

## **Strengths and limitations of a learner-centred approach to teaching research methods**

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*Research Article*

# Strengths and limitations of a learner-centred approach to teaching research methods

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## Abstract

Evaluating teaching, learning and assessment methods at module-level is essential, particularly in enhancing academic quality. However, module evaluations are usually designed and conducted by the institution to serve its own purpose of maintaining academic standards and often do not consider student involvement in the process of module evaluation. Under the umbrella of Sheffield Hallam University's Students as Researchers Scheme, students were appointed as researchers to gather student perceptions on a large first-year undergraduate research module which integrates students from criminology, politics, history, and sociology courses. The research encompassed an online survey questionnaire that was distributed to all 467 first-year students on the module. To accompany this quantitative data, interviews were organised for richer, in-depth data to inform positive change on the development of the module. The findings of this work have fed into further development of this module. This evaluation offered teaching staff an opportunity to reflect on our research findings and their own academic practice both within the department and within other disciplinary areas. It also offered students the opportunity to feedback on their own student experience at module level and in doing so informing the quality of teaching and assessment of the module. It has additionally allowed student-researchers to gain knowledge of the practicalities of action research methodology and evaluation research through taking part in the project.

## **Introduction**

This paper presents findings from a student-led research project investigating student learning and teaching methods in a first-year undergraduate research methods module that is compulsory for students studying social sciences at the institution of study. As this module has recently undergone revalidation, this research investigated the success of a more student-centred teaching technique versus more formal teaching methods. Student-centred learning makes use of the concept of action research as a method of research. Action research methodology could be described as an ‘iterative process of change or intervention, data collection and analysis, and reflection leading to action outcomes’ (Barrakett 2005, 6). Bryman (2008) also acknowledges the impact of action research as it involves people participating in the diagnosis and solution to different problems as opposed to pre-imposing solutions on them. However, it is Habermas’ (1970) work that provides a good theoretical background to the methodologies advocated by action researchers. He explains that research results and outcomes relate to the researcher and can be applied directly; therefore it is closing the gap between theory and practice. The research has been carried out by students who have had experience of the research module in the past and was co-ordinated by the member of staff leading the module. As well as commenting on the learner-centred approach to teaching research methods this study can also give researchers a unique positioning of students researching students.

The purpose of this research was to enhance student learning and improve the learning experience of students by the use of a student-led module evaluation that would inform module changes in the future. Barrakett’s (2005) work is a reflective case study analysis of ways to enhance student learning through student-centred teaching methods at masters-level for a social research methods course at the University of Melbourne. The student cohort class consisted of twenty-three students, including thirteen masters students, two honours students and eight pass degree undergraduates. Students were citizens of Australia, Singapore, Sri Lanka, India, the United States and Malaysia, giving the group a large variety of student types based on nationality, age and degree routes. The methodology used was a reflective case study approach based on an action research methodology, which is similar to Habermas’ work. Qualitative and quantitative data were collected via formal subject evaluations, student performance in assessment and classroom observation. Barrakett included student-centred techniques like case study, problem-based learning, group work and role-play. The data collected was then comparatively analysed with similar data collected on the same module in the previous year, looking particularly at qualitative findings. His study found that student-centred techniques were a useful tool and had a positive effect on student performance, learning experience and subject evaluation. Repeated group work had a positive effect on students who started thinking in a more critical and reflective manner in relation to their own preconceptions and experiences in doing research. This also provided student learning with a social context and a place to bring together common experiences and discuss the curriculum. However, the project also found that students continued to value formal teaching methods, as formal presentation of content in lectures remained important to

students. He therefore concluded that a combination of these methods should be used in order to enhance student learning. The results found by Barrakett (2005) formed the basis for curriculum changes in the future of the module, therefore informing change from previous experiences.

The current study explored how these findings can be used if they were adapted for use with a first-year undergraduate student cohort in a research methods group. It also looked at student-centred techniques versus formal teaching used in this module and explored the success of Barrakett's (2005) approach in this module.

