

Exploring a Qualitative Methods Approach to Measure Learning Gain in Teaching Assistants: A Chinese Case Study

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Abstract: This paper explores the use of a range of qualitative methods to measure learning gain of teaching assistants (TAs) in mainland China at a Sino-British University where the authors used to work. It uses a case study to report on an evaluation of TA training at the University, which is part of its Postgraduate Research Development Programme, to ascertain students' acquired skills and skills gaps. A key focus of this evaluation consists of exploring ways to measure learning gain for individual TAs. As teacher educators, the researchers delivered TA training, conducted specialist observations of TAs' teaching practice, as well as a series of 'Learning to Teach' groups. Measuring individual learning gain of TAs occurred during the semester and at the end of the semester. Criteria and measurements were tested to explore how learning gain of TAs could be measured in a Chinese higher education context. Implications outlined in this paper could be useful for TA training in higher education settings. Key findings include that evaluation of learning gain should occur at different points in time, as well as be continuous, consistent and comprehensive. In other words, multiple approaches, including both quantitative and qualitative methods, could capture a more objective picture of TAs' learning gains.

Keywords: Chinese Higher Education; Teacher Educators; Learning Gain; Teaching Assistant Training; Transnational University

1. Introduction

Attending university can be a challenging experience for most of the new undergraduate students (Novel, Ajisukmo, & Supriyantini, 2019). Thus, teaching assistants (TAs) play a very important role in contemporary university contexts as they support undergraduate students' learning. At the same time, being teaching assistants helps postgraduates to develop their own skills and career readiness (Docherty & Fernandez 2014). However, despite the importance of the role, TAs receive limited training, and the training they do receive often tends to be 'front-loaded', before they begin their TA practice. This is to some extent the case at Xi'an Jiaotong-Liverpool University (XJTLU) where the researchers used to work. However, more recently steps have been taken to expand the training and support available for TAs. This is particularly important in a transnational university where, in effect, UK degrees are being taught in a Chinese context (expectedly via EMI /English as Medium of Instruction), and its degree programmes are accredited by the University of Liverpool and 'quality assured' by the QAA in the UK. In addition, the university prides itself on being a research-led university, using student-centered teaching methods, including research-led teaching as a key learning and teaching approach (Healey, Jenkins, & Lea 2014). Thus, not only are TAs at XJTLU expected to teach with very little training, they are also expected to teach in ways that may not be familiar to them. For this reason, additional support for TAs has been developed by the researchers, including for example

'Learning to Teach' Groups, which are envisaged as variations of Communities of Practice (Wenger, McDermott, & Snyder 2002), and opportunities for teaching observations.

This paper reports on a case study that evaluated the learning gains achieved as a result of the changes made to the programme and the TA training offered. Thus, a qualitative mixed-methods approach was used to identify and, where possible, measure perceived learning gains of TAs. As noted in the Rand Report (McGrath et al. 2015), qualitative methods are "currently most suited to individual measurements of learning gain rather than institutional comparability" (p.xvi). Thus, we have used a combination of surveys, individual and paired interviews to paint an in-depth picture of the perceived value and learning gains that result from the combination of TA training and support provided at a transnational university in China. This level of training and support for TAs is currently unusual in a Chinese higher education context.

With regards to learning gain, we reiterate here that we measured self-reported perceptions of learning gain, rather than using a statistical measure. This was appropriate, as some of the key outcomes of the TA training was for example increased confidence in the ability to teach, which could essentially only be 'measured' by self-reporting. In this paper, some suggestions are offered on how learning gain may be measured more effectively in the future, including how more depth could be added to the self-reporting process. Still, the exploratory nature of this current study needs to be pointed out from the outset, as efficacy of the TA training programme in question, and indeed of learning gain, is an incremental process, and thus the data available in this paper is necessarily partial, which, however, does not make this study less necessary and significant.

2. Context and Rationale

According to its vision, XJTU aims to be a research-led international university, based in mainland China, and was founded in 2006 jointly by Xi'an Jiaotong University (China) and the University of Liverpool (UK). As an independent Sino-Foreign cooperative university, it was the first of its kind to be approved by the Ministry of Education in China. Currently it has over 50 undergraduate and postgraduate degree programmes, and the majority of these degree programmes are taught in the English language with exceptions for those modules required as part of the Chinese degree.

