

The end of 'Chalk and Talk'

By Tim Barlow

'Chalk and Talk' had been the staple pedagogical approach of my Science teaching practice since entering the profession. I felt that there was a great deal of information that I must impart to my students. My tried and tested way to deliver information to my students had always been simply to stand in front of them and tell it to them... So what would happen if I stopped this 'chalk and talk' teaching? What if instead I gave the students the talk as an audio podcast and spent precious lesson time working to eradicate student misunderstandings? Quite simply, after removing 'chalk and talk', my students got better marks and considered me to be a better educator.

INTRODUCTION

The information technology revolution is influencing our lives almost as much as the invention of the printing press and its impact on education is as profound as it is in any other aspect of our daily lives. This effect is particularly relevant in the classroom where a range of educational technologies now present themselves as attractive alternatives to the classic 'chalk and talk' teaching methodology. While the new technologies are outwardly impressive, they are sometimes complex and their usage as viable alternatives to more traditional teaching methods needs to be examined.

AIM

My aim was to examine the effect of replacing classroom 'chalk and talk' on educational outcomes of student exam results and student perceptions of



Figure 1: VCE Biology Podcast Album Art.

teacher effectiveness. The hypothesis to be tested was that innovative educational tools such as podcasts are more effective in student learning than traditional chalk and talk methodologies.

METHOD

My traditional process of lecturing students in class time and having students review their work in home time was reversed. I prepared audio podcasts separately and students were given the podcasts to listen to, along with pre-printed notes to read at home. The podcasts I prepared were available for download from iTunes. Notes were provided with the podcasts either as hard copy handouts or also from the iTunes software. Class time was spent working on traditional homework questions, extra classroom activities and promoting greater discussion.

To assess the effect of this change in teaching practice, I recorded exam scores and administered teacher effectiveness surveys to students over a four year period.

RESULTS

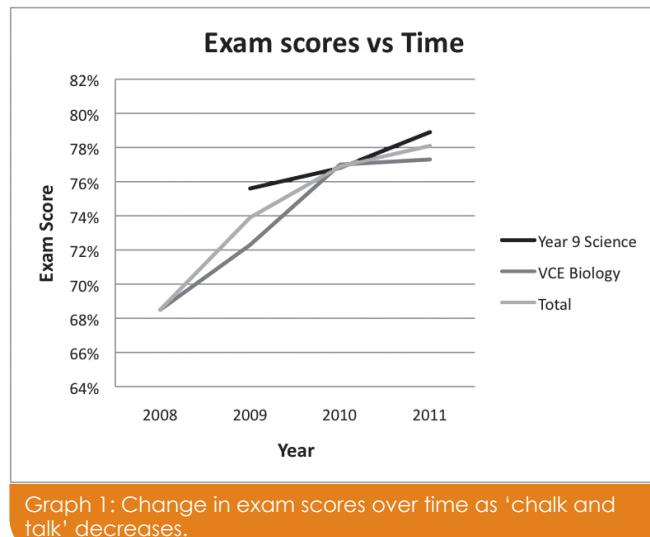
SUBJECT	2008	2009	2010	2011
Year 9 Science Semester 1	NA	23	23	46
Year 9 Science Semester 2	NA	24	23	NA
VCE Unit 1 Biology	18	21	23	NA
VCE Unit 2 Biology	20	20	23	20

Table 1: Number of students assessed per year.

Part 1 – Exam results over a four year period in which ‘chalk and talk’ teaching methods were replaced with podcasts and in class activities.

SUBJECT	2008 EXAM AVERAGE	2009 EXAM AVERAGE	2010 EXAM AVERAGE	2011 EXAM AVERAGE
Year 9 Science Semester 1	NA	77.7%	77.0%	78.9%
Year 9 Science Semester 2	NA	73.4%	76.6%	NA
YEAR 9 TOTAL	NA	75.6%	76.8%	78.9%
VCE Unit 1 Biology	64.3%	75.3%	74.7%	NA
VCE Unit 2 Biology	72.7%	69.3%	79.3%	77.3%
BIOLOGY TOTAL	68.5%	72.3%	77.0%	77.3%
TOTAL AVERAGE	68.5%	73.9%	76.9%	78.1%

Table 2: Student yearly average exam scores.



Graph 1: Change in exam scores over time as ‘chalk and talk’ decreases.

Part 2 – The effect of stopping ‘chalk and talk’ on student perceptions of teacher effectiveness.

