

Principles of Learning and Teaching P-12 Unpacked

This 'unpacking' section of the handbook is intended to clarify the intention of each Principle and its underlying components. The points illustrating what each component is and is not were developed over time by a consultative process that included educators from a variety of key learning areas. The examples, while by no means exhaustive, are meant to provide a picture of what each component might look like in practice. These examples are, in most cases, drawn from the actual experience of teachers, gleaned from interviews and reports, and from anecdotal notes from consultants in different key learning areas.

1. The learning environment is supportive and productive

The teacher builds positive relationships with and values each student. Through teacher modelling and classroom strategies based on cooperation and mutual support, an environment is created where students feel comfortable to pursue inquiries and express themselves. They take responsibility for their learning and are prepared to pursue and try out new ideas.

1.1 The teacher builds positive relationships through knowing and valuing each student.

This component is about building quality relationships, based on respect, value and care. It is about taking time to get to know and understand students, in an educational sense but also in a wider social and personal sense.

This component is demonstrated by teachers:

- Targeting questions, or responding to answers, in a way that acknowledges individual needs and potential contributions
- Finding out about the interests and background of each student
- Focusing attention, when circulating, on students who have particular needs
- Encouraging all students to contribute
- Responding positively and non judgmentally to student contributions
- Using humour and anecdotes to develop rapport with the class
- Talking to students to determine the root causes of misbehaviour and responding appropriately.

This component is NOT demonstrated when:

- Teachers make judgements about students based on generalisations relating to social or cultural background
- Teachers judge students on a narrow set of skills or knowledge
- Teachers have low expectations and/or negative opinions about certain groups of students.

Examples to illustrate the component:

- A tradition is established in class whereby students talk about instances of new ideas connected to their lives and communities.
- The teacher provides support for students through mentoring and pastoral roles and organisation of extra activities, such that relationships are built around multiple aspects of students' lives.
- During a unit on health and disease, student opinion on current health and community issues is sought, and students are encouraged to talk about the complexities of health issues for their generation.
- A design task is framed around students' needs and interests, and the teacher is open to their differing ideas and helps them work through the design brief.

1.2 The teacher promotes a culture of value and respect for individuals and their communities.

This component is about creating an environment where students' comments are acknowledged, their different opinions are respected, cultural and other differences are accepted, and where students feel safe and valued.

This component is demonstrated by teachers:

- Accepting the opinions and values on which students' comments are based, and embracing differences rather than insisting that students conform
- Ensuring that all contributions to class or group discussion are listened to and accorded respect
- Establishing a climate where difference of perspective is welcomed and learnt from
- Establishing agreed rules of behaviour to provide a safe and productive environment.

This component is NOT demonstrated when:

- Class discussions are restricted by the teacher and student opinion is not acknowledged to any significant degree
- Mainstream opinions are allowed to dominate discussion
- Discriminatory language is not challenged

Examples to illustrate the component:

- Students are encouraged to develop guidelines for class discussions where they all agree to listen to each person's views carefully and answer respectfully, even if they disagree with the view.
- In a design task students are invited to talk about the way particular artefacts are used in their cultures, or home lives.
- Students establish contact via email with a sister school in an overseas country, exchanging information with a view to exploring and comparing a particular social aspect of both countries (eg, traffic problems, population problems, family issues etc).
- During topics dealing with contemporary events, all students (of different gender, ethnicity or religious affiliation) are explicitly encouraged to contribute to discussion of issues and implications for them.
- In a science unit on light, Islamic contributions to our current understanding of vision are described and discussed.

1.3 Teaching strategies promote students' self-confidence and willingness to take risks with their learning

This component is primarily about students being supported to feel confident to contribute ideas without fear of being 'put down'. It includes the notion of students moving 'outside the square' with their thinking and learning; not settling for the 'ordinary' but trying out new ideas and practices. This may involve teacher modelling and negotiation.

This component is demonstrated by teachers:

- Providing appropriate support structures for open inquiry projects and investigations
- Encouraging students to follow interesting and open lines of inquiry
- Modelling acceptance and valuing of unusual ideas
- Using explicit assessment criteria that encourage students to try out new ideas.

The component is NOT demonstrated when:

- Only 'right answers' are accorded respect and encouragement

- Student attempts at problem solving activities are responded to judgmentally rather than as opportunities for further learning
- Speculative responses are discouraged.
- Curriculum planning does not allow room for canvassing of diverse opinion and ideas.

Examples to illustrate the component:

- Students engage in exploratory tasks or constructions and are made aware that trying out ideas that have some risk of not succeeding will be assessed positively.
- Students are encouraged to draw in a way they have not previously tried and imaginative efforts that break new ground are encouraged.
- Students are encouraged to interpret the idea of 'energy' in a variety of complex situations that are challenging but productive to analyse.
- Students are supported through the use of video analysis to evaluate the offensive strategies of a team in a particular sport and develop defensive strategies to counter these.

1.4 Each student experiences success through structured support, the valuing of effort, and recognition of their work.

This component involves teachers supporting students to achieve success as they move through the learning process. It is about recognising that all students have different abilities and acknowledging and valuing the effort each student puts into improving their work.

This component is demonstrated by teachers:

- Determining students' differing abilities and providing support when it is needed
- Acknowledging students' progress and scaffolding learning to maximise success
- Recognising and celebrating the achievements of all students
- Assessing student work against prior achievements rather than against other students' work
- Providing students with realistic but challenging goals and recognising the effort they put towards achieving these goals.
- Acknowledging effort as well as ability, both publicly and in personal feedback

The component is NOT demonstrated when:

- All student work is only assessed against general classroom criteria
- Student achievement is ranked by academic performance only.

