



Improving student's learning experience in research through the teacher's disciplinary research: A case study from Monash University MBBS program.

Nirma Anandi Samarawickrema, Janet Olwyn Macaulay (Monash University, Australia) and Ramya Gayani Samarawickrema (Deakin University, Australia)



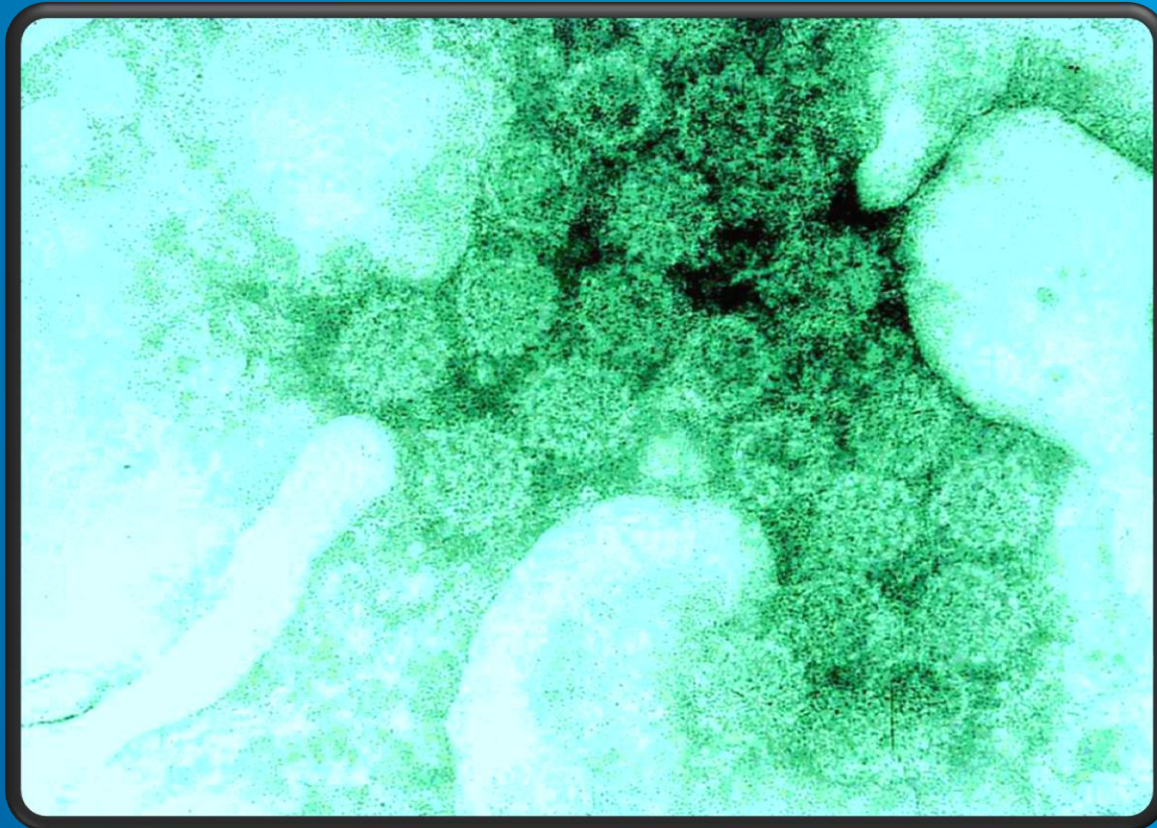


Background

Based on my own laboratory research on human papillomavirus (HPV) and cervical cancer, a collaboration between Monash University, Melbourne University, Sydney University from Australia and the University of Kelaniya in Sri Lanka.



Scanning micrograph of HPV, the causative agent of cervical cancer



Garland et al., 2002



Cervical cancer





Estimated age standardised incidence rates of CC and its mortality (100,000 women) (Globocan 2008)

	Cervical cancer incidence	Cervical cancer related deaths
Worldwide	530	275
Australia	4.9	1.4
Sri Lanka	11.8	6.9



Teacher's discipline research:

- Cervical cancer genotypes?
- Prevalence of HPV genotypes in general population?
- Knowledge? awareness? acceptance? challenges?
- Burden of other HPV related disease eg genital warts?
- Cost effectiveness of different strategies?



Teaching and research nexus

- Research forms the basis of the content of teaching
- Enhances teaching (new & cutting edge topics)
- Introduction of research culture
- Stimulate and enthuse learning
- Encourage critical thinking



Linking research into undergraduate curricula:

- Research-tutored: students (participants) engaged in research discussions and writing.
- Research-based: students (participants) in the research processes and undertake inquiry.
- Research-led: student (audience) curriculum is based on learning about current research.
- Research-oriented: students (audience) are taught research processes and problems.



Context

- In the current study Student Project Cases (SPC's) (2nd year) of the Monash University MBBS programme was used.
- The SPC's facilitates interdisciplinary learning, where the students research and present a medical case.
- Students are given one of four topics and work in groups
- Each group plans, researches the current literature and communicates findings by written & oral presentations.



