Re-evaluating Passive Research Involvement in the Undergraduate Curriculum

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Abstract

In recent years, advocates for research-based education have publicized many examples of passive research involvement, defined as undergraduates learning about the content and lived experience of research at their institution. But the qualitative dimensions of passive research involvement remain unknown. The authors' study uses Diana Laurillard's "conversational framework" to analyze reports from 367 undergraduate students at a UK research-intensive university who met researchers and learned about their work. The results show a range of experiences in student learning about faculty research. These findings make the case that passive research involvement has its own integrity and cannot be characterized as an absence of participation. The authors suggest ways that the students as audience category can enhance undergraduate connections with research.

Keywords: *early undergraduate research, first-year curriculum, research-based education, research-teaching nexus*

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This article analyzes passive research involvement in the learning activity Meet the Researcher. In Meet the Researcher, undergraduate students work in groups to find out about the work of an individual researcher in their department. The content of the activity varies but always includes at least one of the following: searching for information online, reading the researcher's work, visiting the researcher's workplace, and interviewing the researcher. Students share their findings in a presentation or a written report. Taking part in the activity helps students learn about their instructors' research activity, and some students have said it helps them discover areas of study they would like to pursue further. For faculty in the United States, it offers a lower-cost and more democratic access to the lived experience of faculty research than undergraduate research experiences and undergraduate research opportunities programs. Geographers Denis Cosgrove and Claire Dwyer first described the activity and Mick Healey promoted it to show linkages between research and teaching (Cosgrove 1981; Dwyer 2001; Healey 2005). Universities keen to put education on an equal footing with research have featured Meet the Researcher activities in their institutional pedagogies (Fung 2017).

One clear problem in recent discussions of Meet the Researcher is that the language of research-based education has no means of describing passive research involvement on its own terms. Healey (2005) referred to Meet the Researcher in a context where he compared "students as audience" unfavorably to "students as participants." As Mary Malcolm pointed out, "Healey's 'student as audience' categories are those in which no student role is specified and there is therefore no clear pedagogical position rather, than arising from a distinction created within the model" (Malcolm 2014, 293). Didi Griffioen (2019) has echoed Malcolm's observation, calling for more precise definitions of research involvement and "passive" research involvement in particular.

This study clarifies what happens in passive research involvement by analyzing students' reports about their participation in Meet the Researcher. The warrant for seeking student perceptions comes from recent work showing that students' awareness of researchers and their work is distinct from their awareness of their participation (Visser-Wijnveen, van der Rijst, and van Driel 2016). Diana Laurillard makes this distinction when she argues that formal education differs from experiences of the world because students learn about "the complex and alien facts and ideas coming from the minds of others" (Laurillard 2013, 50) in formal education (such as that occurring at a university) rather than learning about the world directly. Laurillard identifies six ways that students learn in formal settings:

- *acquisition* ("this is what learners are doing when they are listening to a lecture or podcast, reading from books or websites, and watching demos or videos," 105);
- *inquiry* (where students make "use of resources that provide searchable access to information, data, knowledge, and ideas" and begin to "turn the teacher's narrative into their own," 122);
- *peer discussion* (where the learner takes "a particular position with respect to a concept" and engages in a cycle of communication with their peers with a view to working "towards an agreed output," 160);
- *practice* (where the student works independently of the teacher "to apply their understanding of the concepts to achieving a task goal" [162] in an exercise prepared by the instructor);
- *production* (where "the teacher motivates the learner to consolidate what they have learned by articulating their current conceptual understanding and how they used it in practice," 98);
- *collaboration* (which is "about 'creating joint reference', something the learners make together, and then use to move on to further exploration," 142).

These learning types each represent "how the learner experiences the types of learning" (99).

Using Laurillard's typology, this article analyzes responses from 367 undergraduate students at a large UK research-intensive university to a single question about their experience of Meet the Researcher. The findings offer a more precise definition of passive research involvement. By specifying a role for students in Meet the Researcher and establishing its range of qualitative variation, it is possible to argue that passive research involvement has a value that is overlooked by influential models of the relationship between research and teaching. The article concludes by outlining possibilities for the *students as audience* category in enhancing student relationships with research.

Methods

Understanding the *student as audience* category requires an examination of students' experiences of passive research involvement. Phenomenography—a successful line of inquiry in recent studies of the teaching-research nexus, according to Malcolm Tight (2016)—provided a useful method in assessing student descriptions of the task of engagement with the researcher so that their experience could be better understood. Categories from Laurillard's conversational framework, which is also significantly influenced by phenomenography, assisted in analyzing the internal relations of those descriptions (Laurillard 2002, 2013). The researchers did not test *what* the students learned, nor documented the impact of this particular activity.