Alaniska *et al.* (2006) looked at student involvement in quality assurance, including benefits and support of this process. The report was a product of the European Association for Quality Assurance in Higher Education (ENQA) 'workshop on student involvement in the processes of quality assurance agencies', hosted by the ENQA member agency National Agency for Quality Assessment and Accreditation of Spain (ANECA) in Madrid on 19-20 October 2006. A total of thirty-one agencies contributed to the membership survey on student involvement. The report investigated evidence on the variety of types and levels of involvement of students in the quality assurance of higher education in the European Higher Education Area. They looked at levels of student involvement in Finland, Catalunya and the UK and compared the three systems using evidence taken from this workshop to formulate their research questions.

What they found, from a pedagogical point of view, is that student involvement could considerably improve assessment practices as it encourages students to learn on their own. However, this could only be achieved if resources are assigned to set up innovative activities and training should be made available to all involved in the process. The main weakness of the project was the low-level of student participation in university structures as the recruitment of students will be placed against a negative backdrop. However, this paper has also identified difficulties in involving students in quality assurance processes that cannot be resolved simply by addressing institutional practices. External bodies such as the UK's Quality Assurance Agency (QAA) have highlighted the need for student involvement in quality assurance outside their academic studies. Something that can be done would be to create extracurricular activities that would enable students to engage in quality assurance as part of their degree or by introducing academic credit as an incentive for participation. On a more positive note, there are also some very important benefits for student participation in quality assurance, such as giving students a voice and allowing them to participate in the overall student experience.

Incorporating students' views and experiences was also a key aspect of this module's future development and one of the key aims of this Student as Researchers pilot scheme. The research therefore looked at how researchers' involvement in this research benefited both themselves and the quality of learning, making researchers' direct participants in quality assurance. This article builds upon Alaniska's (2006) work on student engagement in quality assurance.

## Methods

The researchers used a mixed-methods approach from a subtle realist position, as we can only know reality from our own perspective of it (Hammersley, 1992). Realism is understood by Bryman (2008, 14) to be that 'in the social world we identify the structures at work that generate those events and discourses' and the idea that people's experience and interpretations refer back to an underlying mechanism of something solid. While recognising Hammersley's contribution to the development of the term subtle realism, Banfield (2004) critiques 'Hammersley's conflation of ontology and epistemology... that ignores the ontological status of structure and its relation to human practice' (Banfield 2004, 53). Central to Banfield's (2004, 56) argument is the idea that 'social structures and the actions of people' are ontologically different. However, Jenkins' (1996) work on identity and Stones' (2005) reworking of Godden's' structuration theory counters Banfield's critique by highlighting the duality of structure revealing that structure and agency, in Jenkins' (1996, 16) words, fundamentally 'occupy the same space.' When viewed within a strong structuration framework subtle realism therefore offers a depth of ontological insight that Hammersley fails to recognise.

This research was carried out by two students, one second-year and the other a third-year student. They both had their own unique positioning within this research as they had recently studied the previous module as part of their degree programmes. Their feedback on the original methods module consequently informed the initial development of this module.

As Bhaskar (1979) argued our reality cannot be understood by our individual beliefs only, as researchers needed the support of the participant to gain feedback. Due to this being a student-led project this came with issues, as student-researchers only had limited access to student institutional data, particularly personal data of other students. Student researchers, in this case, had to work alongside and collaborate with module leader to coordinate access to first-year students on the module. This meant module leader having to email online survey on the behalf of student-researchers to students participating in the module.

Online invitations were created and sent out to 467 students who were taking the module on the 15<sup>th</sup> March 2012. This was then followed up with reminder emails on the 28<sup>th</sup> March and 16<sup>th</sup> April, therefore the students had three reminders over a period of six weeks. The response rate was nineteen per cent (eighty-seven students). The survey asked twenty-four questions in total from which eighteen were closed-questions and six were open-ended questions. The researchers also went into lectures to advertise the survey to students while also introducing the qualitative side of the research and making it clear that it was a student-led project.

Analysis for the quantitative side consisted of univariate analysis which compared first semester and second semester results. This was done through the use of SPSS. Qualitative analysis was initially based on organising a focus group to carry out this part of the research. The students were asked if they wanted to attend a focus group within the

survey and eight students replied. The focus group was set after one of the lectures and students were invited by email on the 29<sup>th</sup> March and the focus group was to be held on the 17<sup>th</sup> April. The researchers made themselves available at the lecture to recruit additional students. However, due to the low turnout at the lecture, this recruiting attempt was unsuccessful. This could have been due to the time of year as students had to deal with assignment deadlines after Easter or they may have not returned from their Easter vacation. As a result, one student arrived for the focus group and the researchers carried out an individual interview which was then transcribed by an external source. The researchers also used existing module evaluations from two seminar groups and the opened-ended question responses for the survey to create themes for the qualitative analysis using the qualitative analysis software programme Nvivo.