As an EMI (English as medium of instruction) university however, learning and teaching processes tend to be juxtaposed with research, rather than treated as being of equal worth, and are thus often regarded as secondary issues by a large majority of faculty. This has implications for TAs, as the primary focus of their module/course leaders who are supposed to support them in their teaching practice, may lay elsewhere. A further challenge is that, as a transnational university, XJTU has a large influx of international staff from wide ranging educational backgrounds and environments who may bring with them preconceived (mis)conceptions and (mis)understandings of learning and teaching, especially in a cross-cultural context in China, which presents some unique challenges (Jin & Cortazzi 2006).

Teacher Educators at XJTU are tasked with improving learning and teaching across the organisation, and TA training is therefore part of its remit. TA training is incorporated under the Postgraduate Research (PGR) Development Programme (or PhD Research Skills Training Programme), which was established (by the researchers) and implemented in August 2015; the current paper is based on this two and a half year long programme. TAs are PhD and Masters students and research assistants, who undergo training at XJTU before they begin teaching, and thereafter. A small number of Master Degree students from outside XJTU also participate in the training, if they perform part-time teaching duties at XJTU. All TAs are required, as the University policy states (2015b), to take part in a compulsory one-off training workshop prior to teaching their first lessons. This university-wide one-off workshop was designed and taught by two teacher educators (the researchers), both of whom also developed and ran the overall PGR Development Programme. However, there was very limited follow-up training and engagement at XJTU, making it difficult to measure learning gain, and consequently to improve the training, or expand it if appropriate. Consequently, even the perceived value of the training was difficult to ascertain. Therefore, starting in 2016, a follow-up workshop was designed and a series of 'Learning to Teach' group sessions was being provided. Furthermore, TAs could then contact the PGR team for a teaching observation, after which they would receive a written report with feedback,

which was then discussed in a follow-up conversation. Some research has shown that post-lesson discussions are restrictive of learning (e.g. Hobson & Malderez 2013, p.7), but there is no evidence this was the case for TAs at XJTLU. Firstly, teaching observations were entirely voluntary, and secondly, they were preceded by a conversation between the TAs and the Teacher Educator during which the observation was discussed and during which the TAs could indicate which aspects of their teaching (if any) they would like the Teacher Educator to focus on. In other words, this was more like a ‘friendly conversation’, and ‘judgementoring’ (Hobson & Malderez 2013, p. 90) was consciously being avoided. Moreover, classroom observations are elsewhere advocated as a tool for measuring teaching quality (Cohen & Goldhaber 2016).

In our experience, teaching is not viewed as ‘most important’ by many academics and teaching responsibility is not always taken as priority because most TAs are PhD candidates, and so they tend to approach their teaching practice pragmatically, i.e. they prefer a quick solution to problems, or they ignore such problems altogether. This is one of the reasons we also ran the ‘Learning to Teach’ Groups in which TAs could discuss their problems or concerns with their peers and with Teacher Educators, thus providing another potential avenue for feedback apart from the dedicated and individualised teaching observation.

The case study in this paper reports on an evaluation of these initiatives, as well as the initial workshop, in order to ascertain perceived learning gain of TAs at XJTLU.

3. Theoretical Underpinnings

McGrath et al. (2015) define learning in its simplest terms as “distance travelled or learning acquired by students at two points of their academic career” (p. 8). In that sense it is different from learning outcomes, as learning outcomes are purely an output measure at one particular point in time, while learning gain is measured between two specific points in time (Biggs 2003). Thus, if measured within a programme of study, which includes assessment, there are ways of measuring the learning gain, for example in the form of test scores, between two specific points in time (e.g. year one and year two) (McGrath et al. 2015). However, our case study presented a rather different proposition in that the TAs whose learning gain we were attempting to gauge did not get assessed in a conventional way, at least not in a direct manner. This presented a challenge as it removed one of the recommended and most obvious measurements of learning gain, i.e., test scores. Secondly, our programme for TAs only included one mandatory workshop, which was two hours long and again, did not involve assessment. This then raised the question of how, and indeed *whether*, learning gain could be measured in the context of this case study, which ultimately related to the potential methods that could be used. The key issue in our case was that the ultimate learning gain for students was secondary, for example in the form of the impact that TAs might have had on the performance of the students whom they taught. This was very difficult, if not impossible, to measure, as it would involve a cause and effect scenario with too many variables. We therefore only focused on the learning gain of TAs themselves, and only insofar as it related to the training and other initiatives that we provided.

