Reflective essay:

Creating and maintaining supportive and safe learning environment (Australian Institute for Teaching and School Leadership, 2017) is essential for both students and teachers to succeed and assist in meeting curriculum and gaining valuable knowledge in teaching pedagogies. Learning pedagogies are essential aspects to teaching as they encourage students to partake in classroom activities and enhance their understanding of the curriculum points being taught.

Based on the current curriculum, I have identified strengths and weaknesses in my knowledge from completing the skills audit. Strengths that I have identified are seen in Appendix A under the second curriculum point in which my foundational knowledge regarding computer aided design (CAD) and generative design. Understanding my abilities and what areas need more focus and growth allow me to better comprehend the curriculum and how I need to adapt my current skill set. Knowing what the curriculum is asking of me as a pre-service teacher, provides me with variable information regarding curriculum-based learning. This information is essential to further incorporate Information and Communications Technologies (ICT) into lesson plans as a wide range of knowledge in specific subject areas allows for a wide range of student abilities to be taught and enhance student engagement. Having a deeper understanding of ICT in the classroom benefits all students. This can be applied through differentiated instructions as “every student has an individual learning style” (Weselby, 2014); however, to apply this learning pedagogy, further implementation and trailing of this teaching method is required. These areas for growth and identified strengths allow me to determine what teaching areas need improvement and how these can ebeniste a classroom and adhere to the curriculum.

From the completion of the skills audit (Appendix A) and the professional learning plan (Appendix B), I have analysed the curriculum and identified specific aspects that I need to develop to know the content and how to teach it (Australian Institute for Teaching and School Leadership, 2017). Gaining a better understanding of curriculum points that I need to develop my knowledge in is essential to further my education to plan and implement effective teaching and learning (Australian Institute for Teaching and School Leadership, 2017) in the classroom. Ensuring these curriculum points are addressed benefits me as a preservice teacher as it will provide me with more opportunities for professional development through attending workshops, observing head teacher lessons and lesson plans to better understand what level of knowledge I should aim for. These opportunities will allow me to connect and analyse what teaching methods, lessons and activities in the classroom students benefit from depending on the curriculum point being taught that lesson. Engaging with different schools (placement) and accumulating a wide range of teaching methods and gaining essential content

information benefits me from achieving the goals I have set for myself within Appendix A.

The completion of Appendix A provides me with essential knowledge on knowing students and how they learn (Australian Institute for Teaching and School Leadership, 2017), based off the curriculum for Technology Mandatory (7-8). Students in junior years in high school benefit from project-based learning (PBL) as they can physically make a project and better understand the properties and processes to completing projects and how/why specific characteristics are the way they are. This subject area benefits a wide range of students and often keeps them moving in the classroom, maintaining classroom engagement and student academics. “Have students explain what they learned through the invention process and what, if anything, they would do differently if they were to do the project again” (Marzano, 2019), reflective thinking encourages students to ensure they understood what was asked of them and as a teacher, allows reflection on what students understood and what they did not so I can further my knowledge on gaps in the lessons/curriculum through students’ feedback. This allows me to add to my skills audit (Appendix A) in the future or replace curriculum points with those I have discovered that there are gaps in my knowledge.

Overall, through the completion of Appendix A and Appendix B and a reflection, I have outlines and identified gaps in my knowledge regarding the curriculum and have planned out how to fill these gaps. With the use of observations, further research of processes and tools, and feedback, I will be able to minimise gaps made clear in Appendix A and B. Encouraging students to undertake PBL in the classroom will benefit them and encourage students to develop newfound skills in the workshop and with ICTs, which are essential in the modern world.

References:

Australian Institute for Teaching and School Leadership. (2017). *Australian Professional Standards for Teachers*. Australian Professional Standards for Teachers. https://www.aitsl.edu.au/standards

Marzano, R. J. (2019). *The handbook for the new art and science of teaching*. Solution Tree Press.

