Productive Pedagogies
Classroom reflection manual

This booklet has been adapted from "guide to productive pedagogies: classroom reflection manual" The state of Queensland (Department of Education) 2002, which was adapted from the Classroom Observation Booklet by New Basics Branch and the Queensland School Reform Longitudinal Study (QSRLS) commissioned by Education Queensland
Productive Pedagogies

Productive Pedagogies' is a theoretical framework designed to enable teachers to reflect critically on their work and set up the teaching practice needed to enable students to learn how to think and think well. The pedagogies are the teacher's equivalents of student's habits of mind. The pedagogies are the things teachers should be doing in the classrooms if we want student's to be habitually thoughtful.

Teachers should use the Productive Pedagogies framework to:

- reflect on their current classroom practices
- critically reflect upon their work with colleagues
- identify what they do well and what they don't do so well
- evaluate their current teaching and assessment practices
- plan activities and lessons that will engage students in intellectually challenging learning that develops their thinking
- identify and design professional development opportunities for themselves
- develop a shared professional language and framework for understanding teaching and learning within and between departments
- setting up research or action learning projects

This manual describes each of the Productive Pedagogies, including a continuum of practice from no achievement to achievement with excellence and examples of how the pedagogies may be applied.
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We believe that if we want students to be good thinkers, we have to require high intellectual quality from them. We want to ensure that students manipulate information and ideas in ways which transform their import and implications and lead to students creating understanding and meaning for themselves. We want students to coherently communicate ideas, concepts, arguments and explanations with rich detail. We want all students to work on tasks which require high intellectual quality.
Higher-order thinking
Are students using higher-order thinking operations in their learning?

Explanation
Higher-order thinking by students involves the transformation of information and ideas. This transformation occurs when students combine facts and ideas and synthesise, generalise, explain, hypothesise or arrive at some conclusion or interpretation. Manipulating information and ideas through these processes allows students to solve problems, gain understanding and discover new meanings. When students engage in the construction of knowledge, an element of uncertainty is introduced into the instructional process and the outcomes are not always predictable; in other words, the teacher is not certain what the students will produce. In helping students become producers of knowledge, the teacher's main instructional task is to create activities or environments that allow them opportunities to engage in higher-order thinking.

Lower-order thinking occurs when students are asked to receive or recite factual information or to employ rules and algorithms through repetitive routines. Students are given prespecified knowledge ranging from simple facts and information to more complex concepts. Such knowledge is conveyed to students through a reading, work sheet, lecture or other direct instructional medium. The instructional process is to simply transmit knowledge or practise procedural routines. Students are in a similar role when they are reciting previously acquired knowledge: for example responding to test-type questions. More complex activities may still involve reproducing knowledge if students are required to follow only predetermined steps and routines, or employ algorithms in a rote fashion.

Example
The topic of a Year 2 Maths lesson was classification and grouping generally, and more specifically set theory. The teacher brought in a range of diverse objects. Students, in groups, had to categorise the objects according to criteria that they determined themselves.

At the end of that part of the lesson, the groups rotated around the classroom and in groups suggested the basis of each classification. The teacher then gave two hula-hoops to each group and asked them to place the objects into overlapping sets, so that objects in the overlapping or intersection set had characteristics in common with the objects within each of the hoops. The groups did this and again rotated and discussed the basis of the classification.

The basis of the classification could be, for example, that the objects were all yellow, or all dirty, or all cubes. Students simply had to articulate reasons and justify their classifications. The lesson concluded with the teacher making comments regarding the use of symbolic representations in Maths.

Continuum of practice

<table>
<thead>
<tr>
<th>Students are engaged only in lower-order thinking: i.e. they receive, or recite, or participate in routine practice. In no activities during the lesson do students go beyond simple reproduction of knowledge.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students are primarily engaged in routine lower-order thinking for a good share of the lesson. There is at least one significant question or activity in which some students perform some higher-order thinking.</td>
</tr>
<tr>
<td>Almost all students, almost all of the time, are engaged in higher-order thinking.</td>
</tr>
</tbody>
</table>

Intellectual quality 2
Deep knowledge and understanding

Does the work and responses of the students demonstrate depth, detail or level of specificity of concepts or ideas?

