

STEPS Vignettes

February 2015

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Supported by the Australian Government Office for Learning and Teaching.



Produced by The STEPS Project, February 2015

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Contents

STEPS Vignettes.....	4
Vignette 1. Partnerships between teacher educators and schools: Reciprocity, Trust, Risk Taking, and Communication and Feedback.....	5
Reciprocity:.....	5
<i>Benefits for Universities</i>	5
<i>Benefits for Schools</i>	5
Risk taking and Trust:.....	6
Communication as a tool for developing and sustaining relationships	7
<i>Communication</i>	7
<i>Feedback</i>	7
Vignette 2. The Pre-service teacher experience: Shifting, learning, valuing.....	9
Working in school based teams for planning	9
Experiences of planning over time.....	9
Confidence from working planning with others	9
Confidence in teaching science	9
Valuing teaching science.....	9
Successful in class experiences teaching science.....	9
Vignette 3. Teacher educator perspectives: Integrating educational research into practice	11
Need for improved primary science education	11
Affordances of school-based model.....	11
Vignette 4. Schools perspectives: Strategic relationships with university.....	13
Principal perspective (Before).....	13
Principal perspective (After)	13
Teachers' perspective (Before):	13
Teachers' perspective (After).....	14
Empirical evidence for the vignettes.....	15

STEPS Vignettes

The vignettes are compilations of the data generated throughout the project, including the case studies, interviews relating to the five partnerships models. Further vignettes will be developed based on the interviews completed with other teacher educators within the science education sector in Australia.

The vignettes are written around themes that relate to questions and issues emerging during dissemination and evaluation of the project outcomes (workshops, presentations, as well as the teacher educator interviews). These themes are important in supporting uptake of school-based practices by other teacher educators.

The themes are written for different audiences so the nature of the vignette depends on the audience. Each vignette contains is built around different themes. Each vignette is informed by data but does not necessarily include the data verbatim, although the contributing data is footnoted.

The themes prepared for different audiences are listed in Table 1

Table 1. Vignette Audiences and Themes

Vignette	Audience	Theme/s
1	Teacher educators and schools	1. Trust and Reciprocity, 2. Risk taking, 3. Communication, 4. Feedback (Partnerships/Relationship)
2	Schools and/or teachers	1. The valuing of science, 2. Strategic relationship with schools (with value, eg. CPD)
3	Teacher educators	1. Integrating educational research into practice (Placement, Feedback about the model)
4	Students	2. Shifting, learning, valuing (Placement, Confidence and identity, Reflection, Theory and practice)

Vignette 1. Partnerships between teacher educators and schools: Reciprocity, Trust, Risk Taking, and Communication and Feedback

Reciprocity:

Reciprocity is important to the partnership model. It is only experienced when the needs of each partner provides the motivation for both partners to commit to an ongoing relationship. Partners need to see the benefits that the partnership arrangement brings to their core business. The more each partner tries to view the arrangement from the needs of their partners' as well as their own needs, the stronger and more sustainable the partnership arrangement can be. It is this mutual benefit that defines the reciprocity that partnership arrangements need for success.

Benefits for Universities

For teacher educators and pre-service teachers one of the primary motivations for involvement in a partnership is the opportunity for the pre-service teachers to gain authentic experience of teaching a unit of science to children.⁵ Pre-service teachers need a successful and authentic experience of teaching science to children to not only enhance their knowledge and capability in teaching science⁵ but also to build their confidence.^{6,8} Having a school-university partnership in teacher education provides pre-service teachers with an opportunity to apply and practice the theory they are learning in the university setting in a timely and often concurrent manner. This concurrent theory-practice learning is not always possible when the formal teaching experience sits before or after curriculum units, or even once they have entered the profession.² To gain a good understanding of teaching scientific concepts in a way that develops children's knowledge, pre-service teachers need to teach a whole unit of science so they can conduct the necessarily assessment and learning activities that build knowledge over time within a focus area. This is something that does not necessarily occur on rounds.³ Pre-service teachers also need to see the way in which children respond to science learning in order to develop a sense of whether their teaching activities and approaches are successful or not.¹ This direct involvement with children learning science also gives them the much needed opportunity to witness the engagement and enjoyment children have in learning science,^{6,7,8} which is often unexpected due to their own poor experiences and/or attitudes towards science. The partnership also serves an important function of helping those teacher educators who visit or are involved in the schools during the teaching periods that are connected to their units. Teacher educators need to see what is happening in the school to not only assess the success of their own science education programs, but also to see the ways in which classrooms and schools are evolving over time.

Benefits for Schools

School-university partnerships also provide a number of benefits for schools. Schools need strong science programs, but they often struggle to address science adequately for a range of reasons. Teachers need to cover a lot of content from a range of curriculum areas and they often feel the pressure of a crowded curriculum.¹⁶ Teachers also need to

have confidence in their background knowledge of science and in their ability to teach it effectively. The lack of this confidence and/or knowledge can limit their ability and incentive to teach science.^{14, 15, 17} A partnership with a university science teacher education program can help to address these needs by providing access to expert science educators to ensure there is adequate support in the development and delivery of science units. Schools also need to have appropriate resources – both staffing and material – to provide a rich science curriculum. Access to such resources can be difficult for schools¹⁸ and a partnership approach helps to address this through the use of equipment borrowed from the university involved. Schools also value the engagement and excitement that the science program brings out in the children.^{7, 19} The nature of the school-university partnership allows children to see that science is accessible to them and not something that is only for the “smart kids” or “nerds.”²⁰

Many principals and teachers view the partnership as an opportunity for science professional learning where they learn a range of new activities and ideas and keep up-to-date with contemporary pedagogical approaches.^{15, 21, 22} Many schools also highlight the benefit of the partnership for future recruitment as they get to know the pre-service teachers and their capabilities through the program.^{9, 10, 11} The partnerships with universities are viewed as an attractive selling point for some schools and they advertise it through their newsletters and school council meetings as a way of demonstrating the school’s success.^{12, 13}

Risk taking and Trust:

Trust between partners is always an important component of successful partnerships. Trust is, however, something that takes time and experience to establish. This means that at the beginning of any partnership arrangement, both partners need to examine and commit to taking the risk of working with one another. This risk taking can be quite difficult for school-university partnerships as it is often the teachers and teacher educators organising the partnership arrangement that places the learning of their respective students at risk.

