



*Document is subject to change. Updated 18 October 2023.*

## SESSION 1

**11:00 AM - 12:00 PM, Thursday 30 November 2023**

### Session 1.01

#### **Bridging the Gap Panel: Adapting University Technology Education to Western Australian Industry Needs**

Carol Puddicombe, Design & Technology Secondary Education Co-ordinator, Edith Cowan University

Tim Keely, STEM Outreach Coordinator, Curtin University

Shaun Lane, Technology Educator, Hale School

Troy Santen, Managing Director, Zeff Energy

In the dynamic landscape of Western Australian industries, it is crucial for universities to equip engineering and technology students with the skills and knowledge that align with industry demands. This panel discussion aims to delve into the changes required in university curricula to ensure graduates are well-prepared for the evolving job market. We will also address the significance of Design and Technology education, the need for training teachers, and the shifts in teaching pedagogy necessary for effective industry-focused education.

### Session 1.05 (double session – continues through Session 2)

#### **OnGuard Safety – what is all the fuss about anyway?**

Bruce Lewis, OnGuard Safety Training

This presentation will be run as a hands-on workshop. It is intended for participants who have had little to no exposure to OnGuard Safety and are interested in learning more. The workshop will include exercises that will demonstrate:

viewing an online SOP

completing an online knowledge test

opening a tutorial worksheet

viewing a wall SOP poster

viewing a risk assessment

searching safety zone diagrams

editing student use authorisations

registering machine safety demonstrations

registering student machine proficiency

### Session 1.06

#### **PRIMARY STREAM: Empowering the Future: Exploring Design Technologies in Primary Education**

Gabrielle Trinca, Catholic Education Western Australia

In this presentation, we will delve into the fascinating world of Design Technologies, focusing on how it can be integrated seamlessly into primary education. Our journey will begin by unpacking the intricacies of the curriculum and where it fits into each year group, ensuring a cohesive flow of knowledge from one stage to



the next. We will explore the progressive nature of design technologies education and how it prepares young learners for the challenges of the future. We will demystify some of the language used in the SCSA Design Technologies Curriculum, offering practical examples of what this looks like in action within the classroom. One of the key highlights of this session is the emphasis on community involvement in the learning process. Discover how engaging community members can enhance the educational experience, providing students with valuable insights and practical skills. We will discuss how this collaborative approach can open up new avenues for experiential learning. Throughout this session, we will introduce real-world learning opportunities, showcasing how design technologies can be a gateway to practical problem solving. Participants will gain a deeper understanding of how students can apply their knowledge to tackle authentic challenges, preparing them for their future education and the real world. This session promises to be a valuable resource for primary educators, providing inspiration and insights into empowering the future through design technologies in primary education.



## SESSION 2

12:05 PM - 1:05 PM, Thursday 30 November 2023

### Session 2.01

**Using Shaper3D for Design and Technology using iPads in years 6 – 8**

Angelica Franco Alvarez, Scotch College

**Please note participants are to bring laptops.** SHAPR3D software required and will need to be downloaded in advance for [free for educators](#) to sign up with their teacher's email address.

Using Shapr3D for Design and Technology using iPads in years 6 - 8. Working Drawings Laser cut Plasma cut.

### Session 2.02

**Design: Education to Industry**

Erica Mason, Murdoch University

Design thinking is a creative approach used to rethink, reframe and redesign products and services. It is a radically different way to think about something. It is thinking outside the box but it uses creative methods to force us outside our comfort zone. This brain push can assist in generating innovative outcomes and develop ideas that never would have arrived using traditional business methods and processes. Design thinking is also human centered. Its ideology is all about designing for people because designing the right products and services for people will ensure they are not only used but their usage will be sustained over time. This presentation will explain these concepts in detail, specifically why such design should be implemented in high school curriculum and how this might be achieved.

