“When it’s my idea”: Student Centred and Independent Learning

Oodnadatta Aboriginal School

Oodnadatta is located in South Australia, about 900km north of Adelaide and has a population of around 270 people. It is on the western edge of the Simpson Desert and is surrounded by pastoral cattle stations. It is claimed that Oodnadatta is the ‘driest town in the driest state of the driest continent’. It is also a very hot place with the highest reliably measured maximum temperature in Australia recorded in Oodnadatta at 50.7°C. The traditional custodians of the Oodnadatta region are the Arabana people and the name Oodnadatta is derived from the word ‘utnadada’ from the local Arrernte Indigenous language, meaning ‘mulga blossom’.

The famous ‘Oodnadatta Track’ begins 660km north of Adelaide at Marree and passes through Oodnadatta, ending at Alice Springs. This track was once a very important Aboriginal trading route where cultural ceremonies and trading with other Indigenous groups took place. This travel was made possible by the sequence of artesian bore mound springs, known as the ‘String of Springs’. The Great Artesian Basin feeds these springs which also made...
Defining Success

Oodnadatta Aboriginal School has been focusing on high expectations of learners and learning and to build independence in learning. As a small school, there is considerable diversity within any class. The school has four classes for a birth to year 12 school. This is particularly in the case of the secondary school where the whole of the secondary school is one class. Students negotiate goals with teachers and then work is developed in partnership with the students and teacher. One of the clear measures of success is the number of students who have successfully completed SACE (South Australian Certificate of Education). In the past year, all five students have gained their SACE and have passed the xx mathematics course with one student achieving an A in the course. The programs built in the previous years – both mathematics and independence in learning – have helped to build this senior success. Many of the 2016 students are aiming to attend university, including one who aspires to be in the area of finance. This success is a testament to the levels of mathematics being taught and the independence in learning strategy adopted across the school.

it possible for the first European, John McDouall Stuart to cross Australia from south to north in 1862. In the 1880s, this route was used extensively by camel trains, driven by Afghani cameleers. These cameleers were brought to Australia specifically to assist with the transport of goods into Central Australia for use by the early settlers. Oodnadatta became the terminus of the Great Northern Railway in 1890. The train service on this line was named the Ghan to honour the Afghan cameleers. Many of the camels were left to run wild when the train line opened and tens of thousands of these camels survive in the outback today. The rail line through Oodnadatta was closed in 1981 and was replaced by another line to the west which bypasses the town. The old Ghan railway station now contains a museum. Nowadays the Oodnadatta track is well known as the gateway to iconic Australian landmarks such as Lake Eyre and the Simpson Desert.

The Oodnadatta Aboriginal School learning community is built on trust and respect. A strong belief is that education is the cornerstone of the future and teaching and learning are a lifelong process. High expectations are set for all staff and students. The school aims to provide a balanced curriculum and has developed a specific literacy and numeracy plan and individual learning plans are in place for each student. Positive relationships with students provide the foundation for planning, teaching and learning. Student attendance and participation is a priority and parents and caregivers are encouraged to participate in a number of class based activities. The school is air conditioned and features a large swimming pool, playground equipment, a creche that provides school hours care for children between the ages of 0 and 5 years, a well-appointed library, tech studies shed, large grassed oval, paved quadrangle and a flood lit basketball court for night games. Students are proud of their sporting prowess and actively engage in sporting activities.
A Culture of High Expectations

Oodnadatta Aboriginal School has been building a culture of high expectations across many years. The high expectations are of both teachers and students. Student data are benchmarked against ‘leafy-green’ schools so that there is high standard against which to compare results. This helps to push teachers to raise expectations (and outcomes) of students. Building the high expectations across the school has been a prolonged process that has taken many years to develop. The culture-building exercise also has spanned the terms of two principals – both of whom have supported the high expectations of learners and learning. Both principals have promoted the same culture at the school, the first principal undertook extensive negotiations with community to develop a culture that the community wanted and the second principal has continued with the practices of the school and refined them. This process has meant that the community has a culture that they value which has been progressively built and fine-tuned over time.
Working with Community to Build the School Culture