Ensuring that a partnership runs smoothly and is successful can be quite demanding on the people involved. There is a significant amount of work involved^{23, 26} including that of recruiting willing partners, determining the needs and desires of each partner, and establishing a program that addresses these needs and desires. Beginning a program like this can also be risky in ensuring that there are enough pre-service teachers and enough children to meet everyone’s needs.²⁶ These types of considerations require commitment and flexibility from everyone involved²⁴ and partners may need to alter those aspects of their programs they can if they want a partnership to proceed. Partners need to negotiate some challenging aspects such as timetabling and consider how other programs each partner needs to deliver will fit in/around the partnership arrangement.^{25, 27}

The reward for taking this initial risk is the relationship and trust that is able to be established over time. Where possible, schools and universities need to have the same people involved more than once to allow the experience and trust to build.^{28, 29, 32} Although even then, the level of success can be dependent on the people involved.^{31, 33}

Partnerships can be maintained or grown once that initial trust is established and consistency of success is experienced.^{30, 34}

Communication as a tool for developing and sustaining relationships

Feedback and communication is needed between all key stakeholders: university students, teachers, principals, children and university tutors. Communication is needed for establishing the relationship so that the needs and demands of the school and university can be built into the developing relationship. Also important is ongoing communication and opportunities for feedback in order to maximise the learning taking place for students and to ensure that the relationship continues to be beneficial for the children, the teachers, and in meeting the unit objectives. Communication is needed for developing and maintaining trust in the program delivery positive outcomes, and in achieving reciprocity where each partner is willing to contribute to meeting the needs of the other partner/s. Feedback is an important mechanism for checking that all is well, that changing needs are recognised, and that there is room for movement and change.

Communication

Communication is needed when negotiating partnership arrangements, both negotiating the current arrangements and helping shape future arrangements.

Good communication between the University representative, principals and the teachers involved, are central to the relationship.⁴² Good communication when establishing a relationship can help to dispel apprehensions from principals and teachers that might have developed from past experiences of working with partner organisations, such as other universities.⁴³ Discussions with the classroom teachers prior to teaching about the topics, the approach, and expectations are central to getting teachers feeling at ease and knowing it is all going to be ok.⁴³ This first communication establishes the nature of and expectations for future interactions.⁴³

Schools need to know that they can influence the nature of the relationships and the type of experiences that their students are involved in. By listening to schools, there is greater opportunity for the work of the students to be valued because the content might tie into the curriculum⁴⁷, and there is greater potential for the classroom teachers to extent and support the work of the students.⁵⁴

Feedback

Feedback for the school about the value of the partnership, leading to ongoing involvement is important. Feedback between students and the teacher, and between tutor and students are central.

Good feedback means satisfaction, which hopefully translates as sustainability of the program.³⁰ Teachers and principals are attuned to whether issues arise.^{52,53} Getting the principals and teachers on-side is central³⁰ so positive feedback about what the children are doing with science gives principals and teachers assurance that it is working.⁵³

An open line of communication between PST and teacher works best if the flow of information goes both ways.^{35, 37} The teachers appreciate the teaching ideas that students offered through their lessons,³⁶ as well as being briefed on the concepts and standards that their children were covering.³⁹ Teachers also feel comfortable when their knowledge of the different learners in the classroom are sought, respected and built into the relationships developed between their children and the students.⁴⁶

Students appreciated the feedback, guidance and support of the classroom teachers.³⁶ Such feedback has the effect of assisting in the immediate teaching of the unit, promoting reflection on that teaching, and providing a positive memory of the school and the experience.⁴⁰ This opportunity for feedback arises out of attentiveness to what the students are doing (instead of using that hour as time release) which the teacher might then extend later.⁴¹ Finding that balance between giving the students space and having input to proceedings is needed to make it work.³⁷ Feedback from the tutor was also valued by students in relation to the teaching that was going on, the lesson plans that were being constructed and generally how the students were going.³⁸

Vignette 2. The Pre-service teacher experience: Shifting, learning, valuing

This vignette reflects the reported outcomes of changes that pre-service teachers experience as a result of a science teaching focus that arises from the school-university partnership. It relates the changes in confidence and identity aligned with school-university based science education experienced in the partnership.

Working in school based teams for planning

A significant and notable change reported in the data is in the changes to students' identity and their teaching practices. This arose from the experiences of working with a range of others, peers, mentor teachers and university staff. The students experience team planning and team teaching. This can be experienced when working with each other, or with school based teachers, or with university academics. Some PSTs initially expressed concern, even anxiety, just around the thought of planning with others.¹⁰⁷ The 'others' includes their peers, predominately, they seem to be satisfied and comfortable with planning discussions with academics and school based staff.¹⁰⁸ There are a variety of successes reported, and some failures as well, as students managed planning times.¹⁰⁹

Experiences of planning over time

There are examples of enthusiastic reporting of successful teams planning together, researching science concepts and resourcing lessons with materials, and discussing students learning needs¹¹⁰. The planning week by week, and following up on previous teaching, for some had not been a successful, or team experience, and for some had an infrequent experience.¹¹¹ In addition some were able to experience the need to plan, and then be flexible in response to students learning needs.¹¹²

Confidence from working planning with others

The students who reported on successful teamwork, in their placement, shared collegiate experiences of knowing the students and making more informed decisions together. The regular contact with schools, and the regular classrooms experience, contributed to the confidence and enjoyment levels, because PSTs felt more confident.¹¹³ Their increased positive identities were aligned with the idea that they felt that they knew what was needed to be taught.¹¹⁴

Confidence in teaching science

Confidence is a key element evident in the discussions and repeated with frequency by the PSTs. This is associated with team planning and teaching, as reported above, but it is also associated with the teaching of science in classrooms.¹¹⁵

Valuing teaching science

The teaching of science is valued for both the classroom practice¹¹⁶ and as a valued experience that they could refer to in a statement on their CV.¹¹⁷

Successful in class experiences teaching science

This change in confidence is a major factor noted by classroom teachers, and in the subsequent interviews for this project, confidence is oft stated, and tied to a successfully supported placement teaching science. The PSTS have experienced the positive impact

of science teaching in classrooms, and how level engagement and enthusiastic participation. Students explain how nervous they were before, but as a result of high levels of classroom engagement, now declare growth in confidence levels.¹¹⁸

Vignette 3. Teacher educator perspectives: Integrating educational research into practice

This vignette reflects the reported reflections of university tutors working in school-based science education for pre-service primary teachers. It discusses the tutors' perceptions of the affordances and constraints of these programs with respect to changes in pre-service teachers' confidence and identity and their ability to teach science aligned with school-university based science education experienced in the partnership.

Need for improved primary science education

The quality of science education has been the focus of a number of research projects nationally and internationally, including concerns about primary teachers' lack of science knowledge and confidence to teach science. The practice of integrating multiple learning domains such as science into units of work has led to science's lack of prominence in the curriculum, so pre-service teachers may have little opportunity to observe or engage in science teaching whilst on practicum. School-based science education for pre-service primary teachers has the potential to build their science knowledge and confidence to teach science. The Science Teacher Partnerships with Schools (STEPS) project investigated the effectiveness of school-based approaches to pre-service primary science teacher education.