### Session 2.03

**Building a strong foundation: Bridging the gap between primary industries and education with PRIMED resources**

Samn Gibbs-Jones, Rossmoyne State High School

In this workshop, we will explore how PRIMED resources can help bridge the gap between education in our learning environments and our local primary industries for our students in Years 7 – 10. As Design and Technology teachers, we aim to provide our students with the skills and knowledge they need to succeed in the workplace. However, with technology and industry evolving at an ever-increasing pace, it can be challenging to keep up. That is where PRIMED comes in. PRIMED resources, developed in collaboration with the Department of Education, the Department of Training and Workforce Development, and the Department of Primary Industries and Regional Development, are designed to provide teachers with relevant information on the latest technologies and their practical applications in various industries. These resources are highly interactive and engaging, offering a range of activities that are relevant to real-world situations. In this hands-on workshop, you will be introduced to some of the PRIMED resources and learn how to use them effectively in your classroom. You will discover how these resources can help your students gain practical skills and experience, making them more attractive to potential employers. Moreover, you will learn how to use PRIMED resources to facilitate collaboration between education and



industry, ensuring that the skills and knowledge taught in the classroom are directly relevant to the needs of the industry. By the end of the workshop, you will have gained practical experience with PRIMED resources and a better understanding of how to use them in your teaching. You will also have learned how to foster collaboration between education and industry, helping your students bridge the gap between design education and industry.

#### Session 2.04

##### **Enhancing Design and Technology Education through Prototyping in the age of AI**

Marco Tolomei, Edith Cowan University

This is a session that delves into the significance of prototyping in shaping skills essential for our tech-driven future. The session presents real-life examples from our Design and Technology students and features insights from our fourth-year students about their prototyping journey. The session offers a unique perspective by seamlessly blending educational methodologies with real-world student experiences, providing a comprehensive view of preparing students for an AI-integrated future. Join us to explore the intersection between education, technology, and industry.

#### Session 2.06

##### **PRIMARY STREAM: Ignite student creativity through technology integration**

Therese Howarth, Wesley College

**Please note participants are to bring laptops. Software needed: Scratch MIT account, Grok Academy registration, Canva account.**

This workshop is for all teachers and will be centred on giving practical experience that can be implemented directly into the classroom, revolutionising teaching to engage students in all aspects of STEM (Science, Technology, Engineering and Mathematics). With the rapid development of technologies and the increasing opportunities students have to create with technology, this workshop will focus on integrating three digital platforms. It will combine the Grok Academy coding platform with a Scratch coding experience and by operating a Makey Makey Invention kit, participants will create an engaging user interface, resulting in a dynamic interactive project. STEM in education fosters critical thinking, problem-solving, collaboration and creativity. By integrating it into curriculum subjects, we can inspire students to explore and discover these essential fields, empowering students to become confident active learners. Workshop Highlights: 1. Explore the Grok Academy coding platform, designed to engage students of all ages with guided coding activities and projects. Participants will discover the platform's user-friendly environment and learn how to integrate coding into curriculum programs effectively. The workshop will provide hands-on experience and valuable resources for teachers. 2. Using Scratch, a visual programming language that offers an excellent entry point for developing computational thinking skills, participants will apply what they have learnt through the Grok Academy platform to create an interactive user experience that can be integrated across curriculum subjects. 3. Working in small groups, participants will use the Makey Makey Invention kit to bring their new learning to life as they transform everyday items into a touchpad that enables an interactive user experience. This workshop will provide educators with the knowledge and experience to confidently bring STEM into the classroom. The Grok Academy, Scratch coding and Makey Makey invention kit will help create dynamic and engaging learning experiences for all students.



## SESSION 3

1:55 PM - 2:55 PM, Thursday 30 November 2023

### Session 3.01

#### **Introduction to the upcoming Fab Futures professional development programme for teachers in WA**

Wendy Neale, The Fab Foundation

The Fab Foundation recently received funding from The Caterpillar Foundation to initiate a STEAM educational impact programme in WA, specifically for teachers. This programme (Fab Futures) will support teachers to utilise advanced manufacturing tools, electronics, and programming to catalyse STEAM learning in high school classrooms. It will consist of in-person activities and engaging in an online community of practice. Caterpillar has a presence in Perth that supports regional autonomous and general mining across Western Australia; its associated philanthropic foundation is exploring opportunities to invest in social impact in this community. The Fab Foundation is a U.S. non-profit 501(c)(3) organisation that emerged from the Massachusetts Institute of Technology (MIT) Center for Bits & Atoms (CBA). The Fab Foundation's mission is to provide access to the tools, knowledge, and financial means to educate, innovate and invent using technology and digital fabrication to allow anyone to make (almost) anything, thereby creating new pathways to economic opportunity. We are a steward of the global fab lab network, a community of more than 2500 technical learning and innovation spaces (fab labs) in more than 125 countries. A fab lab is a place to play, to create, to learn, to mentor, to invent: a place for learning and innovation. It utilises digital design tools, and digital fabrication tools, such as laser cutters, 3D printers, and CNC mills, along with electronics design, fabrication, and programming tools to support learning and applying STEAM skills.