Examples to illustrate the component:

- Students set goals and timelines for a research project and share their progress with the teacher and other students at the commencement of each class. Students are assessed against their own goals.
- Students are given ample opportunity to develop new skills before embarking on tasks that require their application.

2. The learning environment promotes independence, interdependence and self motivation.

Teachers model practices that build independence and motivate students to work in an autonomous manner. Students are involved in decision making within the classroom in relation to what and how they learn and are encouraged to take responsibility for their learning. Team building skills are also explicitly taught so that students learn to collaborate, negotiate and contribute to joint assignments and experience the sharing of roles, responsibilities and ownership.

2.1 The teacher encourages and supports students to take responsibility for their learning.

This component involves structuring learning experiences and providing support and scaffolding to enable students to make choices and take responsibility for their learning. It also involves a focus on students understanding themselves as learners and is facilitated by clear, transparent, criteria-based and often, collaborative, assessment processes.

This component is demonstrated by teachers:

- Providing opportunities for students to make individual and collaborative decisions about how they will undertake learning tasks
- Encouraging students to set goals for their learning, to self-monitor their progress and, provide evidence to the teacher when they believe they have achieved their goals
- Establishing (perhaps in consultation with students) clear criteria or rubrics for assessment before “a piece of work” is begun
- Establishing what students know already and providing the opportunity for students to build on prior knowledge in manageable steps..

This component is NOT demonstrated when:

- Decisions relating to all projects, research and investigations are made by the teacher
- All student goals are set by the teacher.

Examples to illustrate the component:

- Students are encouraged to be involved in determining the aspects of a particular topic that they wish to cover, and design their own assessment tasks.
- Students brainstorm aspects of an investigation they wish to be included in the assessment criteria before commencing a piece of research.
- Using the Sport Education in Physical Education Program (SEPEP) model, students fulfil roles such as umpiring, team coach, manager, captain, management board, etc. All students then share the responsibility for the design and implementation of the sport competition.

2.2 The teacher uses strategies that build skills required for productive collaboration.

This component involves students collaborating on meaningful tasks and responses to questions. While the teacher uses strategies (such as cooperative learning strategies and strategic selection of groups) to establish an atmosphere of cooperation and collaboration, the focus is on the meaningful learning. Students actively participate in the negotiation of roles, responsibilities and outcomes. Such collaboration may also involve a whole class focus on related projects, such as an environmental project or community survey.

This component is demonstrated by teachers:

- Arranging their classroom in such a way as to maximise engagement and interaction through collaborative discussion (eg. group tables)
- Regularly setting group tasks and establishing ground rules about how the groups will operate
- Explicitly teaching students to work as a team by assigning different roles within groups to make students responsible for particular aspects of tasks
- Assigning tasks that require the sharing of expertise and ensuring that students’ contributions are valued by other students.

The component is NOT demonstrated when:

- Students mainly work individually, with little opportunity for whole class or small group discussion
- Class discussion is dominated by the teacher’s voice

- Minimal opportunity is given for students to interact with and support each other.

Examples to illustrate the component:

- 'Expert' groups are used to facilitate learning about the different regions of Australia: small groups break into 'expert' groups to study a particular region and then return to share their information with their original group, enabling all members of the group to be provided with an overview of all regions covered.
- Within a unit that deals with heat and temperature, design tasks on heat control are undertaken by groups, and the teacher negotiates a task proposal with each group.
- A year 9 integrated studies class undertakes a community project involving the design and construction of an environmental trail. Students are supported to organise into groups assigned particular aspects of the task. They consult community experts, draw up a budget, and develop proposals for sponsorship for materials from local industries.

3. Students' needs, backgrounds, perspectives and interests are reflected in the learning program

A range of strategies is used to monitor and respond to students' different learning needs, social needs, and cultural perspectives. Students' lives and interests are reflected in the learning sequences. A variety of teaching strategies are used to accommodate the range of abilities and interests, and to encourage diversity and autonomy.

3.1 Teaching strategies are flexible and responsive to the values, needs and interests of individual students.

This component acknowledges that the classroom should be an interesting place and suited to a wide range of dispositions. Learning may involve a negotiation between prior views and knowledge and public knowledge found in the curriculum.

A range of student competencies and potential for future learning may be untapped in classrooms. This component emphasises the need to provide opportunities for these to be displayed.

This component is demonstrated by teachers:

- Regularly using popular media such as magazines and television, or popular fiction to introduce or challenge ideas
- Using students' personal interests (sports, hobbies) and social/ethical concerns as the context of topics, or to link with social relevance of the learning and issues
- Using classroom strategies that acknowledge gender, personal and religious differences
- Encouraging students to respect the rights of others to hold differing views
- Valuing and building on the perspectives and experiences students bring to the classroom
- Creating an environment of encouragement for students to contribute personal stories to class discussion
- Providing a stimulating classroom environment that generates active interest in topics.

The component is NOT demonstrated when:

- The focus of a unit is purely on formal knowledge, with few connections made to daily life applications
- Applicability of ideas are discussed, but they do not refer to the sort of situation students would normally be concerned about in their lives
- The focus of the unit is based on a single view of the topic

- Knowledge is presented in a sequence that represents the structured discipline view of the material, rather than the connections that might be made with student interests and prior knowledge.