Affordances of school-based model

The school-based experience was found to provide pre-service teachers with an authentic engagement with the teaching of science while being supported by their university tutors.⁹⁹ The PSTs are actually doing this every week and then have the ability to reflect on it before they go and do the next week. They can interact with the university tutor and the classroom teacher before and after their teaching. Then, in the reflection afterwards, important connections can be made.¹⁰⁰

The school-based model applied to pre-service teacher education, therefore, provides the opportunity to employ intense, explicit work¹⁰¹ for primary children drawing upon their real life experiences to make sense of the world around them. It gives the pre-service teachers a more realistic view of what the science is and how to teach science. It makes the connection between the theory and the practice so much more real and effective. There are high levels of positive feedback for the school-based science education model and an appreciation by school teachers of the planning, preparation and flexibility demonstrated by pre-service teachers.

School-based experience has advantages which cannot be gained in the University environment.¹⁰² and is particularly so as an intense focus on a teaching domain and small teaching groups of primary school children ensure relationships and rapport are built over time.

.Additionally, it allows the construction of their science understandings through hands-on activities and targeted individual attention.¹⁰³ This is supported by teachers and teacher educators who observe and support the pre-service teachers delivering the unit

of science.¹⁰⁴ The model provides a way for PSTs to have a focus on the observation and implementation of theory. This leads to the practice and implementation of theory allowing the pre-service teachers to witness the benefit of what they have done in classes at university. It is practicing teaching, not just learning the theory and learning about it in a classroom at university with no context.¹⁰⁵ The PST can go out and do what they have been told about or advised to do and practice it. It provides an opportunity for the entwining of theory and practices so bridging that theory/practice gap. It is not just the PST learning about teaching in isolation and then expecting teaching to be put into place when they go out on their practicum¹⁰⁰ or when they eventually graduate. Their school-based experience is accompanied by an on-site tutorial where theoretical frameworks such as the 5Es are discussed. Theoretical frameworks such as the 5Es can be incorporated into an on-site tutorial and this can then be supplemented by the school-based experience derived from the PSTs participation in the model. So it is a big part of the tutorials, not just talking about the theory but also discussing how it can be applied and then practicing the theory straight away.¹⁰⁶ It is getting them to be more professional about what they are doing as well as supporting them.

It is important to note that obstacles may impede the success of the model, in particular issues relating to timetabling both in a school and in the University environment. Despite this, the placement provides pre-service teachers with excellent preparation to move into teaching.

Vignette 4. Schools perspectives: Strategic relationships with university

The school involvement in the program was initiated through contact with the principal by the university and the information passed onto teachers. These groups generally had similar ideas about involvement in the program, but slightly different perspectives. Both principals and teachers saw the value in working with the university to support pre-service teachers, where collaboration emerged as a powerful experience for both pre and in-service teachers.

Principal perspective (Before)

Principals tended to focus on how the program fit with their strategic priorities and the perception that teachers needed additional support in science.

The principals articulated that a university supported program of pre-service teachers working in their school was a great idea and were keen to be involved. The principals surveyed said they saw the value of what science has to offer in the curriculum⁵⁵ but they recognised that often their teachers lacked confidence with science.⁵⁶ Being involved in this program offered a good opportunity to engage with science^{57,58} and in many cases, science was also a strategic curriculum priority for their school.^{58,59} They also felt the program offered their teachers an opportunity for professional development in science by working collaboratively with the PSTs as colleagues.^{60,61} Lastly, principals also perceived that schools were partly responsible for improving links with the university and contributing to the professional growth of PSTs by providing experiential opportunities for future teachers.^{59,61,62,63.}

Principal perspective (After)

Principals often mentioned that the program helped to strengthen links between primary schools and their university partners, they expressed a willingness to be involved in future offerings of the program as the closer relationship ultimately improved both teacher and student engagement with science.

The feedback was positive and many principals reported increased enthusiasm for science across the school.^{7,64} Many remarked that the partnership met their expectations with regard to the benefits they had anticipated for their teachers before the program started, in terms of increased confidence with science and their professional development.^{21,65,66} Principals added that they would like to develop closer links between the school and the University in order to explore more sustainable outcomes by finding ways for this experience to have a wider impact in the school.^{67,68} Some suggestions to improve the effectiveness of the program included providing opportunities to provide feedback;¹⁷ extending the partnership approach to other curriculum areas;⁷⁰ recognising the program as mutually beneficial;⁷¹ and coordinating the partnership program with the practicum to take advantage of the relationships built up between the PST and the class.⁷²

Teachers' perspective (Before):

Teachers saw the value that science had to offer but tended to focus more on the barriers to teaching science including their lack of confidence with the subject. They clearly saw the

program offered a good professional development opportunity that would also benefit their students.

While some teachers admitted they tended to avoid science due to a range of barriers⁷³, they were aware of the unique opportunity it could offer their students to learn through inquiry based learning experiences and observation; to draw on their life experiences; to use science processes; to explore and better understand how things work in the world around them and to provide ideas for integrating other areas of the curriculum with science. The teachers hoped that through their involvement in the program, their students would be engaged and their natural curiosity would be stimulated.^{74,75,76} Teachers also were looking to get some fresh ideas and build their own confidence with science.^{77,78} The teachers tended to view the PSTs as peers and saw the program as a chance to really focus on science.^{79,80} They felt the program would help to overcome the problems due to the over-crowded curriculum and ensure they dedicated a period of time to science so it isn't swallowed up with competing curriculum demands.^{80, 81, 82, 83, 84.}

Teachers' perspective (After)

Many teachers were surprised how effective science was within their own classrooms. When they witnessed the engagement of their own students with science it had a very positive effect on their own attitudes towards science. They also expressed a willingness to be involved in the program in future and made suggestions for further improvement.

The teachers were very supportive of the program and willing to participate in future, seeing the cooperation with the university as a positive for all.^{36,85} Teachers noticed that the science activities really engaged their students;^{86,87} how their students looked forward to the weekly science lesson and responded so well to the hands on nature of the activities.^{87,88} This reminded them of the importance of including science in the teaching program and caused them to reflect on whether they were doing do enough science with their class. ^{88,89} In some cases, where teachers lacked confidence, watching the pre-service teacher helped them to realise that teaching science need not involve complicated preparation, it can be more easy to implement than they had thought.^{89,90,91} Where teachers were more confident with science, they reported that they learned some new science content and/or it provided fresh ideas and allowed them to reflect upon their own teaching by observing and assisting rather than supervising the PST.^{92,93} The teachers were very supportive of the program and saw the benefits for their students, teaching colleagues and PSTs alike. ^{3,92,93,94} Some suggested ways in which the program could be improved such as: including visits to the classroom before the lessons started so that the PSTs could get a better idea of the needs of the class; a chance to build a relationship prior to teaching the class;^{95,96} and more time to de-brief after lessons.⁹² Teachers new to the program suggested better communication about the program so they were more aware of their role and who they might contact if they needed to clarify something.⁹⁷ Where programs were more established, the teachers appreciated the open lines of communication and building relationships with the university staff. ^{28,98}

Empirical evidence for the vignettes

Table 2 provides the interview data that related to the themes listed in Table 1. The numbers can be linked to one or more of the vignettes.