If we then evaluated our case study against the criteria that McGrath et al. (2015, p.13) identify as being part of “attributes that contribute to robust methods of measuring learning gain”, we could identify a number of further challenges. For example, many of these attributes are related to quantitative methods and relatively long periods of time for measurements: e.g., longitudinal design, statistical validity, representativeness, comparability across disciplines, comparability across institutions, and comparability across countries. Of these, longitudinal design was definitely part of the planning, but we were in the early stages of measuring learning gain, so a full longitudinal design (study) was not yet available. However, a potential longitudinal *element* could be a form of measurement across ‘Learning to Teach’ Groups for one semester (one session in each of the three months), through which TAs could be seen to have obtained, perhaps in an incremental way, learning gain relating to their teaching practice. Again, this would mostly be a perception of learning gain, as it relates to elements such as increased confidence, which are challenging to measure, if not impossible.

Thus, since there was little opportunity to collect quantitative data in our programme, due to the continuous turnover of TAs, and the relatively short period of their employment as TAs (e.g., one semester in some cases), the focus was squarely on qualitative methods, which were ultimately planned

to be deployed in the form of a Personal Development Portfolio (PDP) (McGrath et al. 2015, p.37). Teaching practice would be included in such a portfolio, as well as other research skills. In terms of a longitudinal measurement tool, we envisaged that PDPs of different cohorts of TAs could be compared over time, which could then potentially provide learning gain measures over time in a comparative sense. Furthermore, as the TA training was partly concerned with developing a professional identity (of a teacher and/or academic), the UKPSF (The UK Professional Standards Framework) (Higher Education Academy 2011) could potentially be used as a self-reflection tool for TAs. This would provide an additional benefit of a framework that had particular areas of focus and that had a number of descriptors that were measurable, even if mostly in a qualitative sense. Moreover, it allowed for the demonstration of development over time, which involved a requirement to back up claims of ‘learning gain’ by evidence of professional practice. The UKPSF framework has the added advantage that it is thoroughly familiar for Teacher Educators (the authors), as XJTLU works closely together with Advance HE (previously the Higher Education Academy) in its Fellowship programme. This could potentially be used in the future to create pathways towards Associate Fellowships for TAs, which would provide an increasingly robust potential measurement framework for TAs’ learning gain.

However, as it stands, the limitations (such as a lack of assessment tools, and short employment periods of TAs) in this case study made our qualitative mixed methods approach the best way to conduct our exploratory study of TAs’ learning gain. Our objective was not to evaluate the efficacy of a particular TA training programme (as like e.g. Boman 2013) nor quantify the data, but to ascertain, in the first instance, what TAs’ own perceptions were of their learning gain as a result of taking part in the TA training and other initiatives targeted at supporting TAs and developing their teaching skills. Based on these exploratory data, we aimed to develop more robust ways of collecting data on learning gain in the future and on a longitudinal basis, for example in the form of PDPs, and by using the UKPSF (2011).

4. Approach and Implementation

Our qualitative mixed-methods approach followed an exploratory framework, by which we mean that given there had been no previous investigation into teaching assistant training, we attempted to use multiple ways (forms) to identify and capture TAs’ perceived learning gain as comprehensively as possible.

There were two main dimensions in our exploratory approach: firstly, the range of data we collected through this current study; and secondly, a variety of feedback we collected *after* all the mandatory training workshops, the follow-up training sessions, and the specialist observations, as well as *during* the aforementioned “Learning to Teach” group sessions. In the first instance, TAs were asked to provide feedback at the end of the one-off compulsory workshop, and the following exemplify some of their responses to the initial workshop:

A very useful session, now I have an idea on how to become a TA. I enjoy the session very much. THANKS! [TA #A]

Everything is good, especially the practice part, help me to be more confidence around people. Thanks! [TA #B]

I’m really happy with the training. It’s important to me interact with other students because I’m really focused in my project that I forget to talk with more people about other topics; interaction helps to learn and share ideas... [TA #D]

This session is very interesting and useful. I now get more deep understanding about TA’s responsivity, rules and duty. [TA #E]

Post-workshop feedback was collected with the aim to get a sense of what the TAs regarded as the most useful part of the workshop, and what they perceived as area(s) of the workshop that needed to be improved. This was designed to identify key conceptual themes from the initial feedback, and in this

sense our analysis of the feedback is content analysis (Ungvarsky 2017). The themes thus identified were then further explored.