Examples to illustrate the component:

- A physics unit focuses on sport, and investigations include the design of sneakers, the science underlying a tennis swing and experiments on soccer balls and their flight
- A history unit on medieval Europe includes substantial discussion of the way young people would have experienced life at that time.
- A unit on festivals and celebrations embraces the diversity of cultural backgrounds within the classroom by encouraging students to share experiences of particular events unique to their own culture and events that are celebrated in a variety of ways by different cultures.
- An astronomy unit is designed around issues students raise from a viewing of selected sci-fi video excerpts.
- A unit on contemporary social issues requires students to analyse the lyrics of popular music
- Students teach a dance or game from their family's culture to the rest of the class
- Students arrange a traditional indigenous games afternoon at a local sports carnival.

3.2 The teacher utilises a range of teaching strategies that support different ways of thinking and learning.

This component refers to different ways students might approach learning, their different abilities and strengths, or their different perspectives on themselves as learners. It also refers to the variety of ways ideas are represented and the need to approach and demonstrate learning using different media and representational modes. The component implies the use of diverse approaches to allow students to experience diverse ways of learning and knowing, and targeted support for individuals, based on teacher monitoring.

This component is demonstrated by teachers:

- Varying the structure and delivery mode across a range of teaching sessions
- Providing for a range of learning styles or modalities within teaching sessions and from one teaching session to another in terms of both teacher input and student learning experiences
- Helping students to understand their own specific learning needs and providing choice to cater for the range of those needs
- Setting a variety of types of tasks during each unit and using a range of resources eg. print, visual, aural, experiential.
- Providing variations in tasks to allow student choice on mode of presentation or type of approach (e.g. using Bloom's taxonomy, Gardner's multiple intelligences and other higher order thinking tools to ensure variety)
- Ensuring each task has an open ended aspect that allows students to work at different levels and paces
- Arranging for time in each teaching session to give individual support to students in need of particular attention
- Providing opportunities to use a range of multimodal communications as they are used in the community

The component is NOT demonstrated when:

- The unit is structured with the 'average' student in mind

- All students cover the same material with few opportunities for varied work
- There is little variation in the teaching strategies used in any unit
- There is little variation in the resources used eg. reliance on written texts
- Each teaching session has a similar structure
- There is the same balance between student and teacher voice in each teaching session
- All teaching sessions are based on activities with instructions and involve students negotiating what they do in the same way

Examples to illustrate the component:

- A teacher surveys students to determine their learning preferences and styles. Students are identified as predominantly visual, auditory and kinaesthetic learners. A variety of tasks is then developed using Gardner's Multiple Intelligences as a guide. Negotiated tasks further increase student choice.
- The teacher employs a flexible whole class-small groups-whole class strategy for teaching. This allows for explicit teaching of like-need groups and/or one-on-one teaching.
- Reading groups are strategically formed to cater for the different stages of reading competence.
- The teacher establishes a peer support network so that learning needs can be strategically supported. Cross-age tutors offer another means of support.
- The teacher employs a mix of group based and whole class discussion and activity
- The teacher moves between open discussion in which students' ideas are freely explored and more focused dialogue which brings disparate views together.
- The structure of planned teaching sessions is varied to allow for different mixes of student activity and input.

3.3 The teacher builds on students' prior experiences, knowledge and skills

Contemporary learning theories emphasise the importance of prior knowledge and beliefs in framing learning. This component emphasises the need to explore and monitor, and build on students' prior learning. This exploration is important for students also, to support their own understandings of their learning.

This component is demonstrated by teachers:

- Actively seeking to establish students knowledge, beliefs and skills as part of planning
- Utilising students' particular strengths and experience in supporting learning
- Building on students' prior learning, that may have taken place outside the school bounds
- Explicitly linking new ideas with the language and perspectives students' bring to the classroom

The component is NOT demonstrated when:

- Planning assumes students' prior experience and knowledge is immaterial, and probing of prior knowledge is not explicitly planned
- Student opinion is not canvassed
- No attention is paid to bridging between everyday and expert language

Examples to illustrate the component:

- A technology design task is preceded by a smaller task to explore the level of students' skills. Special attention is then paid during the design phase to accommodating the variety of levels of skill.
- A mathematics lesson on triangles begins with an exploration of what students understand to be a 'triangle', including physical objects of a variety of types. The discussion is guided towards a class consensus on the essential characteristics of a triangle as an abstraction from these concrete examples, with the teacher monitoring the variety of student views as the discussion progresses.
- Prior to a year 8 unit on force and motion, students' beliefs and understandings are explored using a variety of probes including 'concept cartoons', predict-observe-explain sequences involving practical events, and response to scenarios. This raises a number of questions which are then explored further as the basis for the learning sequence.

3.4 The teacher capitalises on students' experience of a technology rich world

Students come to classrooms with a variety of experiences of and expertise in contemporary technologies. This component encourages the exploration with students of their interest and expertise and the meaning they assign to technological communication, design and representation. It is about enlisting students' capabilities and interests associated with contemporary technologies.

