Case Study BP642: Links with a practicing food technologist

Abstract

Reference: BP642
Teacher practice: Senior classes
Title: Links with a practicing food technologist
Overview:
Food technologist Carol Pound works with Tararua College technology teacher Diana Eagle to mentor senior technology students over a five-year period, resulting in many benefits for both students and teacher.
Focus points:

- Working with industry mentors
- Professional development in the classroom
- Enhanced student motivation and quality of outcomes

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Background

Carol Pound has worked as a food technologist for 17 years, in industry (1985-87), as a lecturer in Product Development and Marketing at Massey University (1987-2001) and as a freelance consultant since 2001. She has been closely involved in the Royal Society of New Zealand's CREST-NZ award scheme since its inception in 1989, as a management committee member, resource writer, national Gold Assessor, and as Chairperson of the inaugural CREST-NZ Trust Board. Her energy and enthusiasm in the development and promotion of this scheme has played a critical role in its uptake by schools nationally. Since 2002 Carol has also made a significant contribution to the development of food technology education in schools, working alongside teachers to develop support materials and as an mentor for students. Carol has recently been appointed as a Professional Support Facilitator for Beacon Practice schools.

Diana Eagle began her teaching career in Home Economics at Tararua College and taught for three years before leaving to raise a family. When her youngest child was three Diana was approached to return to the school, where she worked part time for a while before moving back into full-time teaching, now in Design Technology, in time for the introduction of Food Technology into the senior school curriculum. Today, she teaches NCEA courses both in Food Technology using Technology Achievement Standards and in Food and Nutrition using Unit Standard assessment.

Diana first met Carol in 2002 when Carol was given the opportunity to help her develop a trial unit, 'Deli Meals', to be used in the professional development programme for the implementation NCEA Level 2 assessment. This unit was trialed in Diana's 6th Form Certificate Design Technology class. At that time Diana was working on her NCEA Level 1 chocolate-making unit for what was her first year of teaching Food Technology, and she took the opportunity to ask Carol 'a few questions' about it.

Diana and Carol subsequently worked together to develop what would become the Year 11 Tararua Chocolates unit, which involves the design and production of a chocolate product for a client. Carol also became involved in the unit's delivery, both to give ongoing advice and support to Diana, and to students . Involvement in the Level 1 unit was formalised when the unit became a Bronze CREST project that same year. The unit has been repeated (with modifications) for several years and won the IPENZ Neighbourhood Engineers Award in 2004.

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Developing the link

Diana says she was initially overwhelmed at the prospect of contacting Carol after that first meeting. Carol was a professional food technologist with a well developed knowledge and understanding of technology practice, and this was the first time that Diana was teaching food technology as a formal subject.

It took time for the pair to establish what help was actually required. "We both had to learn from each other," says Carol. "Diana didn't know what I knew and I didn't really understand her requirements and what she was looking for."

"I needed to develop a platform of understanding to teach the unit," says Diana. "For Carol, it was a case of working out what I needed to know and for her to put it onto language that students could understand. At times we were speaking a different languages. I would listen to Carol's explanation on something, then go away and make up a resource; then I would come back to her and say: 'Is this what you meant?'"

"At the beginning,' says Carol, "my relationship with Diana was very formal and professional. Diana would ask me to do a specific task, and I would come in for an hour do it and leave. I think we could both see the potential for more interaction, but I was hesitant to be too pushy and Diana was hesitant to ask too much of my time."
To establish and maintain a good long-standing teacher/mentor relationship requires good communication and the ability to adapt one's programming, Diana says. "The main thing as a teacher is to be honest in what you want to get out of it, and to be appreciative of any help given."

"You don't build relationships with a couple of visits,' says Carol. "And, of course, the teacher and the mentor have got to get along or it's not going to go anywhere. Mutual trust is important. A teacher shouldn't feel threatened. Nobody is judging them. Nobody is going to say 'gosh, she should know this'. I knew Diana didn't know some things, but that was the whole point of my being there. We were both working towards the same goal: a better food technology project in Diana's classroom. As long we kept that in mind we knew where we were going."

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Roles

From the outset, Carol was clear that she wasn't there to "teach" the students. As she saw it, she had two roles: to mentor students by helping with their projects and answering their questions, and to provide Diana with professional support and development.

"I was there as a technologist of whom students could ask questions. Students soon learnt that they have to work to get the most out of it, that you're not just going to tell them the right answer. They have to bring the information to you and you'll help them understand it. You're there to bounce ideas off, to give them *guidance* on what to do next - but you're not going tell them what to do, or do it for them."

Diana sees her role in the mentor/student relationship as that of an interpreter, translating what she calls "technology-speak" into "student speak", and asking questions students may not think to ask. She has been pleased at how, as the relationship with Carol and students developed and the level of student understanding increased, she was needed in this role less and less. "Students began to see Carol as someone who knows what she is talking about and who can give them useful feedback on their practice - such as ethical considerations and appropriate testing procedures."

Carol says it is important when working with the teacher that you fit in with their teaching. "When Diana asked me to speak about a specific topic, I'd ask her what messages she wanted me to get across, what she wanted students to come away thinking about."