At the end of semester 1 in 2009 and 2010 I gave my students an anonymous survey with these instructions and questions:

Give the teacher a mark out of five for each category, with ‘3’ representing ‘average’ and ‘5’ representing ‘as good as my best teacher this year’.

1. This teacher knows the subject well
2. This teacher inspires my interest in the subject

3. This teacher explains new concepts in a number of ways
4. This teacher is really interested in my progress in class
5. This teacher presents the course in a logical way that helps me to be well organised
6. This teacher encourages me to reach high academic standards
7. This teacher is fair
8. This teacher is a good role model to students
9. This teacher gives me regular and timely feedback on my work
10. This teacher caters for a wide range of student abilities
11. This teacher gives the class lots of different ways to learn.

DISCUSSION

An array of new technologies can be applied in the classroom to replace traditional chalk and talk teaching methods. From the now commonplace interactive whiteboard to distance education and to internet tools such as blogs and wikis, today’s teachers can choose to embrace all or none of these new teaching methods. I chose the podcast as a teaching tool because it is a format that students commonly use and are familiar with. The podcast allows a student to stop and start the ‘lesson’ at will and in virtually any location – on the bus, at home, in bed etc. I gathered data to give some indication of the effectiveness

QUESTION	2009 YR9 SCIENCE	2010 YR 9 SCIENCE	2009 VCE BIOLOGY	2010 VCE BIOLOGY	2009 TOTAL	2010 TOTAL
1	4.9	5	4.7	4.8	4.8	4.9
2	4.1	4.5	4.1	4.6	4.2	4.5
3	4.1	4.6	4.3	4.4	4.3	4.5
4	4.0	4.6	3.9	4.3	4.1	4.4
5	4.1	4.4	4.6	4.4	4.4	4.4
6	4.4	4.6	4.1	4.7	4.4	4.6
7	4.7	4.9	4.8	4.7	4.7	4.8
8	4.6	4.8	4.7	4.7	4.7	4.8
9	4.2	4.1	4.3	4.1	4.2	4.1
10	4.3	4.6	4.4	4.5	4.4	4.5
11	4.6	4.9	4.6	4.6	4.5	4.7
TOTAL	4.4	4.6	4.4	4.5	4.4	4.6

Table 2: Teacher effectiveness feedback survey results 2009 versus 2010.

of replacing the more traditional methods with the podcasts, particularly as I felt that I was doing less in the classroom than before I introduced these new teaching methods. Interestingly, and somewhat unexpectedly, the results suggest that replacing the traditional 'chalk and talk' teaching method with a 'podcast and notes/handout' approach both increases student exam performance and increases student perceptions of teacher effectiveness.

Part 1 – The effect of stopping 'chalk and talk' on student exam results.

Surprisingly, it was far from simple to stop the chalk and talk. As a teacher, when my students had no questions and were simply busily working away, individually or in small groups, I felt like I wasn't doing my job properly, I felt that I should be doing more, that I should be the centre of attention. But of course a teacher should never be central to learning; the learner should always be the central component. Being less active in the classroom also enabled my mind to constantly wander. During such reflective times I decided I was having difficulty relinquishing my sense of control over precisely how the students were learning. Due to my inner conflict, I would repeatedly question the students about the approach. Although the feedback was anecdotal, it was always affirming and I think if I hadn't received it, I would have crumbled and returned to the 'chalk and talk'.

As a result of these 'I must do more in class' feelings it took several years for me to truly let go of the chalk and talk and to trust in the students to do what students do best, that is learn. For example, in 2008 when I first started using podcasts with my Biology students, I also delivered 'chalk and talk' style lectures in class, effectively doubling up on the one activity. It really wasn't until 2010 that I stopped delivering content in classroom lectures altogether. As I gradually let go of the desire to stand in front of the class and talk, the results that my students achieved gradually improved. For example, student exam results rose from 68 – 77% in VCE Biology over the investigational period.

Interestingly, my Biology students also reported that they felt my pedagogical approach was more efficient for them. The podcasts I created were concise, ranging from five to fifteen minutes in duration. This was in comparison to the forty-five minute lectures I had previously delivered.

When comparing Year 9 student exam results with Year 11 Biology student exam results, the improvement was less pronounced. As is often the case, discussions with my students shed some light on these results. At the Year 11 level, when I asked my students to listen to a podcast at home they did it every time and they independently took down their own notes while listening. At the Year 9 level, when I asked students to listen to a podcast at home, only about half of the students had. In the same way that a teacher cannot truly know if a student is concentrating in class at all times, I rarely had concrete evidence about whether a student had or had not listened to a podcast. At Year 11, my students seemed to listen to a podcast at home because they were more motivated to learn the course content. At Year 9, students knew that this particular type of homework could not be checked and so some students did not do it, until of course, the day before the test! The challenge at the Year 9 level for me was, as always, motivating the adolescent to engage in schoolwork.