This component is demonstrated by teachers:

- Incorporating contemporary technologies into learning sequences in ways that are meaningful for students
- Planning to acknowledge a diversity of student technological expertise and to take advantage of particular student expertise to support learning
- Talking about the purpose of texts, how they work and how meaning is organised, drawing examples from a variety of contemporary media and texts (websites, newspapers, TV commercials, films, magazines, lyrics, journals, video clips, online games and chat)

The component is NOT demonstrated when:

- Teachers do not incorporate contemporary technologies in ways that take advantage of students' interests and experience
- Teachers do not acknowledge students' capacity to engage with technologies at a high level.
- Teachers refer to and teach only traditional print literacies

Examples to illustrate the component:

- The exploration of ideas involves student collaboration on contemporary technology use including internet searching, multimedia presentation of findings, email communication and chat rooms etc.
- Students examine the language of SMS messaging and debate its impact on the future spelling of words
- Students explore the way in which language and images are manipulated to convey positive or negative messages in order to produce their own advertisement
- Students design and create their own video clip with a particular audience in mind and conduct a school survey to evaluate and analyse responses to the clip
- Students discuss the social purpose and identity issues related to chat room behaviour
- Students design a strategy for the communication of school events to staff, students, parents and the broader community.

4. Students are challenged and supported to develop deep levels of thinking and application

Students are challenged to explore, question and engage with significant ideas and practices, so that they move beyond superficial understandings to develop higher order, flexible thinking. To support this, teaching sequences should be sustained and responsive and explore ideas and practices.

4.1 Teaching sequences promote sustained learning that builds over time and emphasises connections between ideas.

This component involves running with ideas for sufficient time to examine and use them in depth. This applies to the way key ideas are built across a learning sequence, but might also mean having sufficient time in teaching sessions to properly examine ideas. Links are made across subject areas to demonstrate relevance and connectedness with what is being taught and how key ideas can apply to a range of situations.

This component is demonstrated by teachers:

- Allowing time for discussions to arise naturally and be followed in class to encourage the resolution of questions
- Extending consideration of key ideas over a number of teaching sessions, rather than starting with a new idea or context each teaching session
- Revisiting previous teaching sessions so that ideas explicitly build across a unit
- Recognising that skills, understandings, processes or practices currently being taught have relevance for other subject areas and drawing students' attention to such relevance
- Identifying a series of generic skills and processes (such as problem solving, creative thinking skills, metacognition, etc.) that can become areas of focus across the curriculum
- Relating current learning to work done in previous teaching sessions
- Fostering connections to life outside school
- Allowing activities to continue, where possible, while students are productively engaged
- Collaborating from time to time with teachers from different disciplines to explore different aspects of an idea or skill, or related ideas or skills over the same time period with shared students.

The component is NOT demonstrated when:

- Activities and discussions are discrete, with minimal links between them
- Teaching sessions are compartmentalised such that each covers a separate idea from a list
- Key understandings are covered without reference to, or exploration of, relationships with other subject areas, prior learnings and/or life outside school.

Examples to illustrate the component:

- A teaching session on the conditions on the Western Front during WWI is followed by students reading extracts from soldiers' diary entries and letters and matching the "first-hand" information found there with the main ideas from the previous teaching session. Students then record the main ideas from these two teaching sessions on an ongoing "mindmap" on WWI and make any links with previous sub-topics.
- In year 7 Maths, students spend three teaching sessions working in self-paced pairs on concrete tasks focusing on pattern and algebra, before the teacher works with the whole class to extrapolate some shared understandings and relate them to the development and use of formal algebraic notation.
- In Art, movements such as modernism, or surrealism, are related to writings about psychology and social theory generated during the same period.

- In SOSE, students are studying the history and culture of Ancient Greece. In the Arts, they are studying Greek art. In English they are reading Greek legends and in Maths they are studying mathematicians of ancient Greece.
- A cross-curricular team of teachers decide to highlight or focus on a particular skill (such as writing recounts or classifying attributes or developing evaluation criteria) over the course of a week or so.
- In language classes, students work on a unit of work on food or festivals, through which beliefs and values behind the customs are discussed, aiming to promote understanding and respect for various cultures and customs.
- Unresolved student questions are kept on a notice board and referred to as a unit progresses.
- Students investigate an issue in their local area and over time develop web pages devoted to this issue.

4.2 The teacher promotes substantive discussion of ideas.

This component involves the teacher providing opportunities for students to talk together, discuss, argue and express opinions and alternative points of view. 'Substantive' refers to a focus on significant ideas, practices or issues, that are meaningful to students, and that occur over a sufficient period of time to be effectively explored.

This component is demonstrated by teachers:

- Providing stimulus materials that challenge students' ideas and encourage discussion, speculation and ongoing exploration
- Encouraging students to raise questions or speculate or make suggestions
- Asking a high proportion of open ended questions
- Encouraging students to challenge, support or amplify others' contributions.

The component is NOT demonstrated when:

- Teacher questions are mainly closed, with a particular response in mind
- Investigations or projects are run without significant class discussion of the purpose or key ideas and approaches
- Class discussion is allowed to wander, without focus.
- Discussion is dominated by the teacher, who provides most of the input.

Examples to illustrate the component:

- In History and English classes students access information from a range of sources including the movie *Ned Kelly* and discuss whether Ned Kelly was a hero or a villain/criminal.
- In Mathematics, the teacher proposes an open problem and considers students' responses in turn, accepting all responses and inviting comment, until class agreement on the effectiveness of the different methods is reached.
- A science teacher gives each student a steel nail to put 'somewhere they think it will rust'. They bring their nails in the following week and report and speculate on what underlies the results, as the teacher or a student makes notes on the board.

4.3 The teacher emphasises the quality of learning with high expectations of achievement.

Teachers need to clearly signal an expectation that students will achieve at a high level and put in effort to produce quality work. This also involves teachers expressing and demonstrating confidence that students are capable of significant achievement. There is structured support to help students learn effectively so that this expectation does not occur in a vacuum.

