
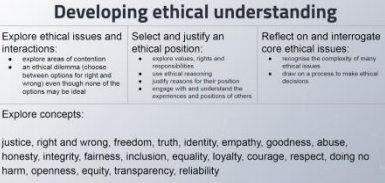



# AI Professional Learning: AI and Ethics

## OVERVIEW: PRIMARY AI and ETHICS

DT Curriculum focus/General capability	Section of slide deck	Covered in the session	Resources
Ethical understanding		<p>What is ethics?</p> <ul style="list-style-type: none"> <li>Ethics is largely concerned with... what we ought to do ... And ... how we ought to live based on a set of values.</li> <li>Discuss terms you associate with ethics; honesty, integrity, respect etc</li> <li>Discuss the question: How do humans learn to behave ethically?</li> </ul>	<p>Downloadable resources/links</p> <p>Word cloud generator: <a href="https://worditout.com/word-cloud/create">https://worditout.com/word-cloud/create</a></p>
Ethical understanding		<p>Developing ethical understanding</p> <p>Our approach involves 3 key elements:</p> <ul style="list-style-type: none"> <li><b>Explore ethical issues and interactions</b> explore areas of contention</li> </ul>	<p>Downloadable resources/links</p>



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		<ul style="list-style-type: none"><li>• <b>Select and justify an ethical position:</b> explore values, rights and responsibilities; use ethical reasoning, justify reasons for their position</li><li>• <b>Reflect on and interrogate core ethical issues</b> recognise the complexity of many ethical issues</li></ul>	
	 The diagram illustrates the integration of AI topics into the Australian Curriculum. It features a central hexagon labeled 'AI topics' surrounded by four circular icons representing different curriculum areas: Digital Technologies, Mathematics, Science, and English. The text 'Australian CURRICULUM' is visible at the top of the diagram.	<p>Curriculum connections</p> <ul style="list-style-type: none"><li>• Digital Technologies: Focus on information systems the related key concepts include impacts, interactions and digital systems:</li></ul> <p><b>Impact:</b></p>	



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		<p>Analysing and predicting how systems including AI systems meet our needs, affect people and can change society.</p> <p><b>Interactions:</b> Deals with how users experience and interface with digital systems.</p> <p><b>Digital systems:</b> we can explore the composition of digital systems and their use in all aspects of our lives. What are the key parts and functionality?</p> <p>While focussing on the impact of these information systems we can incorporate relevant general capabilities.</p> <ul style="list-style-type: none"><li>• General capability: Ethical Understanding</li></ul>	
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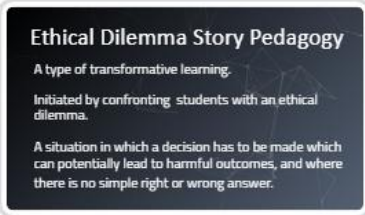
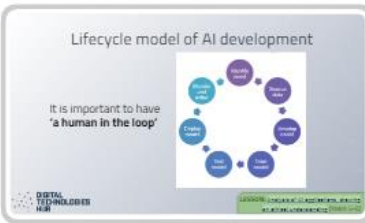
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		<ul style="list-style-type: none"> <li>• General capability: ICT capability</li> <li>• General capability: Critical and creative thinking</li> </ul>	
<p>Digital systems</p>		<p>Revisit our definition of AI</p> <ul style="list-style-type: none"> <li>• Artificial Intelligence (AI) is the creation of machines to mimic human capabilities, such as teaching a machine to see (recognise objects in an image) and listen (interpret and analyse sounds).</li> <li>• Can we trust AI to make ethical decisions? Are they designed to be fair?</li> </ul>	<p>Downloadable resources/links</p> <ul style="list-style-type: none"> <li>•</li> </ul>
<p>Impact and interactions/ Ethical understanding/ Critical and creative thinking</p>		<p>Introduce an ethical dilemma involving an AI</p> <ul style="list-style-type: none"> <li>• A self-driving car provides a useful context to unpack an ethical dilemma</li> <li>• Identify the issue: (An accident is likely to occur causing harm)</li> <li>• Discuss what makes this a dilemma. (There is no ideal option; all options will result in an accident occurring)</li> <li>• How would you react in this situation? Choose a position. What is the likely outcome of your decision? Justify your response</li> </ul>	<p>Downloadable resources/links</p> <ul style="list-style-type: none"> <li>• <a href="#">The ethical dilemma of self-driving cars - Patrick Lin</a></li> </ul>