The feedback to some extent could be seen as the TAs' immediate reflection on their learning gain. For example, TA #A and TA #E indicated that they, via the workshop, gained an understanding of the transition from a student to a TA, which involves the construction of their role/identity as a teacher, academic, and a professional. Students (TAs) referred to this kind of 'transition' as opposed to more administrative matters, because our workshop explicitly focused on teaching and learning on a pedagogical level. TA #B implied that they had learnt something very practical, albeit difficult to measure, in the form of confidence in front of people as a teacher. This is an especially important 'learning gain' in a Chinese context, where public speaking carries the relatively high risk of losing face (Jin & Cortazzi 2011). Of course, this is not unique to a Chinese context, and it certainly applies to TAs as beginning teachers in other contexts (Cox et al. 2011; Young & Bippus 2008; McClure 2007). However, this issue is generally more pronounced and more salient in a Chinese context. In addition, according to TA #D, one perceived learning gain was the opportunity to communicate with peers about topics outside just their PhD projects. For this reason, TA #C would encourage other TAs to take up teaching in various forms:

It is my second workshop in XJTLU, and probably the best one. I would suggest to ask TA candidates to teach for all other students cause sometimes [...] of students would living pressure.

Secondly, regarding the follow-up workshops involving collaboration with two module leaders (departmental academics), which were designed for current TAs with some teaching experience at XJTLU, one attendee wrote, "Thank you, this is very useful", and in particular, they found the "the brainstorm of issues" most useful. This brainstorm referred to the discussion the authors designed for the training in relation to "the difficulties, challenges, puzzles, etc. the TAs encountered in their teaching", "things that work well" and "the potential solutions". The TAs' notes showed that they had learnt something from the brainstorm discussion, even if the specific learning gain was not specified.

Thirdly, the specialist observations provided the TAs (and/or their module leaders, if they were involved) with an opportunity to reflect on their teaching practice and receive our feedback and advice on how to improve their teaching practice. Fourthly, in one of the "Learning to Teach" Groups, one of the Master degree TAs came along to ask for advice on a particular problem they had been struggling with: how to interact effectively with their students (undergraduates) in the classroom, and how to engage them better. Again, we made sure not to 'judgementor' (Hobson & Malderez 2013) or evaluate this TA's teaching performance, nor did we spoon-feed him, but rather, we explored possible 'solutions' together through co-constructive discussions between peers and us.

Prior to conducting this study, institutional ethical procedures were completed and the University Ethics Committee's approval was obtained. An online survey (see Appendix) was designed and structured according to the content of the mandatory one-off training workshop, i.e., our training materials (Xie & Huijser 2017), so that the students could link this study to the initial training we had provided them with. Moreover, they had an opportunity to review what they had learned in that workshop, whether or not they had subsequently developed or applied those skills, and what learning gains they would want to achieve in the future. There was limited practice time in the initial two-hour workshop we provided. However, TAs were asked to undertake a 'mock teaching' activity, sometimes referred to as 'micro teaching' (Santandreu Calonge et al. 2013), which enabled them to design a simple lesson-plan, teach a '3-minute lesson' individually to the group, and then receive their peers' constructive feedback on their teaching performance. We designed this activity for the TAs to get a taste of the teaching process: what they needed to consider as TAs before, during and after a lesson. This activity was seen by the majority of TAs as 'most useful'.

The survey was distributed to 137 teaching assistants, 23 of whom accessed the questionnaire. These 137 TAs included the registered PhD and Master candidates based at XJTLU (and some external) who participated in our one-off compulsory training between September 2015 and February 2017. The teaching periods they undertook varied, ranging from just one semester to continuing throughout the

two years (2015-2017), while some may have already graduated from the university. Hence that would have had an effect on our survey response rate.