Denzin (cited in Johnson, 1978, 116) recommend utilizing mixed methods because 'the bias inherent in any particular data source, investigators, and particularly method will be cancelled out when used in conjunction with other data sources, investigators, and methods.' This, Denzin argued, will result in a better and improved piece of research that allows researchers to be more confident with their results and it might also help create new ways of collecting data.

## **Ethics**

Ethical clearance was required by the University Ethics Board in order for the researchers to carry out this work fairly and correctly. The researchers received support from the Students as Researchers team with administrative issues concerning ethics and legal protocol when doing research. This process was supervised and regularly verified by a member of staff in the team by regular meetings at regular intervals along the course of the research project. The University supplied the researchers with ethical clearance forms which were signed and returned before any work was carried out. A consent form was also filled in by all participants in the research project, including any interviews undertaken. All data was kept confidential and participant responses were anonymous, with their identity being disclosed only to the researchers. However, this data was limited as student researchers only have access to a certain amount of personal information due to data protection and not actually being classed as staff members of the university. The researchers were unable to use geographical information relating to the students; this would have given the researchers information on whether nationality and home address would have any impact on the research findings.

## **Findings**

As a mixed methods approach has been used for this research, qualitative and quantitative results will be reported separately. This is done because different types of data analyses may require a lot of space to justify their validity and credibility (Brennan, 2005).

For the quantitative side of the findings, the survey asked students twenty-four questions, eighteen closed and six open-ended questions. There were sixteen closed questions (Table 1) and the other two questions asked if data that the university already holds can be used in the study, for example if they would like to be involved in the study further. The six open-ended questions will be addressed in the qualitative side of the findings.

**Table 1: Percentage breakdown of closed questions**

	Strongly agree %	Agree %	Disagree %	Strongly disagree %	Don't know %
I found the first semester interesting	7	27	49	16	1
The seminars in the first semester were useful	9	57	17	11	6
I found the second seminar interesting	8	32	31	17	12
The seminars in the second seminar were useful	12	49	24	9	6
The seminar activities in the second semester helped me learn and understand the content	4	51	25	10	10
Exploring themes such as gender or ethnicity was a helpful approach in the seminars	10	60	18	2	10
I found the hands on approach (using Lego to construct identities) useful	15	27	18	23	17
Research methods are relevant to my course	17	48	16	9	10
My seminar tutor was available when needed	27	54	8	2	9
My seminar tutor was knowledgeable	37	51	8	1	3
Overall, I think the module has expanded my knowledge of research methods	12	58	15	6	9

	Very difficult %	Difficult %	About right %	Easy %	Very easy %
How did you find the content of lectures in the first semester	2	29	54	11	4
How did you find the semester one assessment	1	30	62	2	5
How are you finding the assessment in the second semester	11	49	38	1	1

	Too much %	About right %	Too little %
How do you feel about the amount of content covered in semester one	24	65	11
How do you feel about the amount of content already covered in the second semester	17	75	8

The majority of students found the seminars to be useful (66%) (Figure 1) even if this decreased in the second semester (61%) (Figure 2) with the introduction of a hands-on approach to seminar teaching, which was introduced as a new approach to the module this year. As part of this approach students were asked to replicate Gauntlett's (2007) study that used Lego to visually represent participants' identities (see below for more information).