Explanation

Students develop *deep understanding* when they grapple with the central ideas of a topic or discipline, which are judged to be crucial to it, and grasp the relatively complex relationships between these ideas. Instead of being able to recite only fragmented pieces of information, they understand the topic in a relatively systematic, integrated or holistic way. As a result of their deep understanding, they produce new knowledge by discovering relationships, solving problems, constructing explanations and drawing conclusions.

Students have only shallow, thin or *superficial understanding* when they do not or cannot use knowledge to make clear distinctions, present arguments, solve problems or develop more complex understanding of other related phenomena. Students have only grasped knowledge that is not connected with significant concepts or central ideas of a topic or discipline, and is dealt with only in an algorithmic or procedural fashion. Understanding is also shallow when important, central ideas have been trivialised by the teacher or students, or when it is presented as non-problematic. This superficiality can be due, in part, to instructional strategies: for example when a teacher covers large numbers of fragmented ideas and bits of information that are unconnected to other knowledge.

Example

Year 11 Science students were nearing the completion of an extensive study of the ecosystem of their town's river. The students had participated in many in-class and fieldwork activities, such as using classification systems, monitoring water quality and studying the impacts of flooding and industry along the river, with the aim of making the students 'experts' on the ecosystem of their local river.

The students were asked to apply this deep understanding to the task of designing a creature adapted to the conditions of the river ecosystem. They were required to draw the creature and describe its physical and behavioural adaptations. To do this, the students needed to have a thorough knowledge of the topic.

Continuum of practice

Understanding is very deep because almost all students do at least one of the following: sustain a focus on a significant topic; demonstrate their understanding of the problematic nature of information and/or ideas; demonstrate complex understanding by arriving at a reasoned, supported conclusion; explain how they solved a complex problem. In general, students' reasoning, explanations and arguments demonstrate fullness and complexity of understanding.

Students' deep understanding is uneven; i.e. deep knowledge of some aspects, by some students is countered by superficial understanding of others - by either the same students or others. At least one significant idea may be understood in depth, but in general the focus is not sustained.

Almost all of the lesson's content knowledge is very thin because it does not deal with significant topics or ideas. Almost all students demonstrate understanding of simple information that they are to remember.
Supportive classroom environment

We believe that quality thinking and learning can only come from students when they are provided with a supportive classroom environment. We want to ensure that students influence the nature of the activities they undertake, engage seriously in their study, regulate their behaviour, and know of the explicit criteria and high expectations of what they are to achieve.
Student direction

Do students determine specific activities or outcomes of the lesson?

Explanation

Student direction means that students influence the specific activities or tasks they will do in a lesson, or how they will undertake them. Such activities are likely to be student-centred ones such as group work, or individual research or investigative projects.

A low level of student direction is exhibited where the teacher, or some other educational or institutional authority, explicitly determines what activities students do, and hence how they will meet the specified objectives of the lesson. The teacher and/or external authority decides on the appropriateness of any particular activity for meeting these criteria, and the students themselves have little or no influence.

Example

A number of teachers were concerned about the engagement of Year 8 students with the academic curriculum of the school.

A group of four teachers (a Social Science teacher, an English teacher, a Maths teacher and a Science teacher), with the support of the school administration, decided to embark on an innovative program to address this issue. Central to the philosophy behind this innovation was a commitment to student direction of activities.

When Year 8 students entered the high school at the beginning of the year they were presented with two questions: 'What do you want to learn about yourself?' and 'What do you want to learn about the world?' These questions served as the basis of the Year 8 curriculum and throughout the year, the students were involved in the determination of both the content and the activities.

The project proved most successful in changing teaching styles and engaging the students in productive learning.

Continuum of practice

Teacher makes initial selection of activity, but students exercise some control through a choice of alternative activities prescribed by the teacher in addition to procedural choice.

Students determine the activity, its appropriateness and context. This may be either independent of, or dependent on, teacher regulation.