The component is demonstrated by teachers:

- Using language that implies an expectation and a confidence that students will work effectively and achieve at a high level
- Praising efforts towards the production of quality work, and its achievement
- Providing support for students having difficulty on the basis that their work needs to improve to meet expectations
- Signalling clearly the standard to be achieved
- Not accepting work that is just 'good enough' and encouraging students to produce work at the standard they are capable of.

The component is not demonstrated when:

- The teacher implies by words or actions that some students are not expected to achieve
- Standards of achievement are not made clear
- All work is praised regardless of quality
- The teacher turns a 'blind eye' to students who are working at a lower level than they are capable of.

Examples to illustrate the component:

- In producing work for display, the technology teacher uses high standard work strategically to provide encouragement and support for all students to extend their expectations.
- A mathematics teacher focuses special attention on encouraging and scaffolding students who express lack of confidence in their mathematical ability.
- Technology students are asked to repeat work that is clearly not up to a standard of which they are capable.

4.4 The teacher uses strategies that challenge and support students to question and reflect.

This component involves the development of learning tasks designed to encourage and support students to move beyond their current understandings and think more deeply about ideas and practice. Teacher questions are open-ended and designed to promote depth and breadth of knowledge and understanding. Teachers emphasise engagement with ideas and practice through exploration.

This component is demonstrated by teachers:

- Introducing ideas by using interesting and challenging activities
- Using short, group-based challenging activities to raise questions
- Challenging students to reflect on their response to tasks
- Asking open questions calling for interpretive responses
- Posing questions and hypothetical situations to move students beyond superficial approaches
- Asking students to represent their understandings in a variety of ways
- Including frequent open ended problems and explorations
- Strategically building opportunities for students to develop hypotheses or speculative ideas and to extend and question interpretations.
- Focusing on the reasons for answers or steps in procedures as a vehicle for building understanding

- Encouraging students to see knowledge as a construction and to examine critically and even challenge information provided by the teacher, a textbook, a newspaper, etc.

The component is NOT demonstrated when:

- Classroom work is constrained or recipe like, without room for discussion or debate of purpose or methods
- Lesson plans contain too much material to allow sustained discussions in response to student questions
- Activities focus mainly on knowledge and comprehension
- Concepts are treated as ‘things to be learnt’, emphasising formal definitions
- Ideas are introduced formally without discussion or questioning
- Illustration and exploration of ideas occurs mainly through one source eg reference to text books.

Examples to illustrate the component:

- A mix of short term investigations and open-ended longitudinal projects are developed in consultation with students. For example, as part of Environmental Education, students consider and devise strategies for overcoming the school’s litter problem (enviro citizenship).
- Students learning about a traditional ceremony of a country are asked to investigate the values embedded within the ceremony and the connections to modern life.
- A puzzle activity is used in which students work in groups to manipulate a variety of shapes to explore area, before a discussion aimed at generating general rules that describe relationships between area and shape and perimeter.
- The classroom has a board containing questions or problems that have arisen during class discussion.

4.5 The teacher uses strategies to develop investigating and problem solving skills.

This component refers to higher order thinking skills that may be described in various ways, but encompass such things as interpretation, analysis, and application. It refers to the development of knowledge of ways of reasoning with evidence, particular to the discipline area. These skills and knowledge are needed to successfully solve problems.

This component is demonstrated by teachers:

- Using higher order thinking tools when planning activities to allow for multiple entry points and to develop higher order thinking skills such as synthesis, evaluation etc.
- Providing students with questions or challenges as the impetus for learning and encouraging and supporting students to construct their own responses to such questions
- Explicitly supporting students to develop the language and other representational tools (such as graphs, diagrams, reporting templates) needed to conduct investigations.
- Clarifying the purpose and context of investigations and problems.
- Setting learning challenges that require students to analyse, evaluate and create and that allow for student risk taking, decision-making and time-management
- Providing support and scaffolding for investigative or problem solving tasks through checklists, proformas, planning frameworks, teacher-student conferences, self-and peer assessment processes, etc.

The component is NOT demonstrated when:

- There is a strong focus on ensuring content coverage, as distinct from understanding

- Students are given a choice of activities but not given training in appropriate skills and knowledge
- Group commitment is not gained for ideas being developed
- Activities focus on having fun without regard to conceptual understandings or the deeper meanings of practice.

Examples to illustrate the component:

- Students evaluate the success of an advertising campaign seen on TV or heard on radio and then develop their own advertising campaign tailoring it for a target audience.
- A year 5 class raises the question about how long a ballpoint pen will last. They discuss how they can find out, then arrange a comparative investigation with different brands, measuring the length of line with appropriate controls.
- Students explore social and environmental issues from a range of perspectives, clarifying the nature and quality of evidence and the values underpinning each position
- While exploring the structures of government in various countries, students are asked to examine the cost of the American space program. They are asked whether or not they think this money would be better spent elsewhere and challenged to justify their opinions.
- A mathematics class explores potential solutions to the problem of students at the school needing to cross a busy road, collecting data on traffic flow and student location, and mathematically modelling different proposals.
- Students are provided with a variety of historical documents relevant to an issue reported in a contemporary magazine. They are asked to evaluate evidence for different interpretations of the event and its causes, to suggest strategies for resolving the issue involving the identification of key historical evidence, and to make judgments about the possibility of a definitive resolution.