### Session 3.03

#### **Curriculum updates**

**Engineering Studies:** Eddie Cecins, Curriculum Advisory Committee

**Design:** Peter Pooley, Prendiville Catholic College

**Materials Design and Technology:** Marco Tolomei, Curriculum Advisory Committee

An opportunity for attendees to learn about curriculum updates for 2024 from current Curriculum Advisory Committees members from Design, Engineering Studies, and Materials, Design and Technology. Peter Pooley, Eddie Cecins and Marco Tolomei will share their insights into the developments and changes within each course.

### Session 3.05 (double session – continues through Session 4)

#### **I have signed up to OnGuard Safety – now how do I get the best out of all its features?**

Craig Heufel, OnGuard Safety Training

#### **Please note participants are to bring laptops.**

This presentation will be run as a hands-on workshop. It is intended for participants who have had exposure to OnGuard Safety and are keen to fine tune their use of the program. The following will be covered: creating courses and adding training units



record and generate safety demonstration registers  
record and generate proficiency assessment registers  
generate certificates of student achievement  
setup and register machine inspections registers  
setup and record machine maintenance registers  
how to configure and schedule regular data backups  
generate comprehensive student training reports.

### Session 3.06 (double session – continues through Session 4)

#### PRIMARY STREAM: Primary bites – short presentations

1. **Teaching Design and Technologies to a multi-aged group**, Chloe Scott, Eneabba Primary School

Have you experienced teaching more than one age group at once? Ever wondered how this might be done in Design and Technology? This session will illustrate how a generalist primary teacher can support the learning of a broad range of students in one class. Using the School Curriculum and Standards Authority (SCSA) Design Technologies curriculum, Chloe will share her unit of work 'Cars' and show how she addresses the curriculum for pre-primary to year six students. Come along to find out more about the balancing act that is Multi-Aged Teaching.

2. **Innovate & Skate: Using the design process to create tech decks with your students**, Grant Haggerty, Christchurch Grammar School

Session description will be shared soon.

3. **Title TBA**, Claire Daniels, Santa Clara Primary School

Session description will be shared soon.



## SESSION 4

3:00 PM - 4:00 PM, Thursday 30 November 2023

### Session 4.01

#### **Robotics in D&T: How to bring the FIRST Lego League and FIRST Robotics Competition into the classroom**

Steve Warwick, Ashdale Secondary College

Hear about the FIRST Lego League and FIRST Robotics Competition and the benefits of such programs at your school. Find out about what the 2 competitions involve, the positive effect they can have on your students and community, and how these programs can be run within a STEM and D&T context.

### Session 4.03

#### **Democratising technology classrooms**

Toby Hurd and Chris Gray, Mater Dei College

We will present on 'democratising technology classrooms'. Mater Dei College has been on a journey over the last several years to engage students in our technology space. Our journey has primarily focused on student choice and voice. We are now at a stage in some classes where the students decide the direction, pace and focus. Person first, subject second is at the forefront of our practice. Every part of the class/subject is decided upon by all students in the hope of providing a stimulating imaginative place to learn. We have created subjects like Passion Projects, E-Sports, Comics & Gaming Design and Emerging Technologies. We are a work in progress.

### Session 4.04

#### **Digital Alchemy: Transforming concepts into printable models**

Edith Cowan University students

Join us for an exciting session where we explore the world of 3D printing in education. This session will teach you how to turn abstract ideas into tangible, 3D-printed models that can enhance teaching and engage students. We'll cover the fundamentals of 3D design software and provide live demonstrations of 3D printing. Whether you're new to this technology or seeking to improve your skills, this session has the tools to help bring 3D printing to your classroom.



## SESSION 5

**11:00 AM - 12:00 PM, Friday 1 December 2023**

### Session 5.01

#### **Circular economy and circular design: Giving students the keys to a more sustainable future**

Chelsea McLean, Circular Economy Pioneers

Design and Technology students have the potential to design out waste and pollution, keep valuable resources circulating and regenerate natural systems - the three key principles of a circular economy. We can't get to zero carbon without a circular economy. Reducing the global greenhouse gas emissions locked in products and food could achieve almost half of the Paris Agreement carbon reductions we need to make. To thrive within the limits of our planet we will need to redesign everything with circularity and regeneration in mind. The linear "take, make, dispose" approach simply cannot continue on a planet with finite resources. Humanity is using natural resources 1.8 times faster than our planet's biocapacity can regenerate. Waste and pollution are the consequences of decisions made at the design stage where around 80 percent of environmental impacts are determined. Chelsea will share how Design and Technology teachers could encourage students to design out waste and pollution in their design projects using circular economy principles and business models. She will also share how students can look to nature for inspiration and use more circular design methods. Young people have extraordinary capacities for innovation and students have the potential to redesign a future that ensures enough for all forever.

