



POLICY POSITION PAPER: BUILDING TEACHER CAPACITY

Background

The quality of science educators in primary and secondary schools is central to improving student engagement and outcomes in science. Science educators face many challenges in accessing support and resources to build their capacity, including a lack of funding to facilitate release time for teachers to build collaborative professional learning communities (PLC) as well as limited availability and access to effective professional learning.

The Australian Science Teachers Association (ASTA) recognises the importance of building science educator capacity to develop and enhance the delivery of quality science instruction centred on student engagement and achievement.

In the production of this policy position paper ASTA undertook extensive stakeholder consultation through a survey open to all teachers, and one on one consultations. Our consultations consisted of conversations with teachers, government, business, and academia. For example, we had conversations with Australia's Chief Scientist, Australia's Women in STEM Ambassador, BHP, Clarivate Analytics, The Australian Academy of Science who have collectively helped shape this policy position.

Issues Teachers Face

Science educators participating in the 2021 ASTA National Survey have identified that:

- up to 40% of teachers may be teaching out of their subject area.
- 15% of teachers are currently not confident teaching science concepts.
- more content hesitancy exists around the physical sciences (Physics and Chemistry)
- there is a lack of sufficient time allocated to science teaching and for lesson preparation.
- there is a lack of support for professional development to be undertaken during the school week or school day.
- there is a lack of dedicated science specialists or laboratory technicians in their school or area for support.
- large class sizes create safety issues for practical work and challenges for providing a differentiated curriculum.
- the lack of science laboratory technicians in all primary and in some secondary schools contributes to increased safety risks to students during practical sessions.

ASTA's Commitment

ASTA will work with relevant stakeholders to ensure that science educators:

- have access to quality professional development opportunities in contemporary curriculum delivery such as through hybrid, online and flipped classroom teaching models, across all systems and all stages of education to build content, pedagogical and student career pathway knowledge and increase their capacity to deliver high quality programs aligned with the Australian Science Curriculum.
- are recognised for their excellent practice and encouraged to share their practice with colleagues and across PLCs and networks to increase the number of proficient science educators in all systems.
- are supported with science-specific induction programs, provision of time and funding for classroom release enabling professional development and given access to mentoring programs for primary and secondary teachers, as well as those teaching out-of-field.
- are supported to identify their professional learning needs based on feedback from mentors and peers.

ASTA's Expectations

ASTA seeks and expects:

- funded science educator professional development programs based on career stages to increase science discipline content knowledge and laboratory management, building capacity to fully differentiate learning opportunities for all students and prepare them for possible contemporary or emerging science career pathways.
- adequate release time from class for professional development activities.
- development of science subject area expertise across all schools and ensuring that there are more science experts to provide mentoring and leadership of discipline content knowledge and pedagogical content knowledge at each education facility.
- increased numbers of science educators employed across all primary and secondary schools such that hands-on practical teaching and learning can be safely conducted as part of curriculum delivery.
- funding support for science learning area leaders in secondary schools to help build teacher content and pedagogical knowledge and proficiency in each school and across school or network PLCs.
- science educators are provided with access to partnership and the latest research to ensure the provision of relevant and contemporary curriculum content and delivery in science education, and enhancement of teacher professional development.
- funded science specific induction programs for science beginning teachers, especially for out-of-field teachers and non-science teachers in the primary sector.
- support for remote and rural schools with targeted funding to develop context-relevant science programs that improve student engagement and outcomes in science.
- recognition of the need for adequate provision of funding, time for lesson planning and development of professional materials, mentoring and ongoing support for delivery of the current Australian Science Curriculum and any future iterations.

ASTA's Agenda

- Increased, targeted, and funded professional development opportunities
- Equitable access for science educators to professional development opportunities and resources
- Increased science educator numbers
- Stronger partnerships between teachers and the community, education, and scientific ecosystem.

Recommendations

- The Federal Government and other relevant stakeholders work with ASTA to develop comprehensive solutions that meet the expectation of science teachers and laboratory technicians.