Table 2. Excerpts from the transcripts that contributed to the construction of the vignettes

No.	Interviewee	Quote
1	Lucy Course Director	I guess they like the instant feedback from students, they know they're doing the right thing or the wrong thing so they have immediate feedback from students, from peers and from the academic staff.
2	Roz Pre service teacher	you might have an idea that something will work but having that direct relationship between learning about it one week in uni and then going straight out and actually giving it a go, you can see that connection and it's allowing you to put it into place straight away as opposed to waiting until you're out in your own classroom where you'd probably forgotten most of it.
3	Natalie Teacher	I think it is a good program because they do get that it's the one program where they really get the idea of being able to teach a unit of work and even on teaching rounds sometimes that's difficult to achieve.
4	Damian Tutor	So in terms of the university it gets the university out there in a working environment in our industry so the school can see and the parents opportunities for the students at the school because of course this is publicised through their normal channels, online and what have you, that the university is actually operating in the real world as opposed to any sort of rarefied atmosphere on the Burwood Highway.
5	Damian Tutor	As well it's important for our students because they get hands on practice so it's not stuff that's just talked about, their curriculum knowledge is challenged, they learn the normal things about turning up to a work environment, they've got to get there at a certain time and all those sorts of things that they do on practicum but it's reinforced on a weekly basis. They learn to make their relationships with the students and they're testing their questioning skills, their planning skills and all that, a whole range of things. So I think from that point of view this is then an extremely valuable model
6	Andy Tutor	all those little things where I see their confidence growing and then they become far more open about teaching science and their own practice because now they've seen it, they see the benefits of it for kids and themselves and their colleagues.'
7	Trev Ex-Principal	I think we've seen it evolve over the time at Villa that I think there are opportunities there that continue to make something of that more and more and people are seeing the benefits, the engagement of the kids and as the understanding of the pedagogy develops you would want to say 'well we can keep working together on this and get something out of it'.
8	Joanne Pre Service teacher	I guess I was so nervous and didn't get much sleep the night before my first lesson but once I was in there and the kids were really engaged, it was quite a good content that the kids were really interested in because it was about stuff that they encounter every day. So I guess probably the confidence was the biggest thing and now since I've done it again I've been much more relaxed and can just pick it up without having to pre-plan too much.
9	Arabella	From a purely selfish point of view we've employed one of those students

	Principal	as a teacher aide at our school, in fact two of them in the time that I've been here.'
10	Lou Principal	I see that there've been real advantages, for a start we've employed a staff member out of it, so one of your trainee teachers impressed us.'
11	Carol Teacher	I found it really worthwhile in terms of building relationships with those Deakin students and we try and support them a lot... it was really nice building those relationships with them and I now know names so if there are people applying for jobs in the future at our school.
12	Danny Assistant Principal	We're a small school we need to get our name out there with the programs that we're doing so we're happy to have the relationship between RMIT and us out there and known through the community. I talk about it regularly at School Council, it's promoted through there when we do our school tours, either Leigh or I depending on who's taking the tours, we talk about our science program, we talk about our link to RMIT as well we think it's fantastic.
13	Aaron Principal	Over the years it's evolved into that program still running and then I guess dovetailing into a science evening that we ask and invite Deakin Science students along to help us run that evening and it really show cases the work that they've done, the work that our children have done and that our community and the value that it has on science. It's a real I guess PR session for the school but it's also a wonderful way for our students to brag and celebrate what they've done over the ten weeks or whatever the course is and for the Deakin students to get to see the other side of what a school community is all about, getting it out to the stakeholders and showing parents 'this is what your child does in an average day in a science lesson' and that's been a real win because they've been able to form relationships in and outside of school with a child, a teacher and the family or the parents.'
14	Rod Teacher	it was really good we really liked it and it was great for the kids as well because it's an area that we struggle to cover so when they came back we jumped at the chance to get back involved.
15	Robyn Teacher	'I try to get activities which can be sort of hands on. The one area that myself am not too keen on is Physics so when it comes to Biology or Chemistry I'm fine. So the Physics aspect I really need to do a lot of work myself like Force and Energy and Levers and Pulleys, it's not my forte. This year your students did that with my lot and it was fantastic, I learnt as well, so that was really good as well.'
16	Fran Deputy Principal	I'd be delighted if it happened in other areas as well but particularly science because it is an area that I think gets lost in the crowded curriculum sometimes and now that they're talking about it being NAPLAN tested that might change people's...which is a sad sort of thing now because then you think 'are they just teaching science because of NAPLAN'.'
17	Sam Teacher	It allows me to reflect on my teaching, to see what works for me and what doesn't, as well as seeing that my techniques may not always be suitable for others. I have gained new ideas for teaching science as well as gaining access to University resources that I have not used before ie digital microscope.
18	David Teacher	Skill level and confidence level of the teachers probably. Availability of resources, funds and those kinds of things and then having I guess the preparation time to set those things up. There's a few barriers there.
19	Lorelle Teacher	You hear the word science and they just get so excited because in their eyes science is fun, science is new learning, science is finding out about

		new things and observing and it's all that stuff and it's the hands on stuff that they love, they love all that. I've never come across a child that when you say 'oh we've got science' they know Friday's our science day, they're so excited
20	Aaron Principal	So I think it's created an excitement and an 'I can do' type attitude that it's not only for adults, or science is for nerds or science is not me
21	Mick Principal	The benefit for our teachers is that they can see if contemporary teaching of science is being instructed in the colleges and being brought to our schools, our teachers can see in a sense, even though these are only beginning teachers they can still be modelling best practice teaching in terms of small group work, questioning techniques, use of equipment, referring to resources and so on. So our teachers also get a bit of a wakeup call or a bit of a reminder of what they could be doing in science as well, so it's a win/win for both groups
22	Zara Teacher	Probably bringing in some innovations from the university because they are current whereas we've been out of the university for such a long time, so something current in science, that's what I was expecting anyway... In approaches, by methods, or whatever they were using, yes. I wouldn't expect the topics to be very different because the curriculum would probably still be the same
23	Sally Lecturer/Course	I think it is as with anything a fairly significant mammoth task.
24	Sally Lecturer/Course	So at the school's end they've got to be committed, they've got at least acknowledge it and want to do it. From the University end the university has to put in place or has to have in place the administrative support, which I'm not sure is there. The lecturer has got to know what they're doing and I have no doubt Mellita knows exactly what she's doing. The students also have to be prepared to do it because there will be those that fail because they don't want to put in that kind of practice."
25	Jenny Tutor	Well yes I think sometimes the schools don't understand that the program needs to be delivered consecutively. Sometimes schools will agree to have Deakin students come in but then Grade 5 will be out on camp and they'll have sports day and sometimes there can be quite large gaps. So I think if the schools understand that we really need to not have that time broken up, for ten weeks to go as much in a row as we can I think that that would really improve the Deakin student's delivery.
26	Elsy Course Director	being able to organise the whole process of getting the students out to different schools...so it's a lot of administrative organisation that we have to do So I think there's not so much limitation if you've got enough schools and enough support in terms of getting the students out in small enough groups for them to be able to carry out the school based activity...you have to have enough schools who want to take you in and let you come in with your students and let you have the facilities for you to debrief. So that can be quite challenging as a co-ordinator of that kind of program.
27	Lucy Course Director	It takes up a lot of resources both materials plus staffing. I think that in one way it does have a negative impact on the other units that the students are engaging in at the same time. So during the semester I think that students don't attend classes because they'll say 'oh no I've got to go off to a school' or 'I was delayed in a school' there are always reasons why they can't be at your class because the science program is taking precedence because they feel that they have to be there and they can't miss that but