4.6 The teacher uses strategies to foster imagination and creativity

There has been considerable recent attention paid to lateral and creative thinking, as part of 'higher order' thinking and a 'thinking oriented curriculum'. Many schools have made this a major focus of teaching and learning policy. There are a number of elements of 'creativity' including flexible and unusual thinking, and facility with generating ideas.

This component is demonstrated by teachers:

- Encouraging students to be discoverers, explorers and creators in a variety of ways
- Setting tasks that ask for a variety of solutions
- Using strategies such as brainstorming or the generation of lists to encourage flexible thinking
- Setting tasks that require unusual approaches or unusual juxtaposition of ideas or the importation of ideas from a variety of fields
- Setting extensions to tasks that favour lateral thinking or diverse applications.

The component is NOT demonstrated when:

- Tasks ask for a convergence of ideas on a single solution
- The teacher sets problems and projects for which the requirements and the outcomes are closely specified
- Opportunities for students to speculate and voice different ideas are minimal
- Every student is expected to produce the same (possibly high quality) result or outcome or artefact.
- A premium is placed on consolidation of skills or refinement of particular techniques and solution types, above the production of variety or the unusual.

Examples to illustrate the component:

- In exploring animal classification young students are asked to generate a list of features held in common by a whale and a butterfly.
- Tasks are set around a 'What would happen if ...?' format. For example, Physical Education students are asked to generate one change in the rules of football that will substantially affect aspects of the game, and to speculate on changes it would cause over time.
- Technology students are presented with a design brief to plan for a human colony on Mars.
- Mathematics students explore the potential patterns that might occur by varying rules for moving along a square grid according to a simple set of number sequences.
- Teams of students compete in a game that requires the generation of metaphors and similes with time constraints.

5. Assessment practices are an integral part of teaching and learning

Assessment contributes to planning at a number of levels. Monitoring of student learning is continuous and encompasses a variety of aspects of understanding and practice. Assessment criteria are explicit and feedback is designed to support students' further learning and encourage them to monitor and take responsibility for their own learning.

5.1 Assessment practices reflect the full range of learning program objectives.

This component involves teachers designing assessment tasks that require students to demonstrate knowledge and skills at many levels including lower order processes such as basic comprehension and higher order processes such as synthesis and evaluation. It involves the assessment of a variety of forms of knowledge and practice such as reasoning skills, values and orientations.

This component is demonstrated by teachers:

- Using a variety of methods to assess student understandings at various points in a unit, including open ended questioning, checklists, project work, problems, practical reports, role plays
- Assessing a range of types of understanding and practice, including knowledge of processes, conceptual ideas, the way the learning is used and practiced and different aspects of practice such as fluency, accuracy and capacity to innovate
- Ensuring assessment incorporates a range of levels of thinking (comprehension, analysis)
- Monitoring student perceptions and attitudes as well as knowledge and skills
- Using a variety of reporting modes for assessment, including project reports using posters, multimedia, or student presentations, end of unit tests, reports of investigations and responses to set problems.

The component is NOT demonstrated when:

- Assessment involves two or three types of task only and is mainly in written format (eg. worked problems, practical reports, end of unit test)
- Judgments are made on the basis of presentation, for instance on the layout of reports, rather than demonstration of the ability to extend ideas
- Assessment focuses mainly on low-level factual information and straightforward comprehension, with few opportunities for students to demonstrate application or synthesis of key ideas.

Examples to illustrate the component:

- Students keep reflective journals. Time is provided at the end of a session for teachers and students to reflect on progress, problems encountered and solved and to consider how things could be done differently or the same.
- A variety of assessment methods (summative and formative) is used to gauge understanding and to give students the opportunity to present their work/information in a variety of ways.
- Students present their understandings of the water cycle as a narrative, an annotated drawing, a role play etc.
- Rich assessment tasks are devised that are authentically embedded and are not seen as an 'add on.'
- A model of a goldfields mining device is used to assess research skills (reading), planning, constructing, testing, evaluating skills (Technology), presenting (Speaking and Listening) and Procedural Writing Skills (writing about how they went about the process).
- Students in Chinese language classes design appropriate questions for interviewing elderly Chinese people in Nursing Homes about the daily routines of elderly people.
- Students develop codes of conduct or appropriate sporting behaviour principles for their physical education classes.

5.2 The teacher ensures that students receive frequent constructive feedback that supports further learning.

Appropriate feedback has been found to be critically important in improving student outcomes. Feedback by its nature should be aimed at supporting the learning process, should be ongoing and timely, and provide advice on ways forward for students. Feedback can be provided by other students, or through community engagement.

This component is demonstrated by teachers:

- Providing feedback on tasks that challenges students to review, reflect on, and refine their understandings at various points in a learning sequence
- Giving timely feedback, acknowledging areas well handled and suggesting areas for improvement.
- Structuring feedback to support further learning
- Organising for feedback from a variety of audiences.

The component is NOT demonstrated when:

- Judgments about students' understandings are fed back only in formal, summative assessment situations without the opportunity for students to refine and develop understandings on the basis of such feedback.
- Little feedback is provided to assist students to understand why their responses were not rewarded (marked incorrect).

Examples to illustrate the component:

- Students share their reflections on what they are doing with a small group of class members at the end of the teaching session. The other students provide feedback and ask questions to clarify what has been learned.
- Through the teaching session, the teacher, when circulating, comments of the work in progress and provides additional assistance and clarification as necessary.
- Students participate in a community display. Feedback is provided during the planning phase by the teacher and by students with organisational responsibilities, and through responses from the public at the display.

5.3 The teacher makes assessment criteria explicit.

This component involves the encouraging the development of shared understanding of the assessment tasks.