Having a culture such as that at Oodnadatta Aboriginal School has required the leadership team to work with the local community so as to have input, support and an understanding of what the school is trying to achieve. To achieve this goal, the principal/s worked closely with community people. This was achieved through meeting with local people on site, in the community and mainly one-on-one (as opposed to community meetings per se). By approaching community people individually (or in small groups), the view of all people were sought. This helped to ensure a good representation of the community as a whole. Through this consultative process, the community has consistently grown in its support of the school so that this is now a very viable and positive relationship.

Stability in both staff and leadership has been instrumental in building and maintaining the school culture. Having a leadership team that has continued with the same program over two successive leaders has meant that the community has observed stability in both programs and staffing. Similarly, the culture of the school has been very supportive, collegial and valued by both teachers and community, making it a positive place to work. This has meant that teachers tend to stay at the school for long periods of time. This has been an important factor in the sustainability of the programs as well as the partnerships with the community.
Across the school, teachers have focused on building independence in learning. Students are expected to work on their own, either on set work or projects that they have chosen. The practice in the primary years has been to develop independence in learning through reducing reliance on the teacher, working in groups and seeking support from peers prior to seeking teacher help. Resources are made that also act as prompts to help students so that they refer to these resources prior to seeking teacher or peer support.

In the secondary classroom, the students negotiate with the teacher their goals, aspirations and programs. Once their course of study has been established, students are encouraged not to seek teacher help but to employ other strategies prior to seeking advice from the teacher. Students can ask peers for support, refer to resources, look up information on the web, refer to references available within the classroom or school library. Supporting each other through group work is actively promoted. It is seen that the independent learning skills are a valued lifelong learning attribute for the students that will serve them well at school as well as in their future lives out of school.

A focus of the work of the teachers at Oodnadatta Aboriginal School has been to build strategies for engaging learners in their learning. Through engagement strategies, students are maximising their learning. On-going staff discussions are helping staff to refine their understandings of “engagement” as a construct and finding ways to enhance and build better engagement for the students. One of the key strategies for engagement of learners was the personalisation of learning. Each student, or group of students, identify areas of personal interest and then build investigations into those areas of interest. The teacher/s work closely with the students as they establish the parameters and knowledge needs for the investigation. Students then undertake the investigations either individually or as a small group.

As a key part of the mathematics program, the investigation by inquiry approach is used where ‘non-googlable’ questions form the basis of the inquiry. The questions posed to students are those that engage the learners in a significant problem that cannot simply be solved by using a simple search tool. The investigation may require many steps and lines of inquiry to be undertaken to solve the task or work through the processes needed to develop the end product.
Growth Mind Sets

Oodnadatta has taken on board the notion of growth mindsets. Through adoption of this notion, students develop better understandings of themselves as learners. Explicitly teaching students that mistakes are a positive thing from which to learn means students are more inclined to take risks than previously. This is an important process in coming to learn mathematics. There is explicit teaching that there is no shame in making a mistake, and that a mistake is a learning opportunity. This approach represents a significant shift in how students think of mistakes.

Lesson Structure

Each mathematics lesson in the upper primary has a similar structure. In this structure, there is a session to build number fluency, and then a session for priming students for learning. The final part of the lesson is personal mathematics where the students undertake project work that is of interest to them. There is no standard lesson planning model across the school due to the considerable variation in each grade. However, each classroom seeks to develop lessons that will build the independence in the learners.