		they don't mind missing other units. So I think it actually has a negative impact on the other units that are taught at the same time... I'm not sure how they can fund it really with the (inaudible) and that how much money that's actually taking out and we do have really large cohorts so I think also another problem will be we've got so many students that are going out into schools that a lot of the schools are being taken up with practicum that we may be draining our resources.
28	Joan Teacher	I think it works very well really and I guess it works well because we've had that partnership built up over a number of years so we've got the relationships, the rapport, the same lecturers tend to come out to our school so they arrive at the school and you already know them and they know you, they know how we work here, they're familiar with the spaces and the children so that continuity has been really good.
29	Damian Tutor	I think it's just important for whoever the Deakin staff is that they go out and they establish a relationship with the particular people at the schools now, that's what I did and I think it's important that people continue to do that. I know I'm teaching science to long term students but I've had that relationship with them so I guess the point is if the staff change from our point of view it's important that they go out and establish a relationship or try and step into the ongoing relationship that was already there.
30	Paul Tutor	It's been quite good, a couple of the schools actually invited us back this year because of the success from last year so they obviously value it. I've had some good feedback from two of the co-ordinators at the school this year. The other two schools didn't have my direct email address because I took over half way through the trimester from someone else but I had positive feedback from the two schools that I was with for the full nine weeks. The Principals are on side, the classroom teachers involved were on side, the students enjoyed working with their small group of children, it varied from about two children up to about nine or ten depending on which school we were at and the teachers themselves were quite happy to talk to the students and vice versa picking up bits of information, stuff like that.
31	Trev Ex-Principal	'I suppose my concern would have always been that well these guys come in and they'd have the science and then we just go back and do what we were doing and it'd be just sort of an isolated involvement which would have had some benefit, probably lots of benefits anyway but it may not have been maximised and again that probably would have come down to the various teachers involved I suppose as to how much they engaged with and maybe over time that changed as they saw how it worked.'
32	Lani Teacher	because I've done it before I knew what to expect and I was so excited for them that they got to come in and have a mini lesson plan thing, yeah just to see that excitement engagement from the students.'
32	Stephanie Teacher	I didn't have huge expectations knowing they're students, you get such variable students.'
33	Leanne Principal	Trust definitely but more than that it's the level of consistency. So if you say you're going to do something we trust that that will happen. If we say we'll be ready....
35	Jane Teacher	[How might the program be of more use to you and your practice?] I think we answered that too, maybe with feedback, some communication between the class teachers and the students, both ways.
36	Carol	'It's really great seeing some of the activities that they do because then I go

	Teacher	'oh that's a great one I'd like to do that at some stage as well' so I can often make a little note of something or if they've got a worksheet then I say 'can I have a copy of that'. So again they're Deakin students but still sharing those resources which we do within school so well, so trying to do that as well. I think you learn more and more each time about good communication with each other and that helps them and it helps me as well.'
37	Rod Teacher	you want teachers to be in the background but also there needs to be an open line of communication for the student teachers and the teacher just for it to work.
38	Roz Pre service teacher	I felt that the lessons that we did each week and all the effort that we put into the planning and everything wasn't really part of our assessment as a unit, it wasn't used as a formative assessment, we added it to an appendix but we didn't get feedback on it and we didn't get feedback on our teaching.... We had our tutor walk through our lessons but she didn't really give us a lot of feedback on how she thought we were going, how we could do better, how we could change that next time to get further across to the kids. So I felt we kind of missed out on a lot of that. When you're out on rounds you've got a teacher who's watching you and gives you feedback but we didn't get any of that when we were .teaching so it was like we were just trying to work it out ourselves which was disappointing
39	Matilda Teacher	it would have been nice to see what standards they were aligning with so when writing reports it would be like 'oh yeah they did do this' so sort of jog my memory as well seeing as I didn't take it...[on providing feedback back to student teachers]: I guess it probably would have been quite good, I don't even know if it's possible, but maybe after the lesson took place.
40	Bob Teacher	'well I think we've sort of gone beyond what you expected us to do with feedback, you just wanted us to have the students in the classroom, or in our lesson area and let them teach and go through the process and allow them time but I'm hoping that we're giving them feedback as well and providing a positive environment and a memorable environment so when they hear our name or our school's name again in the future that they have positive memories.'
41	Jill Tutor	'we had an issue with one school that we went to that bothered me a bit, they were still very welcoming and our students did well but it was a situation where the class teachers weren't actually participating, they were given time release for it and then the Deputy Head of the School just sort of floated around the three classrooms for the entire time. So I think there was quite a difference between that and the school where my students were in with the teachers, the teachers actually got involved as well, gave them a lot of feedback and were part of the experience. So that's the only thing that I'm thinking that niggled me a little bit. So I actually think that the classroom teacher, while they don't have to be part of the experience I actually think they should be within the classroom and I think that should be a requirement of it, I don't think that should be time release for the teachers...while this man went around and floated around he was quite good, he did give feedback and he did pay attention he was quite attentive but I don't think it's the same. I also like that there would be follow up with the teacher and if the classroom teacher has no contact in terms of being here they can't do any blow up of all of the work that our students have done...'look I'm not sure about this school they're very encouraging, they're very keen for us to come and I know we have to find schools to participate but I don't like it being seen as time release with a teacher