There is no student direction. All activities for the lesson are explicitly designated by the teacher for the students.
Social support

Is the classroom characterised by an atmosphere of mutual respect and support between teacher and students, and among students?

Explanation

Social support is present in classes where the teacher supports students by conveying high expectations for them all. These expectations include the following: (a) that it is necessary to take risks and try hard to master challenging academic work; (b) that all members of the class can learn important knowledge and skills; and (c) that a climate of mutual respect among all members of the class contributes to achievement by all. Mutual respect means that students with less skill or proficiency in a subject are treated in ways that continue to encourage them and make their presence valued. If disagreement or conflict develops in the classroom, the teacher helps students resolve it in a constructive way for all concerned.

A lack of social support is evident when the behaviour, comments and actions of the teacher or students discourage effort, participation, and taking risks to learn or express one's views. For example, comments from a teacher or another student that belittle a student's answer, or efforts by some students to prevent others from taking an assignment seriously, will undermine support for achievement. Even when no such overt acts occur, there can still be a lack of social support in a class if the overall atmosphere is negative as a result of previous behaviour. Note also that token acknowledgment by a teacher of students' actions or does responses not constitute evidence of social support.

Example

In a Year 12 Art class, students were in the closing stages of work on a self-directed, themed, multimedia project which formed part of their major assessment for the year. The work in progress was permanently displayed in the classroom.

At the beginning of the lesson the students made quick charcoal sketches relating to the theme of their major work. The students then rotated around these quick warm-up sketches and added a quick sketch of their own. When the warm-up sketching was finished, the students were invited to move freely about the room making observations and comments on each other's work. The students and the teacher all made thoughtful comments on the work, not only providing positive feedback but also making relevant suggestions for improvement.

As this lesson progressed the students frequently asked the teacher and other students for feedback on their work. Not only was the teacher supportive, but the students also supported and encouraged each other in the development of their project. Furthermore, this activity encouraged students to take risks by seeking and providing comments that could contribute to the improvement of their project.

Continuum of practice

Social support is strong; the class is characterised by high expectations, challenging work, strong effort, mutual respect and assistance in achievement for all students. Both teacher and students demonstrate a number of these attitudes by soliciting and welcoming contributions from all students who are expected to put forth their best efforts.

Social support is neutral or mildly positive. Evidence may be mainly in the form of verbal approval from the teacher for student effort and work. However, such support tends to be given to those who are already taking initiative in class, rather than those who are reluctant participants or less articulate or skilled in the subject, or given in compensation for negative peer social interaction.

Social support is negative; actions/comments by teacher or students result in 'put-downs'; classroom atmosphere is negative.
Academic engagement

Are students engaged and on-task during the lesson?

Explanation

Students demonstrate academic engagement when they are attentive and do the assigned work. They show enthusiasm for their work by raising questions, contributing to group activities and helping peers.

Disengagement is evident when students are bored or make little effort. Students who are academically disengaged may daydream or even sleep in class, talk to peers about non-class matters, make a noise or otherwise disrupt the class.

Example

Some Year 10 students were engaged in writing CD reviews. The students had each chosen a CD to review, with the selections ranging from country music (e.g. Garth Brooks) to pop music (e.g. Backstreet Boys). All of these selections were valued and accepted by the teachers and class members.

The students studied music reviews from a variety of sources such as magazines, newspapers and the Internet. Through discussion as a class and in small groups, the teacher and students developed a set of criteria for the CD reviews. Nearly all the students were highly engaged and focused throughout this activity.

The students demonstrated engagement with this activity through enthusiastic discussion and questioning, both as they developed the review criteria and in the ensuing drafting of the CD reviews.

Continuum of practice

Almost all students are deeply involved, almost all of the time, in pursuing the substance of the lesson.

Sporadic or episodic engagement: most students either appear indifferent or are only occasionally active in carrying out assigned activities, but very few students are clearly off-task.

Disruptive disengagement: students are frequently off-task, with gross inattention or serious disruptions by many. This is the central characteristic during much of the class.
Explicit quality performance criteria
Are the criteria for judging the range of student performance made explicit?