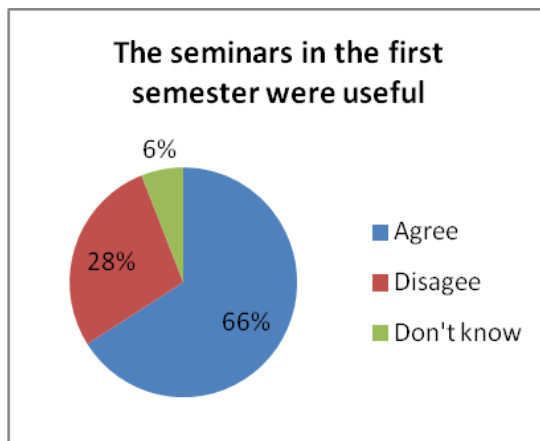


Figure 1: The seminars in the first semester were useful

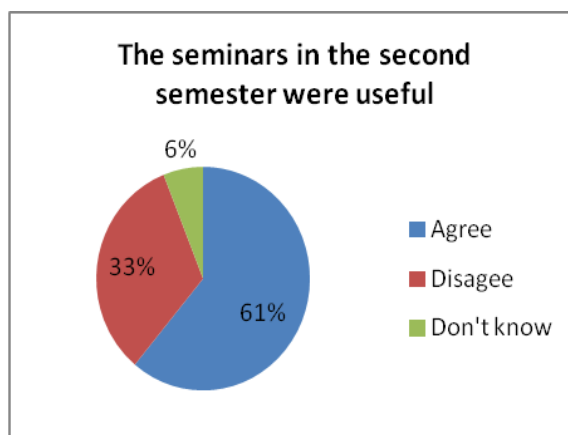


Figure 2: The seminars in the second semester were useful

Quantitative data shows that students found that the research module (Table 2) was relevant to the rest of their course (65%) (Figure 3). However it is interesting to point out that Politics and History students did not find it relevant in the qualitative part of the study (See qualitative discussion below).

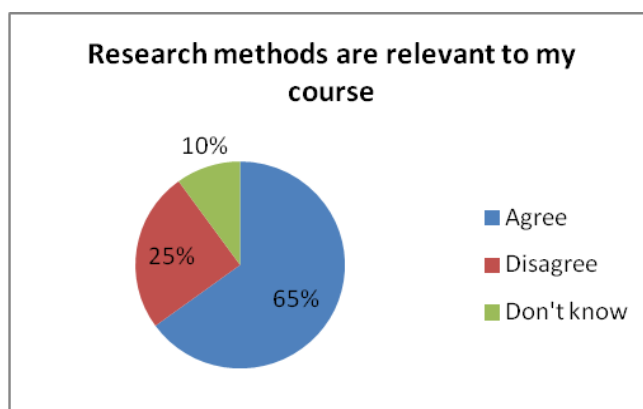


Figure 3: Research methods are relevant to my course



Quantitative results (Table 2) reflected an even split between respondents’ preferences (42% prefer a hands-on approach while 41% do not prefer a hands-on approach) (Figure 4).

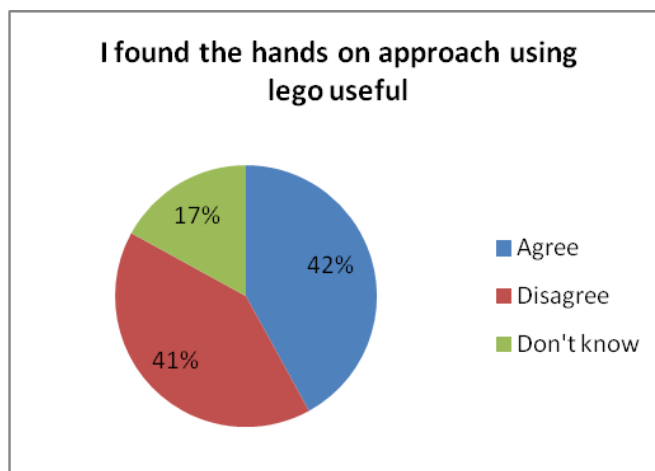


Figure 4: I found the hands on approach using Lego useful

Table 2: Respondent preferences

	Semester One				Semester Two			
	Agree	34%	Disagree	65%	Agree	40%	Disagree	48%
Interesting	Agree	66%	Disagree	28%	Agree	61%	Disagree	33%
Seminars useful	Difficult	31%	Easy	15%				
Lecture content	Difficult	31%	Easy	7%	Difficult	60%	Easy	2%
Assessment	Too much	24%	Too little	11%	Too much	17%	Too little	8%
Content covered					Agree	55%	Disagree	35%
Content activities					Agree	70%	Disagree	20%
Seminar themes					Agree	42%	Disagree	41%
Hand on approach								