While only three respondents fully completed the survey, other respondents only responded to some of the survey questions. However, given the qualitative nature of this case study, the partial responses still added significant value to the overall data set for this case study, as they addressed selected themes, which could then be further explored in the subsequent interviews. The low response rates to the survey were likely due to a combination of survey fatigue and a perceived lack of relevance to some TAs for whom teaching was a compulsory requirement, rather than a passion; that is, for many of them the key focus was on their PhD research.

As an additional method, face-to-face interviews with five TAs were conducted and recorded. The semi-structured interview questions followed a similar set of questions to the online survey, with some flexibility in the structure. We conducted one individual interview and two paired interviews, which explored the learning gains as perceived by TAs based in the same department and/or from different cultural backgrounds. We used duo interviews to ‘encourage quality discussion’ (Duthie et al. 1999, p.146), hoping to hear different perspectives and opinions, as the duo TA interviewees happened to be based in the same department(s) and represented different backgrounds (local and overseas). Thus, we evaluated the TAs’ learning gains (i.e., gains in learning to teach) based on the different data sources outlined above.

5. Evaluation and Limitations

The survey respondents and interviewees brought up a wide range of aspects relating to their TA roles and practice at XJTLU, as well as their status as PhD candidates. Here we will focus our evaluation on the points (learning skills) that are most pertinent. The key themes to come out of the interview data were the following: pedagogical skills, impact of prior learning, teaching in English, guidance/support from supervisors, and teaching-research nexus.

The process of our theme identification was incremental: when the interviews were being recorded, one of us was also taking notes, and so we read through these notes in the first instance to identify any salient themes, that is, a preliminary form of thematic analysis (e.g., Miller 2016; Braun & Clarke 2006). We then revisited the survey questions (Appendix 1) and checked whether the identified salient themes would align with any of the survey questions. During this process we referred back and forth to the interview records (transcripts) to ensure we interpreted the interviewees’ meanings appropriately – this second process was an important part of our data analysis. Thirdly, we compared these salient themes with the text-responses from the survey; and fourthly, we again read through all the available data to identify the ‘most pertinent’ themes, in other words, those themes that the interviewees addressed most frequently and most in depth, which then led to the five themes that follow. In brief, our approach is consistent with narrative data analysis for qualitative research, which involves multiple levels of interpretation (Kim 2015).

5.2 Pedagogical Skills

Firstly, all the TAs who participated in our study pointed to the same key skill they wanted to learn and though they needed in the future: skills and techniques for engaging students in the classroom.

I found it difficult to attract students’ attention. The first class like, I had 30, or 40 students. But the next class, some of them just disappeared forever. I’m not sure if my teaching isn’t so good; if my teaching not so good, but they can tell me or just email me directly, let me know my problems, but they just disappeared. [TA #3]

The participants addressed this perceived need from various angles, for instance, “How to explain knowledge points to students as clear as possible.” [TA #13], and:

For me, I think that some of the skills that I need to learn is that how to manage a group of students. Especially for me I have experience in western, with western students, it’s quite

different here, because the culture is so different. For example, now I have more contact with master students, and some of them need a lot of guidance. And for me, it's strange sometimes, because in the west you just say, you need to do this, and they try to do it. But here it's different, they are waiting to...so that's the main problem for me. [TA #1]

So they're waiting for instructions basically? [Interviewer #1]

Yeah. I don't want to be rude...this is polite, this is not polite, and also with the Chinese, the students, we have to have the same rules, also the PhD students, the foreign students, to help their undergraduate students to see the same way. Because if not, they prefer to go with the Chinese TA, rather than the international one. So, this is one of the, the culture shock we need more support to understand. [TA #1]

As for me, I was doing my undergraduate here, there was no TA in the lab, just technicians, so for me I don't understand what the TA should do in a lab. So they don't know what they're doing. So they just rely on us, expect us to explain everything. So, for one student or two student, that's fine, but if the group of the students don't understand what you're talking about. [TA #2]

This paired interview thus shows that TAs wanted to learn about how to lead or facilitate a class (especially in a lab environment). For the international (non-local) TAs, there were influential factors in relation to cultural shock, language barriers, and differences in understanding of learning in higher education. For the local (Chinese) TAs, there were struggles with motivating students and encouraging learner autonomy, and distinguishing between the roles of TAs and technicians.