		floating' and that doesn't mean they have to be doing activities they can be sitting at their desk but I would at least like the teachers to be part of the experience.'
42	Joan Teacher	'there's really good communication already with Deakin University and the teachers here in Grade 6 they seem to address the issues together.'
43	Matthew Teacher	'I remember we were actually a bit hesitant to begin with because we had the university come before you guys and it was just a disaster. It was like we're giving our time up because it's valuable time, from speaking openly and honestly it's valuable time, there's not enough hours in the day to teach and get things taught, so to give a block it was 'well how are we going to do it', 'how are we going to fit it in' and then when it went haywire the first time, it wasn't RMIT it was actually VU, I just don't think they were prepared enough it was the first time they were doing it as well. Then when RMIT came across and the first time they came in it was like an introductory, sat down with the teacher, had a discussion with the teacher 'this is what we're going to teach', that was the difference between both universities and I guess the approach to teaching science in the classroom which was great. So I think that first initial consultation with the classroom teacher was an automatic 'feel at ease it's going to be okay' and once that communication is set the program (both speaking).'
44	Roz Pre-service teacher	Yes I think they really engaged with it we did a lot of hands on things with models and we used demonstrations and things like that which they really loved. We actually got them to write plus minuses and interesting, p or minus at the end of each lesson so they could tell us what they liked about the lesson, what they didn't like so much and what they felt was really, really interesting and what they really enjoyed. So we got that instant feedback at the end of every lesson.
45	Arabella Principal	'an opportunity certainly is the cross curricular theme of sustainability, building a sustainable future in the Australian Curriculum. If that was the theme that all students worked around that would certainly fit in with what's happening in schools anyway.'
46	Arabella Principal	a discussion with the classroom teacher early on would be appropriate in that the classroom teacher could give some information about some of the kids in the class and what makes learning hard or easy for them because in every classroom there's such a range of little personalities, some more challenging than others and certainly understanding our students who are on the Spectrum and what helps them with learning and how that's different to children who are a bit more divergence in their thinking and planning activities that cater for those who need things to converge rather than diverge.
47	Arabella Principal	'there's enough scope within the topic of sustainability to have some variety there and that's what they'll be doing the next year when they're out in schools anyway'
48	Micko coordinator	"The clinical specialist's timeframe is point two but it could be one or two days per week that they're available to go out and support them, observe them and provide that assistant mentoring and feedback and work with the school, with the mentor teachers. The teaching fellow also is able to support them in terms of their work in the school, being able to implement the unit, being able to access the resources for the unit, being able to actually find the time in the timetable and the grades that they need to work with perhaps for the successful implementation."
49	Arabella	'I think there'd be some benefit if there was some sort of feedback or

	Principal	discussion at some point throughout the program that involved the classroom teachers, to talk about what the students were doing what they were observing and then feed that into the classroom teacher and have some discussion there about the why's and the wherefore's.'
50	Mick Principal	'...as I said we've enjoyed the program, we think it's good and we love being part of it and I think its win/win for both. I guess as we've discussed a little bit it's interesting that it's science, in primary level we do a lot of integrated, a lot of inquiry, a lot of this and that and things can be diluted in amongst the general. So I guess it's important to bring the focus back on that this is science so I guess one way of doing that is by doing stand alone science lessons that are very much science that have aspects of literacy and numeracy and all that in them but in general it's science. So it's sort of moving in and out of that so I think it's a good thing, it's working well, it's working well for our teachers and for your students so keep it up, good work
51	Kathy Tutor	"I've had a lot of really good feedback on the unit and I just think that's probably the best way especially for pre-service teachers getting closer to graduation sort of third and fourth year that they should definitely be teaching really any subject in that way, it should just be all in schools.
52	Joan Teacher	'I never get any criticisms or negative feedback so from where I sit that's obviously positive because if there were issues I'd be the first one to hear about it.'
53	Warren Principal	'Kids love it, kids are really happy I've only ever got positive feedback about what the kids are doing with science. They get to have a dialogue with their teacher which they might not get in larger groups as often so they really get to have their voice and I've heard their voice quite loud at different times when they're saying 'but why, how's this happened, show me, I want to see this' which I think is really great but it's a ratio quite often one to four or one to three or one to five which is not a real world application but it's great that they can start somewhere and apply their trade and perhaps build a model where that it really important and you do small group practice.'
54	Stephanie Teacher	[we sit there and you meet our people that are going to come in your team earlier, do you think there would be an advantage?] Samantha: I think there could be so long as there were clearly defined objectives for the meeting and what we were going to achieve and it wasn't just sitting around for an hour gasbagging. If there was an agenda and it was to discuss 'these are what we're going to do', 'how could we extend on that', 'how could we best support your students coming in', I think that could be advantageous.
56	Jock, Principal	The program offered "Increased awareness confidence amongst staff. Greater commitment to science as a learning area"
57	Tim Principal	Agreed to participate "As a means of having more science formally in our curriculum offerings."
58	Summer, Principal	Agreed to participate "To assist, along with other strategies, to implement a well-resourced science curriculum (human and material resources?"
59	Coral, Principal	"I think we have a professional responsibility to be part of training young pre-service teachers or older pre-service teachers whatever you like, I think that's part of our responsibility. So that opportunity is another opportunity for pre-service teachers to get real life experience and

		something important."
60	Celine Principal	"Teachers are aware of the importance and value of this curriculum area. They take advantage of local resources to assist in provision for students ... plus the knowledge that a national curriculum is around the corner has highlighted the need to look more closely at the teaching and learning of science in a cohesive way."
61	Finn, Principal	"Positive links with UTAS. Our teachers learning through participation, able to acquire some new resources which will assist them teach Science within our curriculum etc."
62	Fionn, Principal	"Excellent opportunity to support beginning teachers in their growth and development. Exposing students to new personnel and developing relationships with new staff. Opportunities to bring new ideas to curriculum and new ways of doing things. Opportunities for staff to take on leadership roles."
63	Finn, Principal	"To have input into the forward planning of science programs and links between UTAS and DoE."
64	Jock, Principal	"...the increased enthusiasm for science across all stakeholder groups was obvious. Great concept "
65	Danny, Asst. Principal,	"It's about the ownership, they've got the ownership of the program and it's great. It builds on the skills that I've been doing here as well. I wouldn't have thought to do solar ovens this year, that was a really interesting one and there was a couple to do with the water wheels as well, bloody fantastic."
66	Felicity, Deputy Principal	"I found that that's been one of the benefits of the program is that our teachers actually are feeling more confident about teaching science and working with the kids in that regard...We have so much PD surrounding literacy and numeracy and we have coaches in the region who come out and do that sort of stuff but science is not necessarily had the same..."
67	Agnes Principal	"...for me the ideal blue sky would be that teachers and the (PSTs) would actually have that real time together to do some more planning and organising and sharing of ideas. That they somehow would see themselves more as a collaborative partnership, that I think for us as a school it would be really good...to really talk with and develop our teachers as mentors but not as owners of the knowledge but how do we explore with these new people (PSTs) so that both of us grow..."
68	Chris, Principal	"I think if there were even closer links between the school ...and the Uni we could produce more sustainable outcomes."
69	Aaron, Principal	"...for me there were a lot of upsides to the actual program. Number one is we had some expertise in the teaching of science, number two it covered our quota on our curriculum for science and it kind of up-skilled our staff on what to do and what to look for and how to run science lessons."
70	Danny, Asst. Principal,	"We'd actually like to extend some more programs if it's at all possible I know it something our phys ed teacher has talked about, trying to set up some sort of partnership if there's someone there that would be willing to help out."
71	Michael Principal	"In terms of the partnership we'd want it to be seen as something that will be ongoing and something that's of huge benefit to both parties so that it's not your coming in and just doing this and then going again but our kids get a benefit from it and our teachers will get knowledge and make connections with you and also that they can help your students too. So