NESA 2017 Stage 4 Technology Mandatory

Weselby, C. (2014). *What is differentiated instruction? Examples and strategies*. ResilientEducator.com. https://resilienteducator.com/classroom-resources/examples-of-differentiated-instruction/

Appendix:

Appendix A:

Skills audit:

Curriculum (NSW) TAS Year 8 Technology Mandatory	General Capabilities	Cross-Curricular Priorities	Level of proficiency: Novice-Beginner	Level of proficiency: Competent	Level of proficiency: Proficient-Expert	Evidence: How do you know?
Investigate a current and innovative product developed by an Aboriginal and/or Torres Strait Islander designer that is influenced by their cultural identity	N/A	- Aboriginal and Torres Strait Islander histories and cultures - Work and enterprise	✔ Have learnt the basics/have limited knowledge in this area of the curriculum. Further study is required to gain a deeper understanding			Have not studied current products developed by an Aboriginal and Torres Strait Islander
Generate and communicate the development of design ideas, plans and processes for various audiences using appropriate	- Critical and creative thinking - Information and communication technology capability - Literacy	N/A		✔ I have the foundation skills for generation and communication of design ideas with a broad		Used different CAD software in the past two years whilst studding at university, applied multiple graphics (hand

technical terms and technologies including graphical representation techniques (ACTDEP036)	- Numeracy			range of skills to achieve this		drawn and computer aided) methods, created scale models
Apply appropriate tools, equipment, materials, techniques and processes in the production of a design project (ACTDEP034)	- Critical and creative thinking - Literacy - Numeracy	N/A		✔ I have the foundation skills and a broad range of knowledge for applying appropriate methods to produce a design project		Using different manufacturing techniques in university, this is done by participating in TECH207 (Food and Society), TECH205 (Design in Timber), TECH104 (Product Design) and TECH206 (Design in Metal), all allow me to further my knowledge in the workshop and apply appropriate processes in

						the production on a design project
Select from a range of materials, components, tools, equipment and processes to develop design solutions (ACTDEP035)	- Critical and creative thinking - Information and communication technology capability	- Sustainability - Work and enterprise		✔ I have the foundation skills and a broad range of knowledge for selecting appropriate equipment and processes for design development		Have used and applied a wide range of materials, components, tools, equipment, and processes whilst completing projects in university
Develop criteria to evaluate design ideas, processes and solutions, the functionality, aesthetics and a range of constraints, eg accessibility, cultural, economic, resources, safety, social, sustainability,	- Creative and critical thinking - Personal and social capability	- Sustainability		✔ I have the foundation skills and a broad range of knowledge to develop criteria, however, further research and overview will be required		Whilst completing practical projects at university, I have gained skills and knowledge in evaluating specific criteria

technical (ACTDEP038, ACTDIP027, ACTDIP031)						
Consider innovative applications of advancing technologies to increase efficiency of time and/or materials in the production of models or products	- Creative and critical thinking - Information and communication technology capability	N/A		✔ I have the foundation skills and a broad range of knowledge to apply advancing technologies, however, depending on the technology, more research will be required		

Appendix B:

Smart Goals Template:

GOALS	RESPONSE
Relevant curriculum and/or pedagogy	Investigate a current and innovative product developed by an Aboriginal and/or Torres Strait Islander designer that is influenced by their cultural identity Project based learning
Relevant APST	1.4 Strategies for teaching Aboriginal and Torres Strait Islander students 2.4 Understand and respect Aboriginal and Torres Strait Islander people to promote reconciliation between Indigenous and non-Indigenous Australians
Specific	Conduct research to expand and deepen my knowledge on products developed by Aboriginal and Torres Strait Islander peoples
Measurable	Able to identify and describe current and innovative products developed by Aboriginal and Torres Strait Islander peoples
Actionable	Take part in classes/observe lessons from teachers who have an extensive comprehension
Realistic	May be difficult/distracting to observe lessons
Timely	By the commencement of semester

