department of Education and Training
State/Territory	National
Aim	Teacher development; Improved student learning outcomes in digital technologies learning area; Family and community partnerships; Industry and education partnerships
Description	The Digital Literacy School Grants initiative is providing funding to 114 projects that support innovative ways of implementing the Australian Curriculum: Digital Technologies in schools. As part of the initiative, two competitive grant rounds were conducted, one in 2016–17 and one in 2017–18. 54 applicants received grants in Round 1 and 60 received grants in Round 2. All government and non-government primary and secondary schools and eligible educational institutions were eligible to apply.
Funder(s)	Australian Government
Current Funding	$4 million (GST excl.) (2016-17 to 2017-18)
Years of Operation	2016 - present (while funding ended in June 2018, there will be projects being delivered until 31 July 2019)
Initiative type	Professional learning for teachers; Teaching and learning resources
Target Audience	Teachers; Students
Target ages	Primary; Secondary
Equity Target Groups	Low SES; Rural/remote; Indigenous; Girls/women; Students with disabilities
Target STEM Areas	Technologies
Scale	114 projects across Australia, mostly being implemented in individual schools or networks of schools
Evaluations	Some evaluation data collected
Evaluation Methodology	Certificate of Completion reports
Evaluation findings	All grant recipients are required to provide final reports on project delivery and outcomes achieved – these will inform overarching NISA evaluation to be conducted by the Department.
Value for money	N/A
Decisions post-evaluations	N/A
Website	www.education.gov.au/support-science-technology-engineering-and-mathematics

Australian Digital Technologies Challenges & Dive Into Code

Name of provider/ organisation	The University of Sydney - Australian Computing Academy
State/Territory	National
Aim	Improved student learning outcomes; Increased student engagement; Teacher development; Student participation in STEM; Student developing skills in coding
Description	Australian Digital Technologies Challenges are: - a series of free online teaching and learning activities (typically to run over 4-5 weeks as classroom activity) for students in Years 3 to 8; - aligned to Australian Curriculum: Digital Technologies - includes professional learning workshops for primary and secondary teachers across Australia Dive into Code (previously known as Cracking the Code) offers a suite of shorter fun and engaging coding activities and challenges for students in Years 4 to 12.
Funder(s)	Australian Government
Current Funding	$9.1 million (GST excl.) over 2016-17 to 2019-20
Years of Operation	2016 - present
Initiative type	Teaching and learning resources; Professional learning for teachers
Target Audience	Teachers; Students
Target ages	Primary; Secondary
Equity Target Groups	N/A
Target STEM Areas	Technologies; Mathematics
Scale	13 DT Challenges (years 5-8) and 6 Dive into Code mini DT Challenges have been released to date; The DT Challenges and Dive into Code mini DT Challenges will aim to reach 325,000 students across Australia over the life of the program: 3814 schools with 58,961 students have been enrolled in one or more challenges to date; 55 of the 72 2-day PL workshops have been delivered with 1660 teachers attending.
Evaluations	Internal evaluation
Evaluation Methodology	Administrative data; Student achievement data and web analytics will be used
Evaluation findings	University of Sydney to use their own funding to undertake an evaluation.
Value for money	$9.1 million of AG funding will aim to reach over 325,000 students. This will cost $280 per student, which will include PL for teachers. The Challenges will continue to be available beyond the funding in an offline version.
Decisions post-evaluations	N/A
Website	https://aca.edu.au/resources/

Principals as STEM Leaders

Name of provider/ organisation	University of Tasmania
State/Territory	National
Aim	Improved student learning outcomes; Increased Principal and Leaders' engagement; Teacher development; Student participation in STEM; Increasing STEM focus in schools
Description	The Principals as STEM Leaders research project will develop and pilot new approaches to support principals to provide high quality STEM leadership in schools. Principals as STEM Leaders will involve around 200 primary and secondary schools in the government and non-government sectors, covering rural, regional, remote and metropolitan areas.
Funder(s)	Australian Government
Current Funding	$2.6 million GST excl. over 2017-18 to 2019-20
Years of Operation	2018 - present
Initiative type	Professional learning for principals, teachers and STEM leaders
Target Audience	Principals; School leaders; Teachers
Target ages	Primary; Secondary
Equity Target Groups	N/A
Target STEM Areas	STEM
Scale	Over 200 Principals extending to clusters of schools over the life of the project
Evaluations	Internal evaluation
Evaluation Methodology	Survey data will be used for evaluation
Evaluation findings	N/A
Value for money	N/A
Decisions post-evaluations	N/A
Website	http://www.utas.edu.au/__data/assets/pdf_file/0016/1110553/180620_PASL-Flyer_EOI.pdf

Science by Doing

Name of provider/ organisation	Australian Academy of Science
State/Territory	National
Aim	Teacher development; Improved student learning outcomes; Increased student engagement; Student participation in STEM
Description	Science by Doing provides comprehensive online science resources that are freely available to Australian teachers and students in Years 7 to 10. Science by Doing includes curriculum units and professional learning modules and offers a practical way of implementing the Australian Curriculum: Science.
Funder(s)	Funded by the Australian Government since 2007. Stage 2 (2012-2013) was funded by Education Services Australia.
Current Funding	$6.0 million (2013-2020) (Total Australian Government funding of $9.5 million since 2007)
Years of Operation	2007 - present (Pilot commenced in 2007, Stage 1 commenced in 2009)
Initiative type	Professional learning for teachers; Teaching and learning resources
Target Audience	Teachers; Students
Target ages	Secondary
Equity Target Groups	N/A
Target STEM Areas	Science
Scale	National reach, over 120,000 people registered to use Science by Doing resources. This is around 57% of all Australian high school teachers, with registrations from 80% of all high schools.
Evaluations	External evaluation
Evaluation Methodology	Surveys, focus groups, web analytics, administrative data
Evaluation findings	The most recent independent evaluation was completed by the University of Technology Sydney in 2018. It found that Science by Doing resources have a positive impact on student learning science and teachers consider Science by Doing as an excellent teaching resource.
Value for money	$9.5 million in Australian Government funding has been provided since 2007. While this represents a considerable investment, the initiative is widely used by teachers across Australia. Over 120,000 people are registered to use Science by Doing resources. This is around 57% of all Australian high school teachers, with registrations from 80% of all high schools. In 2017, there were over 33,000 active users of the Science by Doing website.
Decisions post-evaluations	Further Australian Government funding provided. Future directions include updating the Science by Doing website and resources and piloting an online platform for formative assessment.
Website	www.sciencebydoing.edu.au