For the qualitative side of the research, we used data collected from one individual semi-structured interview, two seminar groups’ module evaluations consisting of eighteen responses in total (eleven students history/politics students and seven criminology/ sociology students), and six open-ended questions that generated interest amongst survey respondents. The six open-ended questions asked as part of the online survey were as follows:

1. Comments about the first semester
2. Comments about the second semester
3. What did you like best about this module?
4. What did you like least about this module?
5. If you could make one improvement what would it be?
6. Please provide your contact details

This data thematically analysed using Nvivo. Thematic analysis is a qualitative analytic method for ‘identifying, analysing and reporting patterns within data. It minimally organises and describes your data set in detail. However, frequently it goes further than this, and interprets various aspects of the research topic’ (Braun and Clarke, 2006, 79)

The main recurring themes drawn from this exercise were: assessment, teaching in seminars, teaching in lectures, teacher availability, content of module, relevance of the module to the rest of the course and first semester and second semester comparisons.

Our qualitative interviewee was a mature student allowing us to gain an insight into the views of a non-traditional student. This is highly beneficial for research as it brings variety to what we know about student experience and student learning, and shows that addressing the views of students from different backgrounds is important when discussing student experiences at university.

Some brief background information about issues discussed by students is needed in order to better understand their meaning. The Lego study that students referred to comes from Gauntlett’s (2007) study that was replicated in class as part of the hands-on approach to teaching in seminars. His study is an alternative to traditional interviews and focus groups in which Gauntlett asks people to build metaphorical models of their identities in Lego, providing insights into how individuals present themselves, understand their own life story, and connect with the social world. Students had mixed opinions about this method of teaching, with some of them being negative (‘The Lego seminar seemed a waste of time to me, and I think the time could have been used much more effectively if we hadn’t spent the hour playing with Lego’), and some of them being positive (‘Lego building was interesting’ and ‘Liked the hands-on approach to learning such as Lego and using songs to explain certain things’). But generally, the qualitative results showed that this applied approach in the second semester appealed to students. This is in contrast with the quantitative results (Table 2), which showed an even split between respondents’ preferences, not giving enough conclusive evidence towards one or the other.

Another recurring theme is the students’ perception of usefulness of seminars in relation to the first and second semester: ‘This (second) semester is more interesting than the first semester because we are now starting to explore the ways in which research is put into practice (...) This was where the seminars were useful in clarifying the information given in the lectures’. This theme is in direct contrast with the quantitative results which show a slight decrease of ‘usefulness’ of seminars from the first to the second semester with the introduction of a hands-on approach such as the use of Lego (Table 2).

Relevance to the rest of the course is another theme in the analysis. This should be taken in the context of students taking various degree courses. For example, history and politics students do not appear to expect to study research methods as part of their course, and therefore feel that the course does not relate to the rest of the modules taught. This situation is not helped by the fact that history students also have to travel from one campus to another in order to attend lectures and seminars for this module. As a result, their response to this

question is predominantly negative: ‘Irrelevant to degree’, ‘The module is not relevant to politics, it is very tedious (...)’; ‘I find the module highly irrelevant to my politics course. In some lectures i.e. researching health, I was learning things a medical student would be learning and not a politics student’, ‘Still disappointed that the module is not advancing my political knowledge and being relevant to my course. The first lecture that contained anything regarding politics was held in late February of second semester’. This puts into perspective the negativity of some of the responses about the relevance of this module to the rest of the course and might give an explanation for the discrepancy between these responses and those in the quantitative side where 59% of our quantitative respondents found it relevant (Table 2). However, although there is little research on the effect of discipline on approaches to teaching, there are some studies which focus on the disciplinary differences in the academic culture. These differences are based on the differentiation between ‘hard’ disciplines (physical sciences, engineering and medicine) which apply a teacher-centred approach to teaching, and ‘soft’ disciplines (such as social sciences and humanities) which take a more student-centred approach to teaching (Lindblom-Ylänne *et al.*, 2006). As it stands, our research includes students from politics, history and sociology courses, all being considered ‘soft’ disciplines, thus literature that refers to teaching students on a range of module degrees from the same type of discipline is scarce.