In the classrooms observed, it was clear that students have developed a sense of taking responsibility for their learning and remained on task, even with the teacher not in direct contact with the class or group. The diversity within the secondary school class where all year levels were present (Years 8-12) and where some students were working on SACE projects, while others were working on lower years, the students were all on task and working on their projects. Similarly in the primary years where all years of primary were present, students displayed high levels of autonomy commensurate with their grade levels.
“When it’s my idea”: Independent Project Work

As a key part of the teaching approach across Oodnadatta Aboriginal School, students undertake project work. The projects are identified by the students (in consultation with the teacher/s) and then form a part of their learning. Teachers work with the students, usually individually, to ascertain their interests and what they would like to learn about in mathematics. These discussions are then the catalyst for the building of the projects. Once a topic has been identified, then students work autonomously to create their projects. They rely on their search techniques and background knowledge to create the outcomes that they desire. In the process of creating their project, students come to learn key concepts in mathematics (and other curriculum areas).

One student, for example, in the middle/upper primary was very keen to have her own shop set up in the class. She created price lists, labelled packages, and created a space in the classroom for the shop which was complete with shopping baskets, money, scales, goods etc. Students from the younger classes would come to the shop with baskets and purchase items using play money that looked similar to real money. Goods were weighed (such as playdough that had been made into various shapes to look like fruits etc.) and then entered into a calculator. The items were added up then the younger students had to pay for the goods, and correct change was tendered. The project helped students to develop financial skills as well as confidence. There were personal negotiation skills needed as in the initial start-up of the project, particularly when the owner of the shop project was reluctant to let go of her items, but the social support provided by the teachers and support staff helped her to develop the personal (as well as mathematical) skills to enable a successful shop to operate.

In another example, students in the upper primary were keen to learn about GST, tax and discounts. Following on from a financial unit, the students discussed terms that they had heard about but did not understand with the teacher. This formed the basis of another personal maths activity via the project work. Students discussed with the teacher their interest in a topic – in this case their desire to better understand the financial system. This became the basis for a unit of work that was generated from student interest.

The project work is identified in consultation with the teachers and students. Support is provided on a needs basis, but the students are expected to work through the investigations in ways that reflect their learning and growth in understandings.
Real-time Learning

As a small contained community, there is considerable trust that is developed within the school. Older students take younger students to the local roadhouse where they are able to purchase food and other goods. The transactions that occur at the roadhouse help students to build fluency with money as they pay for items purchased. Older students support the transactions and then return the students to the school. This provides a real context for learning while supporting the younger students to learn the application of mathematics to real contexts. It also builds the expectations (and trust) in older students to support younger students both in mathematics and overall care.

Self-appraisal Assessments

Students were involved in negotiating their achievements. In a program purchased by the schools, teachers are able to enter student learning outcomes (as per the national curriculum) into an on-line or paper version. Students sit with the teacher and then talk through what they do know and their confidence with that concept. In this process, the students become aware of what they do know as well as what they still need to know.
Change is a Slow Process

The changes that have taken place at Oodnadatta have been over an extended period of time, and over two successive principals – both of whom have believed strongly in the direction of the school. This process has taken seven years to date. Initially, the first principal worked closely with community to identify their needs and desires, along with the areas of concern. This provided the basis for the reforms at the school.

Both principals have worked with the staff and community to build a solid foundation upon which to build a school culture – particularly one that reflects the desires of the community and helps to position learners strongly for their future lives.
### Advice to Teachers

Change takes time to implement, embed and see the outcomes. Creating independent learners has taken time to refine what this means, to develop appropriate practices and to see the effect of these changes. Students now in the secondary school sector of the school are able to work autonomously, identify what they would like to learn, and are able to work with the teacher to identify their learning against the national Curriculum framework outcomes.

Building respectful relationships with community is central to a productive school where the community supports and values the school’s offerings. Working in consultation with the community brings their culture and values into the school and creates a strong partnership between the school and the community.

### Benefits for Learning and Learners

Enabling students to be independent learners helps to build a secure foundation for later life. The practices at Oodnadatta Aboriginal School have focused on the progressive development of independence in learning so that by the time the students are in the secondary school, they are able to work predominantly free of teacher intervention. Teachers may teach some concepts as a class activity but the majority of the lessons are independent. This helps to build autonomy in the students.