GOALS	RESPONSE
Relevant curriculum and/or pedagogy	Generate and communicate the development of design ideas, plans and processes for various audiences using appropriate technical terms and technologies including graphical representation techniques (ACTDEP036) - sketches, drawings and computer-aided designs (CAD) - patterns

	- models - digital presentations Project based learning Differentiated instructions
Relevant APST	1.5 differentiate teaching to meet the specific learning needs of students across the full range of abilities 2.6 Information and Communication Technology (ICT)
Specific	Creating portfolios for projects created in previous courses whilst at university Creating a wide range of products in the timber and metal workshops to widen my knowledge for in the classroom
Measurable	Able to generate and communicate developed design ideas by using a range of technologies
Actionable	Reading and analysing marking criteria and assessing components required to accurately generate designs
Realistic	Will be time consuming, and standards will differ per school
Timely	At the end of placement

GOALS	RESPONSE
Relevant curriculum and/or pedagogy	Apply appropriate tools, equipment, materials, techniques and processes in the production of a design project (ACTDEP034) - contemporary, traditional and/or advancing manufacturing techniques - surface preparation techniques, finishes, embellishments and/or decorations - materials to meet a specific need
Relevant APST	1.5 Differentiate teaching to meet the specific learning needs of students across the full range of abilities 3.4 Select and use resources
Specific	Completing projects in both metal and timber workshops and conducting projects with a wide range of skills and techniques to broaden my knowledge

Measurable	Accurately apply appropriate materials to current project with high quality results
Actionable	Conducting research and creating projects using a wide range of technologies to gain skills
Realistic	Majority of skills have been attained through university and high school studies. Refreshing knowledge through research and creating test pieces will be required for some methods
Timely	By the final week of placement

GOALS	RESPONSE
Relevant curriculum and/or pedagogy	Select from a range of materials, components, tools, equipment and processes to develop design solutions (ACTDEP035) Project based learning
Relevant APST	1.5 Differentiate teaching to meet the specific learning needs of students across the full range of abilities 2.2 content selection and organisation
Specific	Trial and error in the metal work and timber workshop to attain the best result regarding material choices, joinery, and finishing applications
Measurable	Accurately apply and demonstrate safe use of a range of tools and techniques to develop design solutions
Actionable	Gain knowledge from supervising teacher and university tutors to refresh in skills required, otherwise most skills are already attained from previous studies
Realistic	Independent research will/may be needed for some processes due to time management and resources available
Timely	At the conclusion of the course

GOALS	RESPONSE
Relevant curriculum and/or pedagogy	Develop criteria to evaluate design ideas, processes and solutions, the functionality, aesthetics and a range of constraints, eg accessibility, cultural, economic, resources, safety, social, sustainability, technical (ACTDEP038, ACTDIP027, ACTDIP031) Project based learning
Relevant APST	2.3 Curriculum, assessment, and reporting 4.5 Use ICT safely, responsibly, and ethically
Specific	Will need to gain more knowledge in developing appropriate and succinct criteria to adhere to guidelines
Measurable	Producing clear and succinct design criteria for a range of products and stage levels
Actionable	Attain knowledge from tutors or teachers whilst on placement to gain appropriate and applicable understandings regarding requirements for criteria development
Realistic	Have not developed criteria individually, will need supervision/guidance which may not be available depending on timetables/may be time consuming
Timely	At the end of the semester

GOALS	RESPONSE
Relevant curriculum and/or pedagogy	Consider innovative applications of advancing technologies to increase efficiency of time and/or materials in the production of models or products Project based learning
Relevant APST	2.6 Information and communication technology (ICT) 4.5 Use ICT safely, responsibly, and ethically

Specific	Gain a deeper understanding of innovative applications and how these can be applied safely in the classroom/workshop
Measurable	Producing innovative applications using advanced technologies to a high standard with the production of models or products
Actionable	Independent and collaborative research on new and advancing technologies that can be applied in the classroom
Realistic	Can be time consuming and will need to ensure new products can be included in the school's budget/appropriate for the school setting (stages)
Timely	By the last week of placement