The majority of respondents in the quantitative aspects of the study felt happy about the amount of content covered in semester 1 and semester 2 (Table 2), but the qualitative side disagreed with the findings as students responded that the content was either too high or not interesting enough: ‘I felt the content of the lectures and seminars was difficult due to the large amount of new vocabulary and at times I felt the lecturers had not clearly conveyed the meanings of certain terms’ or ‘less content would have been beneficial, particularly as it is a new subject area for many, this would have allowed for more recaps/ discussion/ thinking in seminars’ or ‘I just think the content for first year it’s too much, they’ve tried to fit too much in it’. On a different note, some students claimed that they ‘had already learnt everything at A-level’ or that they were ‘going over some stuff that I already knew.’ Balancing this diversity on a first-year module which aims to cater for a range of students is a challenging process that requires constant reflection.

Qualitative results also generated suggestions about how to best raise interest and improve the content of the module. It also identified key strategies for producing challenging and engaging lessons. Some of these suggestions for improvement can be found here:

1. Provide more opportunities to reinforce learning from lectures (for e.g. in Study week);
2. Provide more engagement with students in lectures;
3. Make content more interesting;
4. Make content less complex or decrease number of topics in lectures in order to reinforce learning and leave room for revision;

5. Include more practical activities in seminars (such as the ones in first semester about religion/politics);
6. Make module content more relevant to the rest of the course (especially Politics, History and Criminology students);

These improvements will be taken into consideration in future development of the module to enhance the student learning experience. They give teachers a chance to reflect on their teaching techniques and adopt new ways to engage students with the material. One of the main points that respondents made was about the relevance of the module to the rest of their course. However, this is mainly due to organising courses and administration structures across the University rather than teaching methods in class. Therefore these findings also suggest non-pedagogical improvements to the module. In response to student feedback a separate methods module has been devised for single and joint politics students which will be more tailored to other modules in their degree programmes. A further improvement could be made on the practicality of teaching and the use of multimedia and new techniques as part of the teaching and learning process in the module. This is something that has already started in the current year, but could be improved on in the future by introducing more of these techniques such as the Lego study. Going back to organisational issues, another improvement could be made by providing more opportunities for learning reinforcement in study weeks rather than treating it as a general learning week with time off.

All in all, these suggestions are direct and simple ways of improving the module by taking account of student views and opinions and putting them into practice as a result of this research.

## **Discussion**

One of the issues that needed investigation was how well did students respond to the newly introduced hands-on approach to teaching research methods as part of their course. As the results of this research shows, there is a discrepancy of results with the qualitative results showing that the experience was positive, and the quantitative results showing that there is a slight decrease of 'usefulness' of seminars from the first to the second semester with the introduction of a hands-on approach such as the Lego activities. However, other studies show that this hands-on technique is proving to be useful and popular amongst students. Birks (2001) reported on the delivery of seminars in East Malaysia using a unique hands-on approach to the teaching of skills in research and evidence-based health care. What he found was that these seminars were perceived as a meaningful and memorable experience for both the facilitators and participants of the study. This strengthens the results from our qualitative part of the research, showing that a more practical approach can have a positive outcome.

Mixed methods acknowledge that all methods have inherent biases and weaknesses and that using a mixed method approach increases the likelihood of combining these weaknesses. One of these weaknesses is the possible inconsistencies between data collected from different research methods.

This is the case for this research, which showed an inconsistency between quantitative and qualitative results. This could be seen as an opportunity for further investigation into the relationship between a chosen method and the studied phenomenon, ‘thus allowing researchers and the readers of their reports, alike, to improve their understanding of that phenomenon’ (Rocco *et al.*, 2003). Brannen (2005, 12) also explores contradictions between different types of data and concludes that it leads to an ‘interrogation of the methods and to discounting of one method in favour of another’.

On the other hand, these inconsistencies could also be seen from a qualitative perspective. Qualitative research is not about trying to reflect quantitative results, but explaining more in-depth why people might have responded as they did. Therefore, mixed methods have been used in this research with the purpose of obtaining a fuller picture and deeper understanding of this phenomenon. Also, during the data analysis stage, qualitative data can play an important role by ‘interpreting, clarifying, describing, and validating quantitative results’ (Johnson, 2007, 116), even if in this current case, it sheds some contradictory information on the quantitative results. That is why Greene, Caracelli, and Graham (1989) (cited in Johnson, 2007, 116-117) identified five rationales of mixed methodological studies, including ‘triangulation, complementarity, development, expansion and initiation’. Triangulation is necessary to increase validity and interpretability; complementarity manages overlapping aspects of a phenomenon, while development uses results from one method to develop the other method. An expansion approach is useful to extend the scope of the study while initiation applies to our research as it is discovering paradoxes and contradictions between the methods chosen and deals with inconsistent results from qualitative and quantitative research findings.