Explanation

Explicit quality performance criteria are frequent, detailed and specific statements about what the students are to do and to achieve. This may involve overall statements regarding tasks or assignments, or about performance at different stages in a lesson.

There may, on the other hand, be an absence of written or spoken reference to requirements, benchmarks, or levels of acceptable performance expected of students. In this situation the performance criteria are implicit. This may be a deliberate strategy for students to discover or construct their own outcomes, rather than indicating neglect.

Example

In a Year 9 English class the students worked in teams to create school newspapers. The students were allocated clearly defined roles such as editor, subeditor, reporter and photographer. Each role required familiarity with a particular writing style: for example news reports, comment pieces and editorials. The newsworthiness of photographs and cartoons was also assessed. As well as working in their allocated role, all students were expected to subedit material written for the paper, and were therefore involved in a number of drafting and redrafting exchanges.

Access to numerous actual newspapers provided a ready supply of benchmarks against which students could evaluate their own work. The cyclic nature of the writing and subediting process repeatedly reinforced what counts as high-quality performance. The teacher, on a regular basis, also drew the students' attention to the structural features of the genre of each written piece.

Continuum of practice
Self-regulation

Is the direction of student behaviour implicit and self-regulatory?

Explanation

Teachers who exert high implicit control rarely have to make explicit statements to discipline students (e.g. 'You're not being good today', or 'Put your pens away'), or to regulate students' movements and dispositions (e.g. 'Sit down', 'Stop talking', 'Eyes this way' or 'Pay attention').

Teachers who exert low implicit control have to devote a substantial amount of verbal work to disciplining students and regulating their movement.

Example

A year 7 Social Studies teacher wrote two letters about an event that might have occurred in the classroom the day before. One letter was written from the perspective of the teacher, and the other from the perspective of a student. The views presented were largely divergent around the same event.

The teacher very cleverly and creatively utilised discussion about these two letters to pursue the issue of evidence in historical research and writing. Extensive discussion followed and many issues raised, including power and the production of knowledge, the nature of truth, the creation of historical narratives and the use of historical sources.

One of the striking features of this lesson was the studious and enthusiastic way in which the students engaged in the activity. Because of its perceived relevance they were eager to pursue the discussion and monitored their own behaviour and that of their peers. This ensured a range of contributions from some of the less vocal students.

Continuum of practice

There is virtually no teacher talk focusing on student behaviour or movement. The lesson proceeds without interruption.

Teachers must regulate students' behaviour several times during a lesson, perhaps focusing on specific groups or individuals who are out of control. However, the lesson proceeds coherently.

Teachers devote over half of their classroom talk to issuing orders, commands and injunctions, and punishments to regulate student behaviour, movement and disposition. It appears that more time and effort is devoted to control than to teaching and learning.
Learning how to learn

Do students understand how they learn and use this self-knowledge to help them learn and study effectively?

Explanation

Students show they know how to learn when they use successful strategies for learning and unlocking their natural potential. They have a flexible range of strategies to help them understand, take notes, study and memorise. They understand how their brain works, how learning occurs and the best ways to help themselves learn.

Students show they have not learned how to learn when they persist in using strategies for learning that are ineffective. They tend to try to learn using only, reading out loud and taking notes by writing down text word-for-word. How their brain works and how learning occurs is a mystery for them.

Example

A year 5 class was learning their times-tables. The teacher decided to combine this with a study of how people manage to memorise information. The class researched different mnemonic strategies and how the memory worked. The class split into groups. Each group chose a different mnemonic strategy (reciting, visual associations, diagrams, finding patterns) which they applied to the task of memorising times-tables they did not know. After one week the class measured how much more of the times-tables they were able to remember and compared the effectiveness of the different strategies.

Continuum of practice

All students are aware of how they learn and they have a variety of strategies that they always use to make their personal learning effective. They only use a combination of rote learning and learning for understanding to assist them to master what they are learning.

Students have some awareness of how they learn and apply this. Some students, some of the time, use different strategies to help them learn. They don't rely on rote memorisation, but use strategies that involve understanding and deep processing of what they are learning.