5.3 Impact of Prior Learning

For some TAs, the learning and/or teaching experience they had gained prior to their PhD/TA experience at XJTLU actually conflicted with the local (Chinese) learning and teaching culture within the Chinese higher education sector. Training in fundamental Chinese and western educational notions, pedagogies, and teaching skills and methods was perceived as very necessary, as TAs would not necessarily know what appropriate classroom behaviour would be. TAs who had received their education within a similar educational context, were not necessarily sure either how to cope with issues such as students' lack of motivation for pre-class preparation. At the same time, subject-specific training, such as 'designing a lab session', was considered by a number of TAs as necessary, especially at the initial stage of the TA teaching experience.

Thus, it was important early on in the process for TAs to participate in these forms of training, so that they could use these teaching skills to build on in their own teaching practice.

5.4 Teaching in English

This seemed to be a key factor in how local (Chinese) TAs and international TAs viewed their teaching experiences differently, and for different reasons. Chinese TAs frequently mentioned the difficulty of having to teach in English even though the vast majority of their students were Chinese and therefore often addressed them in Chinese. For the same reason, many of these students preferred a Chinese TA, which in turn presented challenges for the non-Chinese speaking TAs. In both cases, the need for some guidance and training to be able to address this issue was considered to be important. Both cases also related to the issue of internationalisation and development of 'global graduates' (e.g., Liu 2017), in particular, qualities such as communication skills and an ability to work with people from different cultures/backgrounds were identified as important by leading employers (Spencer-Oatey & Dauber 2016).

5.5 Guidance/Support from Supervisors

Tying back to ‘pedagogical skills’, the TAs also felt the need for more guidance from their own module leaders, tutors or PhD supervisors about how to mark and assess student assignments. In other words, they often felt unprepared and therefore not very confident if they were asked to assess students. Furthermore, they were not always clear on the relevant policies around this, and how such policies related to them.

Well, I actually did that workshop a long time ago, and I’m kind of rusty about what I learnt; but I think I was able to put most things into practice in the sense that, one of the policy might be punctuality, we need to be punctual, so I tried to get to the TA sessions very early. Another thing is module data, what’s allowed, because they wanted you to do extra things, ‘Can you mark this?’ I think at the start, when I started I don’t think PhD students are allowed to grade some kind of assignments, as we progress they felt that they need to include that for PhD students, not master TAs, so at the beginning some lecturers also wanted to some PhD students to grade, but I don’t think that’s allowed, but sometimes changed, so that’s something I may have to forward. In those cases, we try to approach the lecturers and tell him, what we’re supposed to do, what we are allowed to do. [TA #4]

Yes, definitely, because once you start to mark, you kind of like, you may kind of go, we’re not supposed to think, “Should this student get 10 marks, or only 5 marks in this place?” I think the teachers are supposed to guide you, say, “This is what deserves 10 marks, this is what’s good for 5 marks”, stuff like that, until you’re used to that kind of marking, then you’d be given more freedom to decide how to give the scores, for each student. [TA #4]

Marking scheme. [TA #5]

Yeah! Well, they always provide the marking scheme, but they didn’t put the fixed scores, so, I mean, and we have lots of TAs, one TA in my field feels, “Oh, this student deserves 10 marks.” The other TA feels he deserves 5 marks. And so when the students see the results, they wanted to come back and find the TAs and [ask] “Why did you give me this mark?” Actually at times it got really confused, because we have, I think we have almost 10 TAs grading these assignments for huge class, and everyone gives his – [TA #4]

By contrast, if the TAs had not, for whatever reason, taken part in the compulsory workshops or any other additional and follow-up training that we provided, they needed to turn to their own subject-teachers more often:

Normally because I don’t have the time, I don’t have the chance to attend the TA lessons so far, so I just through the communicating with my lecturers, and told them the problems I faced, and then they would provide some solutions. [TA #3]

5.6 Teaching - Research Nexus

The ‘TA teaching-PhD research’ nexus was another clear theme: “I need to find ways to achieve balance between my TA works and my research.” [TA #13] This is in line with the findings by Santandreu Calonge et al. (2011) who note that many postgraduate teaching assistants faced a dilemma, or even conflict, between their teaching duties and research responsibilities. In particular, our TAs (e.g. TA #2) felt that teaching helped them to build up self-confidence as a TA and a PhD candidate at the same time – for them, it was a mutually beneficial and reinforcing arrangement. By contrast, however, not all TAs considered their teaching-research duties to be a reciprocal relationship. A question then arises: is TA teaching useful when doing their own PhD research project, and vice versa? The interviewees suggested that the university/departments/module leaders should consider how to integrate the two different tracks for the good of TAs, instead of just employing TAs to cover teaching duties.