One of the shortcomings in the research is that the qualitative results did not illuminate why some people did not like the second semester seminars, but on the other hand, the project has more information on why some people did like it. This is where future research could draw insight from the analysis and work to further improve the module.

Other limitations to our research are drawn from time constraints which led to difficulties in recruiting participants throughout the research. Reasons for this include a research schedule which clashed with assessment times both for potential participants and for student researchers. Due to the late start of the Student as Researchers pilot scheme, there were time delays in survey completion and participant involvement, which eventually led to time delays in recruiting participants for focus-groups and interviews. A way to avoid this in the future whilst still maintaining the student as researchers’ status would be to start the project at the beginning of the first term and leaving enough time to recruit participants for the qualitative research. One other difficulty that we encountered was a lack of student engagement with the project, which might be due to survey fatigue or not understanding the purpose of the research. This limitation will therefore lead to a non-response bias which could influence the type of students that responded in the questionnaires and especially students who took part in the qualitative part of the project. This bias would therefore refer to students who did not participate in lectures where we advertised the research project and were unaware that this was taking place. It would also refer to students who did not enjoy the

module and would have a strong opinion on why they did not like the module and would have given us a better insight into the minds of students that do not take part in lectures and seminars due to a lack of interest in the module. As a consequence, the results from this research could deceptively be more positive than they are in reality due to recruiting students who enjoy the module and attend classes regularly, and therefore who have a better opinion of the module. To minimise possible nonresponse bias, survey researchers have strategies to work with, one being to increase fieldwork efforts to increase the response rate (Blom, 2009). However this will only decrease non response bias if these strategies are specifically directed at underrepresented groups, which in this case are students who do not attend classes for this module. Due to the situation of this bias, it is highly unlikely that it would have been possible to identify students in this category, and therefore not possible to guarantee low non response rates.

Although all efforts have been undertaken to maximize popularity and involvement of students in our project, this was undermined by an increase in a number of other online questionnaires, administered by the university that students needed to fill in prior to our research project, leading to survey fatigue. Together with our qualitative research being at assessment and exam time, it led to a response rate of 19% for quantitative results and a low response rate for qualitative analysis. However, a number of techniques have been employed to maximise questionnaire response rates, such as making the survey accessible and appealing, sending out regular reminders, sending out reminders at convenient times such as the beginning of the week, changing the title of the reminder emails and catching their attention by using words prompting them to fill in the survey as soon as possible. However, Kanuk and Berenson (1975) (cited in Yu and Copper, 1983, 36) claim that there is little evidence of the efficiency of these techniques and conclude that there is no strong empirical evidence for any of these techniques other than ‘monetary incentives and follow-up contacts’. This technique was made impossible for our research by the ethical committee who did not allow us to offer incentives of any kind as a reward for participation in the study.

## **Conclusion**

The significance of this research can be seen from two different viewpoints: one is from the students’ experiences point of view, and the second comes from the students as researchers’ point of view.

The research produced suggestions about how to best raise interest in research methods by the use of improvement strategies collected directly from students. Therefore the research module has been directly improved through the help of improvement strategies collected from students involved in the educational experience. Through the results collected, new teaching strategies will be implemented for future generations of students taking this module, and will also improve the quality of learning for next years’ course. This research is going to be used as a guide for improvement for future students and act as a teaching support for next year. The practicality and applicability of the results show how important the results of this research are in real world research.

Also, involving students as researchers in research and drawing on their sense of agency encouraged motivation and involvement in the whole educational experience as well as providing them with research skills for the future. This type of action research is a new concept in the context of student-led research which helps break down the barriers between staff doing research and students being at the end of research results. The students who are doing the research are more closely linked to the surveyed students as they have recently done the module and therefore have a unique insight into how they feel this helps to break down the relationship with the research participants.

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