Students do not consider how they learn or which strategies would make their personal learning more effective. Students just copy down ideas and text and recite what they have written to study.
Connectedness

To create thoughtful students, we believe we must engage them in learning that is seen to be relevant to them. We want to ensure that students engage with real, practical or hypothetical problems which connect to the world beyond the classroom, which are not restricted by subject boundaries and which are linked to their prior knowledge.
Knowledge integration

Does the lesson integrate a range of subject areas?

Explanation

*Integrated school knowledge* is identifiable when either (a) explicit attempts are made to connect two or more sets of subject area knowledge, or (b) no boundaries between subject areas are readily seen. Topics or problems that either require knowledge from multiple areas, or do not have their basis in any clear subject areas in the first place, are indicators of curricula that integrate knowledge from a variety of school subjects.

*Non-integrated school knowledge* is typically segregated or divided in such a way that specific sets of knowledge and skills are (relatively) unique and discrete for each specified school subject area. Segregated knowledge is identified by clear boundaries between subject areas. The less evident the connections are between knowledge in different segregated subject areas, the stronger are the boundaries between them. In the extreme, such boundaries prevent any interconnection between different subject areas.

Example

Growing enrolments at a high school necessitated increasing the number of houses by two for various inter-house sporting events. To accommodate this change, two extra lanes had to be marked on the running track in time for the school athletics carnival. This prompted a group of Year 8 teachers from different disciplines to work together on an integrated unit with a single group of students.

A Health and Physical Education teacher worked with the students to design the new track and athletics field so that it would accommodate the extra competitors. Extra areas had to be allocated for the new house groups, for more marshalling space, and for specialised events such as discus and long jump. A Maths teacher worked with her class to determine the actual lengths of the new tracks and the position of the starting blocks for events over various distances. An English teacher worked with his class to draw up programs, advertising material, results lists and signage. A Computer Studies teacher worked with her class to construct a website for the carnival and keep this website up-to-date.

In this example, integration occurred around a common topic while the subject boundaries remained intact.

Continuum of practice
Background knowledge
Are links with students' background knowledge made explicit?

Explanation

*High-connection* lessons provide students with opportunities to make connections between their own background knowledge and experience and the topics, skills and competencies they are studying and acquiring. Their background knowledge and world view may be derived from personal experience of their community and local area, from their linguistic and cultural heritage, and/or from the media and popular culture.

*Low-connection* lessons introduce new content, skills and competencies without any direct or explicit exploration of any prior knowledge students may have of the topic. Neither do these lessons attempt to provide key background knowledge that might enhance students' comprehension and understanding of the 'new' material offered.

Example

Year 7 students were asked to create the ideal country. They were asked to consider what elements compose a country. After brainstorming ideas they formed groups in which they had to reach consensus in justifying choices of resources, geographical features, industrial infrastructure, government, industry and cultural composition, customs and laws. Students drew heavily on their own background knowledge and experiences in making choices and justifying decisions to the rest of the group.

Continuum of practice

Students' background knowledge and experiences are consistently incorporated into the lesson, which shunts back and forth between known material and new material. At least some connection is made to out-of-school background knowledge.

Initial reference or solicitation is made by the teacher to background knowledge and experience. At least some connection is made to out-of-school background knowledge.

No reference is made to background knowledge, such as students' community and cultural knowledge or school knowledge covered in previous studies, other subjects and lessons.
Connectedness to the world

Is the lesson, activity or task connected to competencies or concerns beyond the classroom?

Explanation

Connectedness describes the extent to which the lesson has value and meaning beyond the instructional context, making a connection to the wider social context within which students live.

Two areas in which students' work can exhibit some degree of connectedness are: (a) real-world public problems or (b) students' personal experiences. Students might confront an actual contemporary issue or problem, such as preparing a report on homeless people to the local council by applying statistical analysis; or the lesson might focus directly on, or build upon, students' own experiences or situations. A high level of connectedness can be achieved when the lesson entails one or both of these approaches.

A lesson with low connectedness has little or no value beyond the classroom; activities are deemed important when success is achieved only within the school context and for no other aspects of life. Students' work has no impact on others and serves only to certify their level of competence or compliance with the norms and routines of formal schooling.