This component is demonstrated by teachers:

- Providing an explicit list of learning outcomes at the outset of a unit of work
- Providing the criteria for assessing each outcome prior to students undertaking each assessment task
- Leading discussions with students in which the criteria appropriate for different levels of performance on tasks are generated and clarified
- Providing feedback to students concerning their performance in relation to explicit criteria.

The component is NOT demonstrated when:

- Assessment tasks are not included in documentation provided to students
- Assessment criteria are generated after a task is submitted
- Assessment is mainly based on scores on tests in which items are not constructed to represent clear criteria
- The type of items on tests has not been signalled to students and they have not had the opportunity to work at the competencies assessed.

Examples to illustrate the component:

- In year 9, SOSE students are set an analytical exercise on the global economy. The task sheet is accompanied by a self-assessment sheet using the same rubric that is to be used by the teacher to assess the exercise when it is completed. As well as explaining the task, the teacher worked through the rubric with the students clarifying any issues or misunderstandings.
- In a year 7 science class, before students begin an experiment, they are invited to brainstorm what an acceptable practical report would be like and what a better than acceptable and a less than acceptable practical report would be like. These three sets of descriptors then become the basis for peer and teacher assessments when the work is completed.
- At the end of a SOSE research assignment, the teacher invites each student to sit with him/her while the work is being assessed to provide immediate feedback and to allow the student to contribute their thoughts about what they had learned.

5.4. Assessment practices encourage reflection and self assessment.

This component involves the active involvement of students in the assessment process.

This component is demonstrated by teachers:

- Providing assessment instruments for self and peer monitoring
- Discussing the learning process explicitly with students
- Providing tools that make explicit for students their understandings
- Providing opportunities to review prior ideas and compare them with current understandings.

The component is NOT demonstrated when:

- Assessment is presented as the teacher's prerogative and there is little attempt to engage students in making judgments about their own learning
- The assessment criteria are hidden and/or arbitrary
- Assessment occurs infrequently and is not integrated into the learning process.

Examples to illustrate the component:

- Students are given the intended learning outcomes for a sequence and these are referred to frequently during the unit. At the end of the unit students assess how much they have learnt and which tasks contributed most to their learning
- Peer assessment and portfolio assessment are used to encourage students to think about their learning
- Students are provided with opportunities for self and peer assessment using a set of student /teacher negotiated criteria
- Students present their projects to the class after completing small group peer, and/or self-assessment.
- Students are encouraged to maintain a portfolio of assessable pieces of work. Whilst the portfolio would contain some compulsory whole class pieces, students could make decisions about other pieces to be included, such as a selection of writing.

5.5 The teacher uses evidence from assessment to inform planning and teaching.

This component requires the use of formative assessment to provide information for the teacher to adjust tasks and strategies to ensure that the teaching and learning program is responsive to student learning needs and builds on prior knowledge and skills. Teaching sequences and teaching strategies need to be sufficiently flexible to respond to information coming from both informal and formal assessment.

This component is demonstrated by teachers:

- Using a variety of methods to assess student understandings, at various points in a unit, including open ended questioning, checklists, project work, problems, practical reports, role plays
- Strategically monitoring student understandings by circulating during practical or project work and discussing this with individuals
- Probing student understandings and perspectives early in a learning sequence to help plan subsequent teaching sessions
- Reviewing understandings from previous teaching sessions before proceeding with work
- Monitoring constantly and strategically to determine how best to respond to the class.

The component is NOT demonstrated when:

- Lesson plans are strictly followed (perhaps because of time constraints) and unexpected difficulties in understanding are glossed over
- Units are planned without embedding opportunities to probe and respond to student understandings
- Student understandings are not informally monitored and responded to
- A lesson sequence continues despite evidence that many students have already achieved the target understandings.

Examples to illustrate the component:

- A language teacher, while marking students' work, discovers that most students haven't quite grasped the use of a particular sentence structure. He revises the teaching plan to incorporate more activities that would help to reinforce the structure.
- Student conceptions are probed early in a topic, to help plan subsequent tasks and activities:

- A set of activities are used as prompts at the beginning of a Year 7 unit on chemical science, which challenges students to explain gas behaviour in terms of a particle model. Their responses and questions are used to plan subsequent teaching sessions.
- A year 4 teacher arranges a collection of soil from various parts in the school ground, and after examination initiates a discussion about what differences were found, and what was noticed. This leads into a series of questions students ask about soil, and animals, which are then sorted and agreed by the class to form the basis of a set of further explorations of soil.
- A Year 7 Astronomy unit is changed drastically once it becomes clear, on the basis of diagnostic assessment, that students have covered much of the work in their primary school program. The teacher uses a discussion based around student knowledge and interest to generate a revised plan.
- The teacher constantly monitors student responses and adjusts strategies according to this:
 - A teacher stops a teaching session on heat when it becomes clear that most students in her class confuse heat and temperature, and believe that metal objects will have lower temperatures than wood, in the same room, judged by touch. She initiates a discussion, then a series of observations, to explore these ideas.
 - A teacher realises a substantial minority of students are misunderstanding the method being used in an experiment. He pulls the class together for a discussion, ensuring that a range of voices is heard that clarify the situation.

6. Learning connects strongly with communities and practice beyond the classroom

Student learning needs to connect with their current and future lives, and with contemporary thinking in the broader community. A variety of links are made between the classroom program and the local and broader community, leading to students developing a rich view of knowledge and practice, including social and ethical issues. This principle concerns relevance and connectedness, and also the communal nature of learning.