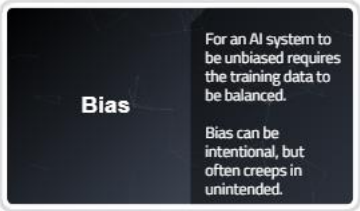
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	 <p><b>Reflection</b></p> <p>People react Machines are purposely trained</p>	<p>Reflection</p> <ul style="list-style-type: none"> <li>• This dilemma opens up the discussion that while a human driver reacts to the situation an AI self-driving car has to be programmed.</li> <li>• It raises the issue; in the case of avoiding an accident how does it choose when other people's lives are at stake? How is it programmed to make these decisions? What rules does it follow?</li> <li>• Who makes the rules? AI Developers, Government, Ethics advisory groups</li> </ul>	<p>Downloadable resources/links</p> <ul style="list-style-type: none"> <li>•</li> </ul>
<p>Impact and interactions/ Ethical understanding/ Critical and creative thinking</p>	 <p><b>Scenarios: drawing on ethical understanding</b></p> <p>Aim: stimulate thinking about Artificial Intelligence (AI) applications and some of the ethical issues that may arise from them.</p> <p>An ethical issue exists when there are competing alternatives and the right thing to do is not clear.</p> <p>There are no right or wrong answers.</p> <p>In each question, consider what you think is the 'right' thing to do. There are four options for each question - A, B, C, and D.</p> <p><b>Scenarios: Facial recognition</b></p> <p>A company is behind schedule and over budget in building an AI application.</p> <p>The AI uses face recognition to unlock a smartphone.</p> <p>Through testing, the company found that the AI worked with <b>most</b> people's faces.</p>	<p>Scenarios that can be used to discuss ethical dilemmas</p> <ul style="list-style-type: none"> <li>• We refer to the AI quiz which sets out a scenario together with possible options that require students to take a position and justify their choice.</li> <li>• In each scenario relevant ethical-related values are identified</li> <li>• The AI quiz discussion provides teachers with the tools to discuss each scenario.</li> </ul>	<p>Downloadable resources/links</p> <ul style="list-style-type: none"> <li>• <a href="#">AI quiz</a></li> <li>• <a href="#">AI quiz: discussion</a></li> </ul> <p>Lesson idea:</p> <ul style="list-style-type: none"> <li>• <a href="#">AI Quiz</a></li> <li>• (Years 5-6)</li> </ul>



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<p>Ethical understanding</p>	 <p><b>Ethical Dilemma Story Pedagogy</b> A type of transformative learning. Initiated by confronting students with an ethical dilemma. A situation in which a decision has to be made which can potentially lead to harmful outcomes, and where there is no simple right or wrong answer.</p>	<p>Ethical Dilemma Story Pedagogy (EDSP)</p> <ul style="list-style-type: none"> <li>• This is a type of transformative learning</li> <li>• The AI scenarios used confront students with an ethical dilemma</li> <li>• These are chosen because each situation involves a decision to be made which can potentially lead to harmful outcomes, and where there is no simple right or wrong answer.</li> </ul>	<p><a href="#">Ethical Dilemma Story Pedagogy – A Constructivist Approach to Values Learning and Ethical Understanding</a></p>
<p>Systems thinking/Ethical understanding/ Critical and creative thinking</p>	 <p>Lifecycle model of AI development It is important to have 'a human in the loop'</p>	<p>AI lifecycle</p> <ul style="list-style-type: none"> <li>• How might ethical considerations be incorporated into an AI lifecycle?</li> <li>• Discuss the importance of a human in the loop.</li> <li>• The Australian Government has a set of AI ethics principles.</li> </ul>	<p>Downloadable resources/links</p> <ul style="list-style-type: none"> <li>• <a href="#">AI Ethics Principles, Department of Industry, Science, Energy and Resources</a></li> </ul> <p>Lesson idea</p> <ul style="list-style-type: none"> <li>• <a href="#">Analysis of AI applications, drawing on ethical understanding (Years 5-6)</a></li> </ul>