Example

A Year 10 English class was provided with the opportunity to conduct an independent unit of work. The only requirement was that the students had to provide a written product and present their project to the class.

The criteria for the unit were decided in collaboration with the students. Some of the topics the students covered in this class were 'How to do a PowerPoint presentation', 'How to maintain a bicycle', 'How to do sign language', 'How to take good photographs' and 'How to do Japanese cooking'.

In each case the students saw the topics as having value outside the class. There was a suggestion, for example, that the students learning how to do PowerPoint presentations would be able to conduct in-service training for some of the staff. The students learning sign language suggested a number of uses to which they wanted to put their newfound skills. And the two students who were creating a manual on how to maintain a bicycle were discussing ways in which they could market their booklet in the community.

Continuum of practice

Students study or work on a topic, problem or issue that the teacher and students see as connected to their personal experience or actual contemporary public situations. Students recognise the connections between classroom knowledge and situations outside the classroom. They explore these connections in ways that create personal meaning and significance for the knowledge. This meaning and significance is strong enough to lead students to become involved in an effort to affect or influence a larger audience beyond their classroom in one of the following ways: by communicating knowledge to others (including within the school); by advocating solutions to social problems that provide assistance to people; or by creating performance or products with utilitarian or aesthetic value.

Lesson topic and activities have no clear connection to anything beyond itself; the teacher offers no justification beyond the need to perform well in class.
Problem-based curriculum

Is there a focus on identifying and solving intellectual and/or real-world problems?

Explanation

A problem-based curriculum is one in which students are presented with specific practical, real or hypothetical problems (or sets of problems) to solve. Problems are defined as having no single correct solution, requiring the construction of knowledge by the students, and requiring sustained attention beyond a single lesson.

Problem-based curriculum is not evident when students are presented with a large body of facts and recall is expected with only one given answer accepted as correct.

Example

A Year 8 Health and Physical Education teacher was working with the class on a unit about building a raft. Teacher-directed discussion and negotiation ensued about what skills the students would need to build the raft, and what outcomes they wanted from the exercise.

The students decided that one skill they needed to learn was how to work effectively in groups. In response to this, the teacher had the students play a game in the gym where they were allowed to throw balls in all directions, with the aim of keeping the balls constantly in motion. There was frenetic movement of balls around the class. The teacher stopped the game and asked how it could be modified to work more effectively. There was extensive discussion about rules. Much of this discussion was extended to take in questions about rules in society – who created them, why, whether they were able to be negotiated, whether everyone had the same opportunity to create the rules, and so on.

The game then continued under different sets of rules. The students themselves constructed the rules, argued why they were appropriate and looked at their effects. This one lesson was treated not as an isolated incident, but as focusing on the development of a skill needed for solving the larger problem.

This teacher conducted a number of other interesting lessons, all of them directed towards the problem of constructing a raft. All of the lessons were designed to build upon the skills and knowledge perceived by the students and the teacher as necessary to solve this larger problem.

Continuum of practice
Ethics and Values

Do students understand the ethical implications of what they learn and can they make sound judgements related to ethics and values?

Explanation

*Ethics and values* are evident in a classroom when students consider issues relating to right and wrong, good and bad, fair and unfair. They are able to engage in ethical reasoning and are thoughtful in making ethical judgements. They are aware of different ethical perspectives (consequentialism, virtue ethics, rights) and apply these to make sound ethical judgements.

Ethics and values are not evident when students do not consider the ethical implications of what they are learning and are unaware of how to make a sound ethical judgement. They tend to be unconscious to ethical problems and believe ethics just means that if someone thinks something is right, then it is right for them to do this.

Example

A year 12 maths class is studying statistics. They focus on means, medians, modes and graphs of these. They also began to consider how they could make the statistical information they are presenting appear to be different by using different graphs and presentations of means, medians or modes of the information. They considered the ethical implications of different statistical presentations and what would count as a completely accurate, unbiased presentation. They also considered whether statisticians had an obligation to present information in as clear and unbiased manner as possible, regardless of who is paying them.

Continuum of practice
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