		kids, staff and the universities and the schools should all get some benefit out of it so it's a win/win for us all. "
72	Geoff, Principal	"The fact that the student is also doing his internship with that group this term is a real strength."
76	Jim, Teacher	"I think science lends itself to be one of the subjects where the kids can easily see the next step or start to follow their own personal questioning, whether we've got the time to do that is....!"
77	Lindy, Teacher	"To gain some great Science ideas that I can start using in my classroom. To have a better understanding of the Science curriculum myself and gain ideas of how I can assess students understanding of the subject."
78	Lionel, Teacher	"Alternative thinking to how science is taught and assessed, working from different angles on introducing a science topic and keeping students interest in the tasks."
79	Una, Teacher	"Observing another person teach enables me the opportunity to reflect on my own teaching practice and allows me to observe classroom dynamics as well as student engagement and progress."
80	Nina, Teacher	"Planning a sequence with another teacher. Another learning sequence as a resource. The opportunity to have 2 teachers working in the room together. New ideas!!!"
81	Narelle, Teacher	"Ensure the children get to develop some scientific concepts this term, and motivate me to get a bit more science back into the curriculum!"
82	Barbie, Teacher	"Student and teacher satisfaction and stimulation; added knowledge on all sides; being able to provide an opportunity for a university student to add to his/her experiences; a heightening of awareness of science and the inclusion of the subject in our Australian curriculum."
83	Chrissy, Teacher	"I think that by having a "specialist" science teacher in my classroom I will become more motivated to teach science more regularly."
84	Karmen, Teacher	"I'm hoping the program will allow my students to participate in a focused science unit/investigation which, so far this term, I haven't had time to plan myself! I have been doing bits and pieces of science with my students but think they will really enjoy taking part in a complete series of linked lessons. I'm hoping they will be introduced to some science 'techniques' that I will be able to build on throughout the year."
85	Moe, Teacher	I have massive support of the program and partnership that we've got, I just hope it continues because it's beneficial for the students.
86	Ellie, Teacher	"...they (the students) really liked the real life learning and they could see how it was actually connecting to real life, so they loved it...I think back to my experience at uni (as a PST) and I feel like the things that I learned the most were from the classroom, from my teaching blocks and all of that real life practicum."
87	Meg Teacher	"I've seen lots of great hands on concrete experiences that I think 'oh that'd be great to do' or I could see if I was planning a unit I can think 'well that kind of topic would fit really nicely into that'. So in terms of how I would plan science, again I think it just comes back to that idea that we need more."
88	Sabina, Teacher	"The interest that the children displayed – how much they looked forward to the weekly lesson. That the children responded well to the hands on nature of the activities. That I do not do enough science with my class.... That science can be used as a basis for good literacy and numeracy work. That the class are fully engaged and focused when participating in science and I need to do more of it. University students are an untapped resource. We need to have them in our rooms more not just for pracs."

89	Jamie, Teacher,	"For me I guess it reiterated the fact that they do love their hands on activities and that they do like to work in groups as well. They were grouped for a lot of the activities I don't necessarily do that a lot my kids crave for that so it's something I need to change as a teacher as well."
90	Sharon, Teacher	"I realise that science isn't scary and that it can be easy and uncomplicated. I am inspired to teach more of it!"
91	Danielle Teacher	"I think having it is incredibly valuable for teachers particularly teachers who don't have a background or a confidence in teaching science. I think it helps teachers to see how the students come in and see the planning that they've done..."
92	Roshell, Teacher	"(The program) Made me stop and think about the importance of science in the early childhood section: inquiry and thinking skills and a better understanding of science activities in the classroom. My science was previously ad-hoc but now I am more aware of what is possible Didn't have a great deal of time to de-brief with the pre-service teacher."
93	Carmel, Teacher,	"No but the benefit for us is modelling to teachers 'this is not so hard' and for kids to be engaged but your guys are getting practical experience, so that's fine."
94	Jane Teacher	"So the partnership has been very important for us and once again it means that we can develop our units with your guidance and that's been a very, very important part of our school and university partnership."
95	Gertrude, Teacher	"Compulsory visits prior to the commencement of the placement by the pre-service teacher."
96	Roger Teacher	"...one thing that may be a suggestion is prior to this happening again would be a 'meet and greet' ... that might be a way in which the two parties can help, that puts a gentle press on us to make sure we've got some science in there and a gentle press on you guys so that you're planning is consistent."
97	Gennifer, Teacher	"I found that I had to really hunt for information as to how the program was going to run...Program needs to spell out all aspects of how it was expect to run."
98	Danielle Teacher	"Yeah that's been made very clear and the support from uni has been good there's always been that touching base each session and there's been an open channel of communication if we needed to talk in between sessions"
99	Paul Tutor	"It's practical and it's theoretical and it's all wrapped up in the sort of situation where the students are working with real children in a real situation. I modelled the planning that the first four weeks they were supporting the planner that the school had in place, so the Preps were doing 'Me' so we did the five senses as our overall theme. So for the first four weeks for the Preps my students were told 'okay concentrate on sight and vision and colour and light' because there's so many science based activities you can do in that area and then the second half of it, the second five weeks they could plan their own direction still under the heading of five senses. Whereas at XXX their theme was basically Microbiology type things which is a little bit heavy and intense so for the first four weeks we were looking at micro organisms and bacteria and viruses and things like