A note on terminology may be helpful here. *Task* is used to refer to a component of Meet the Researcher such as interviewing the researcher, and *activity* refers to Meet the Researcher as a sequence of related tasks that compose a single large activity. *Module* is used instead of *course* to refer to a unit of learning that forms part of a student's degree program.

For this study, the lead researcher contacted representatives of seven degree programs in the university that conduct Meet the Researcher activities. One declined to take part in the study, so students from six programs participated. The programs and their associated Meet the Researcher activities are here identified by initial letters enclosed by parentheses. They include the faculties of life sciences (LS); arts and humanities (AHE); brain sciences (BS1) and (BS2), which are different programs in different departments within the same faculty; architecture and the built environment (ABE); and mathematical and physical sciences (MPS). Some of these programs feature in recent scholarship: Fung (2017) has discussed life sciences; Anyadi (2016) has described brain sciences 1; two recent case studies have focused on brain sciences 2 (Fung 2016; Evans et al. 2018); and mathematics and physical sciences have been analyzed recently (Grindle, Jones, and Northrop 2020).

Students were asked via a single open question to describe their experience of taking part in Meet the Researcher. A single question was chosen because it was thought unlikely that students would answer more than one question due to time constraints. Also, early responses showed that a single open question was sufficient for the study's purpose, which was to identify variation in descriptions of passive research involvement against predefined criteria. The question was the following: "Say you are meeting up with a friend following the 'Meet the Researcher' activity. What would you tell them [sic] about it? Feel free to mention anything at all, for example what you learned, what you enjoyed or didn't enjoy, what was easy or hard, what

TABLE 1. Comparison of Key Contextual and Descriptive Elements in Each Activity

	Life sciences	Arts and humanities	Brain sciences 1	Brain sciences 2	Mathematics and physical sciences
Activity duration	up to 5 weeks, at the start of term 1	10 weeks, in term 2	4 weeks, at the start of term 1	3 weeks, early in term 1	5 weeks, in the second part of term 1
Part of a course?	No	Yes	No	No	Yes
No. of students in group	5	between 4 and 5	5	between 6 and 8	6
Output	Discussion in tutor group (researcher + 5–6 students)	1500-word report (individual), video diary (group)	Group presentation to all students (n = < 35) and researchers (n = < 8)	Group presentation to other half of tutor group (4–5 students)	Short, written summary of research paper
Output carries marks for credit?	No	Yes	No	No	Yes

was well organized or wasn't, or anything else." The question included example responses to indicate that students could report their thoughts, feelings, or any other aspects of their experience.

Female module leaders with PhDs administered the question in LS and AH, and a male module leader with a PhD administered the question in MPS. Experienced female teaching managers who do not teach or hold PhDs administered the question in BS1 and ABE, and the male professor who is program leader for BS2 administered the question in his program. In all cases, the person administering the question also designed and operated the Meet the Researcher activity in their respective program, and in all cases the students knew the person administering the question. These staff members all completed a short questionnaire about their respective activity. Table 1 summarizes the main points about each iteration of Meet the Researcher.

The distribution method of the question meant it was easier to reach the entire population (a total of 575 undergraduate students, of whom 538 were first-year undergraduate students and 37 were second-year undergraduates) than to conduct a sampling process. Methods for gathering the data differed. In all cases except MPS, the people administering the question did so by email within four weeks of the activity taking place, and the students enclosed a response in their replies. In MPS, the module leader used an optional question that appeared before students submitted their coursework assignment via the university's virtual learning platform in the week that the activity finished. In all cases, the people administering the question anonymized the responses before passing them to the lead researcher. When analyzing the data, the researchers used the context reported by the student as a guide to whether the student's activity corresponded to those from Laurillard's framework. The lead researcher coded the data using NVivo software, and a second researcher used random sampling to verify the coding. The project used the UCL Teaching and Learning Centre's blanket ethics clearance for small-scale educational projects.

Unfortunately, students from ABE reported their answers in a way that made it impossible to isolate individual responses. They also failed to complete the activity, which was optional and not part of a credit-bearing module. Their responses were excluded from the results (this is discussed further in the Limitations section).

Results

The number of respondents to the question was 367, with the following response rates:

- LS, n = 50, a response rate of 44.6 percent
- AH, n = 47, a response rate of 41.9 percent
- BS1, n = 10, a response rate of 16.1 percent
- BS2, n = 47, a response rate of 42.0 percent
- MPS, n = 213, a response rate of 91.4 percent

Table 2 shows how students reported their experience of Meet the Researcher, using Laurillard's six learning types. In many cases, multiple categories in a student's report could be identified. To better highlight the distribution of reports, each dimension is shown in parentheses as a percentage of the total student comments from each group.