The SPC process

Meeting 1

- Week 2, Semester 1
- Specify requirements for annotated bibliography, written summary and oral presentation and prepare management flow chart

Meeting 2

- Week 4, Semester 1
- Submit management flow chart and annotated bibliography, report progress of research and written summary

Meeting 3

- Week 6, Semester 1
- Discuss draft written summary

- Week 7, Semester 1
- Submit written summary

Meeting 4

- Week 12, Semester 1
- Feedback on written summaries and discussion on oral presentation

- Week 2 Semester 2
- SPC PRESENTATIONS and feedback



Method

- Participants: students who prepared the SPC on "HPV and cervical cancer"
- Format:
 - Questionnaire (Clayton n=59; Sunway n=21) and
 - Focus group (Clayton n=4; Sunway n=3)



Aims of this study

- Information was sought in four key areas:
 - (1) participants' background,
 - (2) their understanding of research and research culture,
 - (3) impact of the teachers disciplinary research on students
 - (4) their perception of HPV and cervical cancer.



Results



(a) Student demographics

	Clayton campus (%) (<i>n</i> =59)*		Sunway campus (%) (<i>n</i> =21)*	
Gender	63% female	37% male	81% female	19% male
Age group	17-19 yrs: 42%	20-22 yrs: 58%	17-19 yrs: 19%	20-22 yrs: 81%
Rural/Urban background	Urban: 88%	Rural: 12%	Urban: 95%	Rural: 5%
English is their first language	86%		71%	
Overseas students	27%		29%	



(b) Student understanding of research and research culture

- Identified research to be “an investigation of a subject by careful consideration and critical analysis”.



(b) Students perceived 'research' as:

- **discovery** (*'Advancing the current knowledge base whether it is proving or disproving topic which is already known or discovering new things'* Clayton campus);
- **investigation and data creation** (*'Research is all about investigating or doing studies and developing new primary data and collaborating lots of old primary data into a good secondary data'* Clayton campus); **and**
- **improving the human condition** (*'Research is to find out more about disease and its cure, to look at existing evidence whether it is clinical or laboratory based and fill in the blanks of a particular topic'* Sunway campus).



(c) Impact of teacher's disciplinary research on students:

- Inclusion of staff research into their curriculum beneficial.

'I think it does have a role in you know being shown to us that people are doing research because you know learning how to do research is a very important skill to develop.....'
(Clayton campus)



(c) Impact of teacher's disciplinary research on students:

- They were stimulated by the currency of the information and were enthused by the connections research made to the clinical context.

'It stimulates my interest because you can see it being used in the clinical context or in a research lab based context or whatever' (Clayton campus).



(c) Impact of teacher's disciplinary research on students:

- Students found it a bonus that the SPC was on their teacher's own research.

'It made it sort of more real and definitely made it current and realising that it is all current and that there is actually someone working on it within the university and that it was our supervisor made it exciting' (Clayton campus).

'It was good to know that we can always go back to [the teacher] to check things as well because she did know about the topic specifically, so I think that was a good thing' (Clayton campus).



(c) Impact of teacher's disciplinary research on students:

'It is an advantage if the staff member is researching in that area then they are going to know so much about that area and have a large knowledge base and if you ask them a question then they are able to give you a lot of information. It's great when they have got that immense knowledge it gives you more confidence in their knowledge base.....'
(Clayton campus).



(c) Impact of teacher's disciplinary research on students:

- The importance of research and its relevance to improving human health was also inspirational to some.

'.....what will make me interested in doing research, if I can see that by doing this research it is relevant to people and will help them then that's what's going to make me research' (Clayton campus).



(d) Impact of the topic, HPV and cervical cancer:

- Deepened student knowledge base on the topic which they realised to be relevant
'The SPC on HPV and cervical cancer was particularly relevant, right at the moment Gardasil vaccination has come out. So I thought that was really interesting extrapolation of information' (Clayton campus).
- *'I have always been more interested in things that I know will either affect me soon or affect the people I know soon a lot of my friends are getting HPV vaccinations. I find it a bit interesting and occasionally I could get this knowledge to my friends. So I am much interested on knowing which are relevant to either my age group or the people I know'* (Clayton campus).



(d) Impact of the topic, HPV and cervical cancer:

- participants were discriminatory consumers of information.

' And when you have done this sort of research you actually put yourself in the scene and you know the hard facts and it's interesting to see how media twists these kinds of things. They give only one side of the story' (Clayton campus).



(d) Impact of the topic, HPV and cervical cancer:

- Students valued the topic as it was current. The up-to-date findings made it an important and significant experience for the students.

'I was happy I got HPV and cervical cancer as my topic. Nobody had any more knowledge about the topic except that this is the virus that caused cervical cancer. So this topic was taken seriously as it was so current' (Sunway campus).

'For knowledge sake it is good to have current topics in our courses' (Sunway campus)



Discussion

- Positive relationship between research and student learning and engagement.
- Encourages students to be engaged active learners.
- Implications in future careers



My own reflections.....

- Preparation of the SPC on HPV and cervical cancer;
 - Enhanced my knowledge base
 - Placed in context my research findings
 - Provided added motivation to me because of positive student feedback.



Conclusion

- Our study exemplifies how academics can work with students to give a more rewarding learning experience.



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Thank you!