6.1 Students engage with contemporary knowledge and practice.

This component refers to the need to present ideas and their applications in a contemporary context. Conceptual and procedural understandings should be linked to their use in the community and by different professions. Contemporary understandings may of course be informed by consideration of their historical lineage.

This component is demonstrated by teachers:

- Providing the opportunity for students to experience the learning as it would be experienced and used by people in their professional lives
- Using industry, contemporary technologies, and everyday events and artefacts, as the context for learning
- Making links with stories reflecting the historical roots of the ideas
- Engaging with rich tasks that link the learning to a variety of aspects of real life
- Equipping students with skills for self-extending learning aimed at enabling them to keep pace with current trends and practices.

The component is NOT demonstrated when:

- Students are taught narrowly defined skills that are not self extending or transferable
- The classroom program focuses on formal aspects of the subject matter knowledge only.

- Ideas are taught without reference to contemporary application

Examples to illustrate the component:

- Students investigate alternative use of vacant land in their local area. They prepare feasibility studies and write reports which are presented to the local council for consideration.
- Students are given opportunities to grow and market produce from the school garden to gain insight into how businesses are run.
- A bulletin board is managed by students to display current news items relevant to the topic.
- During a unit on 'disease', current newspaper and magazine articles and current affairs TV programs are introduced to help shape and clarify the ideas and their relevance to contemporary personal and social issues.

6.2 The teacher plans for students to interact with local and broader communities.

This component emphasises the importance of the connectedness of schools to the community and society more generally. It promotes the idea of the porous classroom. 'Communities' would include the parent community of the school and the school community in general, local communities, which might provide speakers or be the target of community environmental or aesthetic projects, through to national, international and interest based (eg scientific) communities accessed through the internet, guest speakers and other forums.

This component is demonstrated by teachers:

- Linking the classroom with the community by arranging incursions or excursions to a variety of venues, including studies of the local environment, surveys in the local community and local industry visits.
- Basing sequences of work around local or global community projects, such as environmental maintenance or studies of local industries or social groups
- Using parents with special expertise to provide input or support in a topic
- Arranging links and collaboration with other schools and classrooms or professional institutions, through the internet
- Targeting individual students to take advantage of camps or conferences.

The component is NOT demonstrated when:

- Units of work are entirely bound within the walls of the classroom.
- Little or no use is made of the school ground or local neighbourhood for exploration of, for instance, plant reproduction and growth, discussions of structures and design of SOSE and civics investigative surveys.
- Excursions are not effectively integrated with the curriculum.
- Concerns of the local community (eg. environmental, or consumer based) are not raised, nor are the class's studies communicated to parents or the local community.

Examples to illustrate the component:

- Students are encouraged to develop a network of contacts within the school and wider community to access information and to solve problems
- Year 5/6 students interact with a local engineer in pursuing an integrated project focusing on the design and construction of a go cart for a state wide competition.
- Students are taught the skills to organise their own work experience placement
- Students participate in an Enterprise Education project to raise the notion and value of paid and unpaid work

- A Year 9 unit on motion involves a trip to the local fun park where students take measurements of the acceleration and speed of rides with data logging equipment. The students take the measurements back to school to analyse.
- Links outside the classroom might include:
 - Visiting speakers and practitioners
 - Online collaborative projects
 - Student projects that draw on community resources
 - Displays in local shopping centres
 - Entry of students into competitions
 - Reports in local newspapers
 - Family collaborative learning evenings
 - Excursions
 - Local environmental community action projects

6.3 The teacher uses technologies in ways that reflect professional and community practices

New technology challenges and changes the way we behave and learn in our contemporary society.. Learners need to develop a mastery of contemporary skills and techniques and their application through new media and new technologies. When used in ways that reflect their contemporary use, learning technologies can provide powerful stimulus for students to operate autonomously and develop expertise. Learners use a range of learning technologies to create new knowledge and understandings.

This component is demonstrated by teachers:

- Developing students' capabilities with generic software such as spreadsheets, design tools and communication technologies
- Using learning technologies to support quality learning behaviours such as exploration, conjecture, or collaboration
- Using ICT to increase student choice and flexibility with respect to their learning
- Having students collect information by electronic means such as data probes, digital cameras, video recording, digital displays
- Having students use the internet for information searching and to communicate with special interest groups
- Having students explore ideas and possibilities using simulation software
- Encouraging students to present results and publish reports using a range of software.

The component is NOT demonstrated when:

- Students are exposed to a limited range and uses of ICT
- Students are not educated or encouraged to make choices about what learning technologies they use or when and how they use them
- The use of computers does not encourage increased dialogue and questioning, but tends to isolate individuals within their tasks.
- Technologies are not used in ways that take advantage of their particular potential to support learning

Examples to illustrate the component:

Technologies are used to support:

- Varied ways of collecting data (data probes, databases, digital displays, video and digital cameras, DAT audio recorders, microscope with digital display)

- Varied methods for analysis (spreadsheets, graphical software, programmable calculators, purpose built data analysis software, video editing software) so that students can make choices.
- Mathematical modelling through the use of graphics calculators or spreadsheets and graphical packages.
- Interactive modelling, control, simulation and design (robotics, design and simulation software)
- Varied communication modes (email contact with other schools or special interest groups, the internet)
- Manipulating media (image and sound manipulation)
- Designing, creating and producing media (multimedia, graphics, film, animation, music and print production packages)
- A variety of modes of presentation, publication and distribution.