Teaching a Year 9 class where some students had listened to an educational podcast, whilst others hadn't, was very interesting indeed. When I engaged

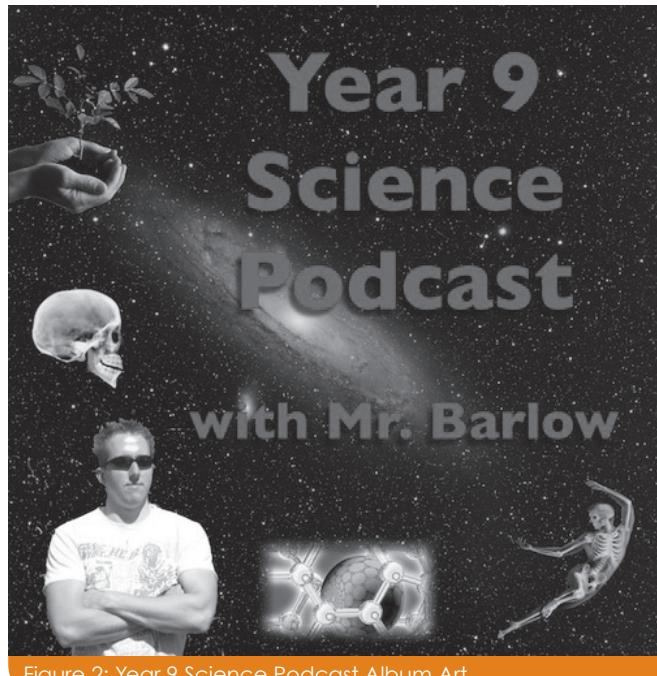


Figure 2: Year 9 Science Podcast Album Art.

in discussion about the course content with individual students, it became immediately apparent if they had, or had not, listened to the podcast. The students who had listened were far more able to move on with any work that was set. They also seemed to enjoy the feelings of empowerment derived from being able to independently acquire the information. Students who had not listened obviously struggled to move on and were more frustrated in class. But it was the gap in knowledge that was most surprising; the students who had listened could really demonstrate, through discussion, that they understood the content very well.

For me it seemed that the true power of a podcast was that it enabled students to learn material at their own pace, by pausing the recording or replaying sections that they hadn't understood. This level of 'tailoring' the delivery of course content was simply impossible in previous classes. Even if it had been attempted, it could never have targeted every student. My students could take notes as they listened, or chose not to if that was ineffective for them. Although it was the same recording, it became a differentiated learning activity and it worked very, very well.

Part 2 – The effect of stopping 'chalk and talk' on student perceptions of teacher effectiveness.

The results of my students' perceptions of my teacher effectiveness illustrated that they thought I was quite a good teacher in 2009. In 2010, I finally made the jump to completely stop using 'chalk and talk'. Prior to giving the survey in 2010, I was quite nervous. I felt that I had not been doing as good a job because I felt I was less active in the classroom, talking less than past years. The fact is, I was less active in the classroom, but importantly the students were considerably more active. Instead of passively listening to a lecture, they were actively pursuing their learning and overcoming misunderstandings, working with each other and with me as their teacher. An interesting and unexpected outcome from these results is that, as I decreased my time in class spent on traditional 'teaching', the students thought I was doing a slightly better job as a teacher.

CONCLUSION

Through my journey, I found that the use of 'chalk and talk' as a primary teaching methodology created an environment where students were passive recipients of information. Shifting this passive activity to the home environment opened up class time to improve student understanding. It resulted in improved examination results and increased student perceptions of my effectiveness. My students learned more, got better marks and enjoyed school more. **TS**

ABOUT THE AUTHOR:

Tim Barlow is a graduate of Monash University and spent the first eight years of his career working as a geneticist. He moved into education in 2005 and is now a science teacher at St Leonard's College, Melbourne, Australia. His blog (<http://mrbarlow.wordpress.com/>) has had well over a million hits. His 'VCE Biology' podcast, 'Year 9 Science' podcast, 'Unit 1/2/3&4 Biology' iOS (iPhone/iPod Touch) applications can be downloaded from the iTunes Store.