The most frequently mentioned aspect of students' experience was *inquiry*, where students investigate resources identified by the instructor. It accounted for more than one-third of all comments relating to student activity and was the most frequent report in three of the five programs. The *acquisition* of concepts from the instructor accounted for a quarter of all student comments about their experience. *Practice*, where students applied their understanding of the concepts in an exercise prepared by the instructor, rarely featured in student comments, except in AH, which explicitly set out to provide students with the opportunity

TABLE 2. Student Reports About Their Experience of Meet the Researcher

	Life sciences (*n* = 50)	Arts and humanities (*n* = 47)	Brain sciences 1 (*n* = 10)	Brain sciences 2 (*n* = 47)	Mathematics and physical sciences (*n* = 213)	Total
A. Acquisition	27 (47%)	17 (24%)	1 (8%)	9 (19%)	82 (23%)	136 (25%)
B. Inquiry	25 (43%)	14 (20%)	5 (42%)	24 (50%)	123 (35%)	191 (35%)
C. Discussion	0 (0%)	3 (4%)	0 (0%)	1 (2%)	23 (7%)	27 (5%)
D. Practice	2 (3%)	21 (30%)	0 (0%)	1 (2%)	2 (1%)	26 (5%)
E. Collaboration	0 (0%)	11 (16%)	2 (17%)	5 (10%)	75 (21%)	93 (17%)
F. Production	4 (7%)	4 (6%)	4 (33%)	8 (17%)	48 (13%)	68 (13%)
Total	58 (100%)	70 (100%)	12 (100%)	48 (100%)	353 (100%)	541 (100%)

Note: The number of reports is itemized against the learning activities in Laurillard's conversational framework and expressed in parentheses as a percentage of all student comments from each group.

for putting theory into practice. Students rarely mentioned *production*, apart from those in BS1 who presented their work in a lively and informal lunchtime session.

Discussion and *collaboration* are about the interactions of students with their peers rather than with the instructor (which, in this context, features as *inquiry*). Students reported discussion when talking about their interview with the researcher, but this has been classed as *inquiry*. When students reported discussion between peers, it was almost always in the context of *collaboration*, which is a category that encompasses peer discussion. Laurillard defines *collaboration* as cycles of inquiry and action to generate concepts and practice, which is modulated via cycles of discussion and practice with peers. *Collaboration* itself was the third most common factor mentioned overall.

Taken by group, the results offer a varied picture. In LS, the students learned as the researcher explained key concepts and demonstrated actions, and they also investigated online resources. Discussion and collaboration rarely featured in their reports. A similar picture emerges in BS2, although, in this case, the students investigated resources, and this shaped their experience more than absorbing concepts explained by their professor. Only a few students in BS2 reported interacting with their peers. Student reports from BS1 show that investigating the resources made available to them for the activity significantly shaped their experience. This group also provided the lowest score for *acquisition* and the highest score for *production*. The small number of responses from BS1 is likely because the question was given to the students some weeks after the activity took place.

Students' experiences in MPS and AH differ from the other programs because they are more evenly distributed across Laurillard's learning types. The low *inquiry* score for AH is explained by the high *practice* score. Both types of learning focus on investigation, but *practice* is practical rather than conceptual and repeated in cycles. Students in MPS reported a similarly even spread of learning types, albeit with a slightly higher emphasis on *inquiry*, *collaboration*, and *production*, with *practice* barely registering at all.

Discussion

The results show that student experiences of Meet the Researcher vary widely. In all but one group (AH), a clear majority of students report their experience in terms of *acquisition*, *inquiry*, and *production*, which are all forms of one-way communication. (In AH, the figure for these elements of the students' experience is 50 percent). In addition, 30 percent of students in AH report their experience in terms of *practice*, and 21 percent of respondents from MPS report their experience under the *collaboration* category. Actions involving repeated cycles of conversation with peers are more closely associated with higher-order outcomes than tasks with fewer opportunities for exchange (Laurillard 2013). Students in AH and MPS must also do more things and spend more time on the task than students in LS, BS1, and BS2. These are also factors associated with stronger learning (Gibbs and Simpson 2004). Meet the Researcher as a whole requires students to learn about someone else's research, and some forms of the activity clearly afford students the scope to achieve higher-order learning outcomes.