Issues raised included: the situation in which the teachers, TAs and technicians gave different answers to the same questions from students; differences in roles and responsibilities for TAs and technicians (in science subjects); practical ways of answering questions; guidance for assessment from module leaders; need for learning how to mark; teaching large size classes; and class co-delivery by TAs – team work.

I think the department should teach the TAs to become, like teachers in the XX department, by teaching in different modules, not just the same module every year. Maybe...Looking back...let me see, oh, the students don't want to approach the foreign teachers, because, they want to speak Chinese. [TA #4]

For me, looking back I learnt so many things, definitely. Like, how to deliver something that could be useful for somebody to learn. I wouldn't say I learnt so much, how to coach, but, I have some ideas of...how to create a course. [TA #5]

In all, learning gain related to at least four key points that TAs brought up:

- Whether or not the TAs had taken the compulsory one-off workshop, in other words, whether they had completed introductory teacher training leading into their teaching practice;
- The TAs' backgrounds in terms of previous teaching training and experience, cultural and language differences;
- The TAs' views of the relationship between their own teaching and their PhD research, and the TAs' interest/motivation in teaching per se;
- Departmental guidance from module-leaders and/or their peers.

In a wider sample, further themes are likely to come up, which may be easier to measure, in terms of learning gain, in the short term and depending on the context. However, using a single framework in a transnational context (e.g. The UK Professional Standards Framework 2011), to measure the learning gain of *all* the TAs at one local (Chinese) university, may not always be appropriate, as acknowledged by the UK government (DBIS 2016, p.44): "It is not the intention of the TEF to constrain or prescribe the form that excellence must take." This ultimately leads to the question: if learning gain (efficacy) of TAs were measured, what relevant framework(s) and factors should be considered, including the local language and pedagogy variables?

6. Conclusion

The researchers gleaned the data from a 2.5 year long TA training programme in a transnational university and used a qualitative methods approach (including written texts, survey and interviews) to evaluate TAs' perceptions of their learning gain from teacher training. Although the volume of data this paper collected was small/limited, it addressed a field that was under-explored in China, namely the learning gain/efficacy of postgraduate teaching assistants in the higher education sector, and in this sense it could shed some light on an even bigger issue - improving the quality of teaching in HE, especially in the domain of TA training.

The evaluation in this case study has not so much been concerned with TAs' pedagogical practices per se, but rather with the influence of their previous experience in teaching, their understandings of what education, teaching and learning in higher education should be, their opinions about the function of Chinese and English languages in the classroom at an EMI university, and what roles and responsibilities the TAs should perform.

Thus, when we, as teacher educators and researchers, investigate and evaluate learning gains, we need to look at the bigger picture and pay attention to the TAs' backgrounds in terms of their understandings of educational and philosophical notions relating to learning and teaching, their cultural differences, their linguistics proficiency, and their previous teaching experiences. The TAs' own perspectives of their learning gain is important, yet not enough. Evaluation of learning gain should occur at different points in time, as well as being continuous, consistent and comprehensive. In other words, multiple approaches in addition to those we used for this case study, and including both quantitative and

qualitative methods, could help us to capture a more objective picture of TAs' learning gains. This case study has provided an initial step in that direction. The next step may be to integrate a framework for evaluation into the process that has a longitudinal element (the UKPSF for example, or Vitae's Researcher Development Framework 2011), and which is based on developing a professional teacher (and researcher) identity, which involves measurable learning gain over time.