Independence in learning has also enabled the students to self-assess their mathematics learning. Students are able to identify what they do know, and in so doing, also identify what they need to know.

Community members feel that they have ownership of the programs and are an integral part of the school community. This has resulted in a very respectful relationship between the school and the community. In turn, this has created a strong relationship with the community that has helped to build a stable teaching cohort. Unlike many remote schools, many staff stay for extended periods of time due to the security and stability offered in the Oodnadatta community.
### Model for Quality Learning

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<tr>
<th>Principle</th>
<th>Strategy</th>
<th>Mathematics</th>
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<tbody>
<tr>
<td>Developing independence in learning</td>
<td>• Individual project work.</td>
<td>• Create project work in partnership with students – topics of interest to the students.</td>
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<td>• Create strong mindsets of learning.</td>
<td>• Students develop a sense that making errors in mathematics is a space for new learning.</td>
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<td></td>
<td>• Self-assessment in mathematics.</td>
<td>• Students identify, in consultation with the teacher, where they are able to experience success in the learning outcomes of mathematics.</td>
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<td>• Mapping against national standards, students are able to identify their capacity to successful complete the outcomes identified in the framework.</td>
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<td>Change and stability</td>
<td>• Build and embed quality programs.</td>
<td>• The programs that have been developed at Oodnadatta have taken time and have been implemented and refined over two successive principals.</td>
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<td>High expectations of students and teachers</td>
<td>• Benchmark at high standards.</td>
<td>• Having high expectations of learners in mathematics where students are expected to reach benchmarks and where the school compares itself against ‘leafy green’ schools has meant that the mathematics is of a high standard.</td>
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<td>Good lessons in mathematics</td>
<td>• Teachers plan for the needs of their learners while drawing on their needs and strengths.</td>
<td>• Lesson plans focus on key criteria for success in learning mathematics. The lesson has three distinct and purposeful phases. Each aimed to address aspects of mathematics and to build students’ confidence in learning.</td>
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<tr>
<td>Phase 1</td>
<td>• Build number fluency.</td>
<td>• Students need to build fluency in number so a phase of the lesson draws on this competency.</td>
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<td>Phase 2</td>
<td>• Revise and prime for learning.</td>
<td>• With numeracy practices seen to be quite limited in the home and community, this phase provides constant revision of concepts and to prime for learning.</td>
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<td>Phase 3</td>
<td>• Personal mathematics.</td>
<td>• The final phase of the lesson is aimed at building new knowledge for students.</td>
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<td>• Often this is knowledge identified by the students and is referred to as ‘personal mathematics’.</td>
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<td>• It may be taught through whole class, small group or individual learning.</td>
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Key Messages – Summary

To build a strong mathematics program, considerable work must be undertaken with community – to access their wishes and to build their confidence, trust and respect in the school. By taking the community’s views into the school culture, a strong culture can be built. This needs to be sustained, and evolve, over subsequent changes in staffing – both teachers and leaders within the school.

With small schools, building independence helps to create solid learning environments in which students work autonomously. This helps to cater for the diversity that is evident in remote classrooms. Independence in learning is a lifeskill that has strong merit in the lifeworlds beyond school.

Having high expectations of students enables teachers to extend students and move away from deficit models of teaching and learning. At the same time, there needs to be high expectations of teachers so that they are able to build the learning environments that facilitate the high levels of learning for students.

School Demographics (Oodnadatta Aboriginal School)

- **Year range**: R-12
- **Total enrolments**: 46
- **Location**: Very Remote
- **ICSEA (school)**: 665
- **ICSEA (distribution of students)**: 83% | 10% | 6% | 1% (bottom quarter to top quarter)
- **Teaching staff**: 6
- **FTE teaching staff**: 6
- **Non-teaching staff**: 5
- **FTE non-teaching staff**: 4.6
- **Indigenous students %**: 93%
- **Enrolments: Girls/Boys**: 25/21
- **Language background other than English**: 71%
- **Student attendance rate %**: 80%

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