AH and MPS differ from other programs in that these faculties require written outputs from the participants in Meet the Researcher, which the module leaders grade for credit. Fung (2017) emphasizes that Meet the Researcher activities give students an opportunity to present their findings and develop communication skills. But, in the results reported here, there is no association between *production* and higher-level outcomes. In fact, the opposite is true. MPS students are more likely to report

collaboration than *production* as an element of their experience. The contrast is sharper in AH, where *production* is the least frequently mentioned category, together with *discussion*. Although the finished output may determine how students distribute their effort, there is no evidence that it shapes their perceptions of what they are doing. In AH and MPS, students need to collaborate to make sense of what researchers have said (in interviews, via coding; or in research outputs, via reading and preparing for an interview). Problem-solving is more prominent in these iterations of Meet the Researcher than it is in LS, BS1, and BS2, where students investigate the researcher themselves, rather than the researcher's thinking as manifested in words and artifacts.

Through analyzing student experiences of Meet the Researcher, it is possible to better understand what students are doing when they learn about the work and activity of researchers in their program. Therefore, it can be claimed that passive research involvement is a pedagogical position in its own right. As Malcolm (2014) noted, frameworks modeling the relationship between teaching and research tend to figure passive research involvement as the absence of participation in research activities. The findings show that this is not the case. Passive research involvement has its own integrity: it comes in different forms and can be modified for different purposes. Furthermore, recent literature showcases Meet the Researcher activities on the grounds that it helps connect students with researchers and their work as well as makes a good first step in a wider program of turning students into researchers. With a clearer understanding of what students experience when they engage with research produced by staff, the intrinsically distinct and desirable outcomes of passive research involvement can be recognized. The following section describes some ways to develop this activity so that students can engage with faculty and staff research in increasingly sophisticated ways through the later years of undergraduate programs.

Practical Implications

Two possibilities follow from the claim that students learning about researchers and their work (what is termed here *passive research involvement*) is a meaningful activity in its own right. First, these activities need to be developed and extended, rather than led by a teleology that prioritizes students' participation in research activity. Meet the Researcher can be used in all years of undergraduate study to connect different elements of a degree program and help students foster their own understanding of research. Students can also use interviews to interrogate and demystify core academic skills such as the capacity to engage productively with feedback (Marie et al. 2019). Whatever the focus, there is opportunity for students to foster their own development by learning together with experts.

Second, the pedagogical virtues of passive research involvement can shed a more positive light on the early years of postsecondary education. The work here shows that students engage meaningfully with researchers and their work from the very start of their time at college. Passive research involvement also fosters meaningful relationships between new students and researchers. Recent research shows that students in the early stages of their degree have a poor understanding of the research process (Bage 2019; Brooks et al. 2019; Clark and Hordosy 2019). This work measures student awareness in the context of a three-year curriculum that culminates in a final-year project or dissertation. Such a trajectory will invariably show first-year conceptions to be unsatisfactory and incomplete. Rather than striving for students to conduct research so that the early postsecondary years match the later years, it should be acknowledged that high-level outcomes are possible when students learn about research from researchers and that this can be achieved in the earliest stages of undergraduate study. There is every reason to extend these activities into the later years of study while bringing more active research participation into the earlier years of the curriculum.

Limitations

A number of limitations exist. First, the question given to the students included examples of possible responses, which might have influenced students' responses. Indicating the range of possible answers would encourage a wider range of responses, but it may be the case that students failed to mention certain learning types as a result of the question that was asked. Second, in the LS, AH, and MPS programs, the question was administered by a staff member who was also involved in assessing the students' work. This may have influenced the students' responses. Third, the question had a response rate lower than 50 percent in four of the five programs included in the results. It is possible that the participants are students identifying some specific learning types. Fourth, the sequence of student experiences was not captured, which makes it difficult to evaluate the effect of module design on student experiences or to share and refine these designs—a key point in Laurillard's work. This is a possible area for future study. Finally, it is unclear why the 31 ABE students failed to complete the activity. The tasks of investigating and interviewing the researcher may have appealed more than producing a poster summarizing the key findings from the interview.

Conclusion

Using reports from 367 undergraduate students at a UK research-intensive university, this article has responded to recent research noting the vagueness of the term *passive research involvement* by defining what occurs when first-year undergraduate students engage with the work of researchers. A framework of formal learning to evaluate

student experiences of Meet the Researcher activities revealed a striking qualitative variation in student experiences. It seems that passive research involvement is not so passive after all. These results can provide a better picture of the early years of postsecondary education and show how students might engage with researchers and the institution's research in increasingly complex and challenging ways through all their years of study.

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