### Session 5.02

#### **WAAPA behind the scene – workshop and facility tour**

Assoc Prof Richard Reddrop, Western Australian Academy of Performing Arts (WAAPA)

WAAPA produces around 70 individual events each year, across the disciplines of Dance, Music, Musical Theatre, Aboriginal Performance and Acting. Central to facilitating this significant body of work is the Production & Design Department. This tour will take you backstage and into our various workshops, providing an insight into the areas that make performance possible. The tour will also include our teaching areas where we prepare our learners for their production work, including Lighting, Sound, Costume and Set Design.

### Session 5.03

#### **Student-driven learning: Encouraging Design and Technology students to embrace uncertainty and develop advanced problem-solving skills**

Steve McLean, Scotch College

Join this immersive workshop where Design and Technology teachers become students, experiencing firsthand the power of student-driven learning. Explore non-technical skills like communication and problem-solving within the context of product creation. Discover how to integrate these essential skills into your teaching, empowering your students to excel in real-world challenges. Don't miss this opportunity to unlock the potential of advanced problem-solving through engaging and innovative pedagogy.





### **Session 5.05 (double session – continues through Session 6)**

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## SESSION 7

1:55 PM - 2:55 PM, Friday 1 December 2023

### Session 7.01

#### **Onshape CAD – a new platform for design in schools**

Julian Wilmot, Melville Senior High School

**Please note participants are to bring laptops and will need to register prior to the conference on [www.onshape.com/en](http://www.onshape.com/en).**

Onshape is a Computer Aided Design (CAD) program like no other. So what makes it different? Unlike any other CAD, Onshape is completely based in the cloud. Meaning, there are no software downloads, updates or licensing concerns. Onshape is used in industry and is growing in its reach across the world. Schools around the globe are using it, as well as many in Australia already. Whether you currently use a different platform or have never used CAD before, this session will cater for all. On the day, you will log into Onshape and use it first-hand. Come and find out why it is a great resource for your classroom.

### Session 7.02

#### **Robotics in D&T: How to bring the FIRST Lego League and FIRST Robotics Competition into the classroom**

Steve Warwick, Ashdale Secondary College

Hear about the FIRST Lego League and FIRST Robotics Competition and the benefits of such programs at your school. Find out about what the 2 competitions involve, the positive effect they can have on your students and community, and how these programs can be run within a STEM and D&T context.

### Session 7.03

#### **How to start General/ATAR Mechatronics Engineering at your school**

Simon Tilley, Wesley College

**Please note participants are to bring laptops – no specific software required.**

An introduction in to how to start General/ATAR Mechatronics Engineering at your school. This will look at the equipment that would be required. Possible projects that could be used for year 11 and 12. Resources that are available including, theory booklets and past exams. The ability to teach the course without having to do coding and how this can be adapted to teach years 7-10. There will also be the opportunity to become part of the mechatronics teachers group who meet up once a year to discuss resources, projects, suppliers and networking. I am starting a new 4th year module at ECU on Mechatronics and hope that some students will be present to give a first-hand experience of this.

### Session 7.05 (double session – continues through Session 8)

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how to configure and schedule regular data backups

generate comprehensive student training reports.



## SESSION 8

3:00 PM - 4:00 PM, Friday 1 December 2023

### Session 8.01

#### Curriculum Updates

**Engineering Studies:** Eddie Cecins, Curriculum Advisory Committee

**Design:** Peter Pooley, Prendiville Catholic College

**Materials Design and Technology:** Marco Tolomei, Curriculum Advisory Committee

An opportunity for attendees to learn about curriculum updates for 2024 from current Curriculum Advisory Committees members from Design, Engineering Studies, and Materials, Design and Technology. Peter Pooley, Eddie Cecins and Marco Tolomei will share their insights into the developments and changes within each course.

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#### Democratising technology classrooms

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