		<p>that and then the next five weeks I said 'okay well you plan how you want to use that as your starting point and move on'. So some groups went to Mini Beasts so in other words they just scaled up a little bit, others went into looking at 'okay we've looked at Microbiology but there are other small things' so they were looking at and I think one of them even did a little bit on nanotechnology from memory, another group had gone from the 'okay we've been looking at how digestion and everything works with microbes and that' so they went into the skeletal system and the muscular system and things like that. So they had direction over the planning for the full nine weeks but they had a limit of boundaries put on their first four weeks, so the first four weeks had to be sequential and fit in with the school's theme and then after that the students used that as a starting point and then they could head off into their own planning directions.'</p>
100	Damian Tutor	<p>'I'd been involved in a 24 Deakin University⁰ and a similar thing for a Vteach program and we were all in a Lab and I think students learn a lot more about this science because that was all hands on but it didn't have the real pedagogical focus so I think there's room for both of those things once the students have got a reasonable sort of understanding of science and its importance and to be able to apply this in a classroom. Thinking about other units that I've taught where you actually make the connection in the classroom is much better than actually having distance between what is say in a Deakin classroom and in say going out on practicum in schools. So a lot of the TSM courses I've taught have got a component where they have to conduct various observations or activities in school and then write about it afterwards. But the fact that they're actually doing this every week and then they've got the ability to reflect on it before they go and do the next week I think that's really important and the fact that then they've got a Deakin staff member around with whom they can interact while the teacher goes on and in the reflection afterwards, I think that sort of connect is really important.'</p>
101	Arabella Principal	<p>'It's a great opportunity for intense explicit work with the students it's a shame that it doesn't link in with the rest of the work that happening at that time, I mean greater leverage there for our students.'</p>
102	Damian Tutor	<p>'I think it's important for the university, I think it's important for the school and I think it's important for our students. So in terms of the university it gets the university out there in a working environment in our industry so the school can see and the parents opportunities for the students at the school because of course this is publicised through their normal channels, online and what have you, that the university is actually operating in the real world as opposed to any sort of rarefied atmosphere on the Burwood Highway. It's important for the school because the school is seen by your parents and themselves to be reconnecting with the training of teachers and their vision of teaching science. I think it's important for the school in a curriculum sense because they are exposed to different ideas and different ways of actually teaching science and I think often teachers as evidenced in a lot of schools around the place, shy away from teaching science. I know when I was at Vermont South they've got a specialist science teacher but our students have demonstrated, I know they did this at Weeden Heights the teacher's always hanging around and looking that demonstrated really clearly that you can actually do this stuff in a hands on sense. So they can see that and then they can also see a particular curriculum idea, 'okay this is a good thing that we can use'. So often at Weeden Heights the teacher in charge was either taking photographs or</p>

		<p>making notes or indeed on several occasions asked me for curriculum ideas, 'okay how would you go about this', 'how would you go about that', so it sort of cements Deakin's role as a curriculum leader within schools. As well it's important for our students because they get hands on practice so it's not stuff that's just talked about, their curriculum knowledge is challenged, they learn the normal things about turning up to a work environment, they've got to get there at a certain time and all those sorts of things that they do on practicum but it's reinforced on a weekly basis. They learn to make their relationships with the students and they're testing their questioning skills, their planning skills and all that, a whole range of things. So I think from that point of view this is then an extremely valuable model and I didn't mention before but it's also good for the students at the schools because they're exposed to a range of activities that perhaps they wouldn't otherwise be exposed to. So it's good for particular activities and then down the track if the teachers take that up they're going to get another curriculum offering that they wouldn't otherwise have had.'</p>
103	Paul Tutor	<p>'...work out where the children's strengths and weaknesses were, they could modify their teaching so if there was a child who needed extra help they could identify that child and offer help if it was needed. So they basically developed better monitoring skills, they realised the importance of assessment skills from the point of view of diagnostic assessment and formative assessment where you observe what the children are doing, how the children are going about it and then you modify your teaching style to reflect this.'</p>
104	Paul Tutor	<p>'We had a lot of open discussions as a whole group so you might have a group of twenty-seven or twenty-eight at the two schools and we'd be throwing ideas backwards and forwards so that the students could reflect on what they've done and what they've seen but they also at the end of the teaching session instead of having a formal debriefing session we just basically stood around for a bit and each pair were saying 'okay well that went well but we could try this next week'. So I was encouraging them to do self-reflection just immediately after the teaching and then the following week we did a group reflection where people came up with ideas that would work. The kids at the two schools that I worked with for the nine weeks were from the same age group level so one school was Preps and one group was 5/6 and that meant that there was a bit of cross pollination of successful strategies and concerns about 'okay well this didn't work for us has anybody got an idea of how it could work' that sort of thing, there was a lot of two-way discussion.'</p>
105	Lee Lecturer	<p>"I think that I suppose just that whole integration and having that strong link is really important that the students see the benefit I suppose of what they do in class they can actually see it in practice and it probably links a lot more for those students and just having things in isolation. So I think that's another positive too."</p>
106	Paul Tutor	<p>'there was a whole lot of that (theory and practice) because we were pushing the 5E's learning model and the students quickly picked that up and realised that it was a good way to teach, so that bit went in there straight away and the theories behind the assessment theories were put into place fairly quickly. Yeah I think the two were linked, like I said the Lecture Workshop Tutorial, or whatever you want to call it, beforehand had a whole lot of the theory type things there that were an indicator for the students and the readings provided more detail on that.'</p>

107	Joanne Pre service teacher	I wasn't really quite sure how I was going to go with team planning, but I actually really enjoyed it, ... Everyone was very supportive; I had to plan with other people ... We had to get together with somebody else ... and work out a comprise, so that was really good I guess.
108	Carly Pre Service Teacher	I actually worked collaboratively with my PLT. There were three other grade five teachers so I worked with them for the brainstorming; if it didn't work you can take it back to uni the next day or the next week and share and having that resource of people.
109	Roz Pre service teacher	so I thought we should have sat down at then beginning and gone 'well where do we want the kids to be at the end of the unit'.
110	Roz Pre service teacher	I had two people who I was working with we're really good partners so we shared a lot of information and we were able to build upon each other
111	Roz Pre service teacher	Planning I think because I'd never really done any planning week to week
112	Erin Pre service teacher	you can see that it's still going to work even if things don't go exactly to plan
113	Roz Pre service teacher	I really liked that we got the chance to meet the kids and decide on what they were interested in and go on from there; we actually get to see it for ourselves
114	Roz Pre service teacher	we got a feeling of what they wanted to know which was really good felt that was really engaging for them
115	Katy Pre service teacher	So I think it's opened my eyes to the wonderful things that you can do through science and its made me feel more confident approaching it in a school setting; and honestly much more excited about teaching science. I'm certainly not hesitant anymore I'm ready to do it and I've already got lots of ideas yes it was a very ... really positive experience of science teaching and learning; I think without the amount of experience that I had I wouldn't be able to meet the needs of the students like I'm able to now
116	Lynelle Pre service teacher	I was a little bit, not hesitant, but a bit unsure when it came to teaching science
117	Garth Pre service teacher	I go into teaching I'll know how to do it ... I've delivered a science unit and when I go for a job interview I think confidentially I'd land a successful science (inaudible - assuming 'job') because of this, this and this.
118	Joanne Pre Service Teacher	I guess I was so nervous and didn't get much sleep the night before my first lesson ... The kids were really engaged ... it was quite good content ... So I guess probably the confidence was the biggest thing ... I've been much more relaxed; yes absolutely I feel a lot more confident



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