"Teachers don't know about all aspects of food technology and shouldn't be expected to. They haven't trained as a food technologist. A technologist mentor has the opportunity to share all the little things that can make a student project more real-to-life. They can inject that 10% of spark to make a project special and a challenge to the student - access to that piece of testing equipment or a trip through the real production plant or help to understand the food science that is occurring. This can make all the difference to the project being good and being exceptional. You want the student to have a real sense of achievement if you are going to keep them interested in technology."

Carol: "You don't need teaching experience to mentor students. It is not hard. You just need an interest in working with young people, the ability to listen to what they are saying while also understanding that they are going to need guidance at time to get going in the right direction."

Carol suggests that class trips to a workplace are best when they are directly relevant to the project the student is working on. "Otherwise they are just looking around. Workplace visits must have a purpose and must be facilitated, so that mentors can talk about how what students are seeing relates to what they are doing in the classroom."

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Building Resources

Although in its first year the Tararua Chocolates unit was kept deliberately simple ("The students were all new to food technology, as I was," says Diana), it has become more sophisticated over the years. Carol has introduced students to the use of planning and production tools and testing procedures and protocols, such as Gantt charts, HACCP and flow charts. She introduced the concept of focus groups and showed students how to get meaningful feedback from them to enhance their technological practice.

"Each industry has their own set of tools to help them manage a project - tools that can be very helpful when teaching senior technology classes. It's really basic stuff that teachers really need help with - how to tackle a project and keep it on track, and how to steer students so they're not hanging around. In some of the projects I see in schools, students are just spinning around because the teacher is not sure where to send them next. A technologist is managing this sort of situation every day and can pass on simple techniques that can help."

Student comment: "Carol helped broaden my understanding of technological processes. She helped me to see how scientific methods and concepts (particularly chemistry) were the underlying framework of a sound technological process or product. In particular she keep me on track, with making sure the scientific knowledge and methods I used and developed were accurate."

"The food technology teachers I'm working with are asking me to teach them more tools so they've got more things they can do with the students. So instead of saying 'do some brainstorming', they can say 'today we are going to generate new ideas by doing some comparative market analysis or some attribute listing or some problem inventory analysis."

The continuing success and longevity of the unit is largely due to Carol's ongoing input, Diana's evolving teaching practice and improved confidence and the continuous process of developing and modifying of teaching resources, driven by the needs of particular classes of students. "Each year the unit produces a different kind of achievement, but the same sense of satisfaction for me as a teacher," Diana says.

Diana has also found it very useful to have Carol's input when choosing teaching resources. "There are many Australia and British books and videos that are useful, but can confuse as to what is best practice to teach New Zealand students. Many texts also appear to be contradictory." Carol's advice on these resources based on her real-life experiences in New Zealand industry has been invaluable to Diana building a best practice framework for her students.

Student comment: "Carol was amazingly good. She helped me set out my plan and the way I was attacking it and making sure that all my technological practice and scientific input was correct and factual. She made sure I kept all my references so that it was professional. She made sure that I thought about ethical factors and social implications and all the sorts of things that didn't really occur to me at first. She made sure I got my head around everything and was beginning to think about the product as more than just a product if someone ate it how would it affect them, so thinking about safety and HACCP flow sheets. She made sure that I declared exactly what was in it, especially when I was doing consumer testing. And that my consumer testing was appropriate for the results that I wanted to get."

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A call to action

Carol says involvement in the mentoring programme has been highly satisfying. "It began with CREST, but Beacon Practice has expanded the whole area for me. It's a feel-good thing. You feel really good when you've got your material across to the teachers. You feel really good exposing them to new experiences."

Carol encourages others in the food industry to get involved in their local schools, and become a mentor. "Interacting with a keen group of food technology teachers is easy. It's a stress-free thing, because you aren't being asked to deliver anything difficult. Most of the stuff is in your head or easy to lay your hands on."

MENTOR-TEACHER LINKS

There is extensive support for teachers wishing to establish contact with trained industry mentors through Futureintech and their Ambassador scheme.

Carol points out that it is important for both teachers and mentors to understand the differences in culture between industry and schools. Schools can seem intimidating, she says, and suggests that host teachers can help out by doing simple things, such as being at the front desk to welcome their mentor. "Communication is critical to the relationship. Ringing teachers is difficult in many schools, so regular email communication is often a better option. Unexpected things, like a sports trip, can also crop up then it's crucial that mentors are informed before they turn up as arranged."

Diana, having gained confidence through her work with Carol, has forged additional links with Massey University and the dairy industry and with food technologists from a local processing company, who have served as clients for her Scholarship students.

"Technology is not a static subject but it can be static in our classrooms if we don't look beyond our school walls," says Diana. "Carol has helped me realise the vast wealth of experience and knowledge there is out there in the community and how it can be used by teachers if they are prepared to give it a go."

"Not only do schools benefit enormously from this industry contact, but it also helps in our fight to make industry realise that Technology is a valuable and viable subject in our schools."

The mentoring model Carol and Diana established at Tararua College would translate well to other schools and other subjects. "It's a great way to broaden student experience, give a very real context for their technological practice, and to help make learning more personally relevant. For the teacher it can be a great way to receive support and development."

"For teachers, it might seem hard to make the first contact and you may be unsure of the reception you will get. But if you don't take that first step, you may have lost an opportunity you will never get back."

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