# AI Professional Learning: AI and Ethics

<p>Impact/Interaction/Systems thinking/Ethical understanding/ Critical and creative thinking</p>		<p>We use the suggested links to learn more about AI technology used to diagnose skin cancers.</p> <p>Use the Analysis worksheet: ethical considerations to record your ideas.</p> <ul style="list-style-type: none"> <li>○</li> <li>○ Flow chart</li> <li>○ Worksheet</li> </ul>	<p>Downloadable resources/links</p> <ul style="list-style-type: none"> <li>• <a href="#">AI scenarios</a></li> <li>• <a href="#">Flow chart A</a></li> <li>• <a href="#">Worksheet: Years 5-6</a></li> </ul> <p>Lesson idea</p> <ul style="list-style-type: none"> <li>• <a href="#">Analysis of AI applications, drawing on ethical understanding (Years 5-6)</a></li> </ul>
		<p>Bias</p> <p>Discuss the need for the training data to be balanced to avoid bias.</p> <p>Bias can be intentional, but often creeps in unintended.</p>	<p>Downloadable resources/links</p> <ul style="list-style-type: none"> <li>• <a href="#">Mycomputer brain exp 22</a></li> </ul>

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<p>Impact/Interaction/Systems thinking/Ethical understanding/ Critical and creative thinking</p>	 <p><b>Assessment</b></p> <p>To what extent did a student:</p> <ul style="list-style-type: none"> <li>identify and describe an ethical issue</li> <li>weigh up multiple perspectives to make informed decisions</li> <li>respond to a problem fairly, justly and responsibly?</li> </ul> <p><b>quantity of knowledge</b></p> <table border="1"> <thead> <tr> <th>little used to be</th> <th>to mention given</th> <th>decision is</th> <th>decision is</th> <th>decision is</th> <th>decision is</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td>decision is right or wrong</td> <td>decision is right or wrong given reasons related to fairness, equality, diversity</td> <td>decision is situation that require ethical judgment</td> <td>decision is situation that require ethical judgment</td> </tr> </tbody> </table> <p><b>Quality of understanding</b></p> <table border="1"> <thead> <tr> <th>little used to be</th> <th>to mention given</th> <th>decision is</th> <th>decision is</th> <th>decision is</th> <th>decision is</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td>decision is right or wrong</td> <td>decision is situation that require ethical judgment</td> <td>decision is situation that require ethical judgment</td> <td>decision is situation that require ethical judgment</td> </tr> </tbody> </table>	little used to be	to mention given	decision is	decision is	decision is	decision is			decision is right or wrong	decision is right or wrong given reasons related to fairness, equality, diversity	decision is situation that require ethical judgment	decision is situation that require ethical judgment	little used to be	to mention given	decision is	decision is	decision is	decision is			decision is right or wrong	decision is situation that require ethical judgment	decision is situation that require ethical judgment	decision is situation that require ethical judgment	<p>Assessment</p> <p>Discuss ways to assess ethical reasoning.</p> <p>To what extent did a student:</p> <ul style="list-style-type: none"> <li>identify and describe an ethical issue</li> <li>weigh up multiple perspectives to make informed decisions</li> <li>respond to a problem fairly, justly and responsibly?</li> </ul> <p>Describe a rubric with relevant criteria.</p>	
little used to be	to mention given	decision is	decision is	decision is	decision is																						
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	 <p><b>Summary</b></p> <p>AI is a rich field that provides many opportunities to consider ethical implications of human actions in a classroom setting.</p> <p>It reflects on our own human struggle with ethics and moral decision making.</p> <p>Can machines that we make in our own image result in a more just world (utopia), or will they amplify our own faults (dystopia)?</p>	<p>Summary</p> <ul style="list-style-type: none"> <li>AI is a rich field that provides many opportunities to consider ethical implications of human actions in a classroom setting.</li> <li>It reflects on our own human struggle with ethics and moral decision making.</li> <li>Can machines that we make in our own image result in a more just world (utopia), or will they amplify our own faults (dystopia)?</li> </ul>	<p>Video: <a href="#">AI: Impact on Society</a></p>																								