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8. References

- Anderson, D. & Burns, S. (2013). One-minute paper: student perception of learning gains. *College Student Journal*, 47(1). Retrieved 25 April 2017 from <http://eds.b.ebscohost.com.liverpool.idm.oclc.org/eds/pdfviewer/pdfviewer?vid=1&sid=609327c6-9000-4ce7-8afb-0a1e70bf200b%40sessionmgr102&hid=113>
- Biggs, J. B. (2003). *Teaching for quality learning at university* (2nd Ed.). Buckingham: Open University Press/Society for Research into Higher Education.
- Boman, J. S. (2013). Graduate Student Teaching Development: Evaluating the Effectiveness of Training in Relation to Graduate Student Characteristics. *Canadian Journal of Higher Education*, 43(1), 100-114.
- Braun, V. & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3, 77-101.
- Cohen, J. & Goldhaber, D. (2016). Building a more complete understanding of teacher evaluation using classroom observations. *Educational Researcher*, 45(6), 378-387. doi: 10.3102/0013189X16659442
- Cox, M. F., Hahn, J., McNeill, N., Cekic, O., Zhu, J., & London, J. (2011). Enhancing the quality of engineering graduate teaching assistants through multidimensional feedback. *Advances in Engineering Education*, 2(3).
- Crotts Roohr, K., Huili Liu, H. & Liu, O. L. (2016). Investigating student learning gains in college: A longitudinal study. *Studies in Higher Education*. doi: <http://dx.doi.org/10.1080/03075079.2016.1143925>
- Department for Business Innovation & Skills (DBIS). (2016). *Success as a knowledge economy: Teaching excellence, social mobility and student choice*. Retrieved from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/523396/bis-16-265-success-as-a-knowledge-economy.pdf
- Docherty, D. & Fernandez, R. (2014). *Career portfolios and the labour market for graduates and postgraduates in the UK: A report to the Higher Education Funding Council of England*. London: National Centre for Universities and Business.
- Duthie, T., et al. (1999). Research into the use of health economics in decision making in the United Kingdom — Phase II Is health economics 'for good or evil'? *Health Policy*, 46, 143–157.
- GOV.UK. (2017). *Collection teaching excellence framework*. Retrieved from <https://www.gov.uk/government/collections/teaching-excellence-framework>
- Healey, M., Jenkins, A., & Lea, J. (2014). *Developing research-based curricula in college-based higher education*. Heslington, UK: The Higher Education Academy.
- Higher Education Academy (HEA). (2011). *The UK Professional Standards Framework*. Retrieved from <https://www.heacademy.ac.uk/system/files/downloads/UKPSF.pdf>
- Hobson, A. & Malderez, A. (2013). Judgementoring and other threats to realizing the potential of school-based mentoring in teacher education. *International Journal of Mentoring and Coaching in Education*, 2(2), pp. 89-108.
- Jin, L. & Cortazzi, M. (2011). Introduction: Contexts for researching Chinese learners. In L. Jin & M. Cortazzi (Eds.). *Researching Chinese learners: Skills, perceptions and intercultural adaptations* (pp.1-18). Houndmills, UK: Palgrave Macmillan.

- Jin, L., & Cortazzi, M. (2006). Changing practices in Chinese cultures of learning. *Language, Culture & Curriculum*, 19(1), 5-20.
- Kim, J. (2015). *Understanding narrative inquiry: the crafting and analysis of stories as research*. London: Sage.
- Liu, C. (2017). It needs to step out to develop a global vision: Reflection on my participation in 7th JCK Youth Forum. *The Elite Reference*, A08 Communication.
- Malderez, A. & Wedell, M. (2007). *Teaching teachers: Processes and practices*. London: Continuum.
- McClure, J. W. (2007). *A blended approach in a graduate teaching assistants' pre-service course to promote self confidence*. Retrieved from <http://www.ascilite.org.au/conferences/singapore07/procs/mcclure.pdf>
- McGrath, C. H., Guerin, B., Harte, E., Frearson, M., & Manville, C. (2015). *Learning gain in higher education*. Santa Monica, CA & Cambridge, UK: RAND Corporation. Retrieved from http://www.hefce.ac.uk/media/HEFCE,2014/Content/Pubs/Independentresearch/2015/Learning_gain,in,HE/Learning_gain.pdf
- Miller, S. P. (2016). Thematic analysis. *Salem Press Encyclopedia*. Retrieved August 10, 2017, from the Research Starters Database, University of Liverpool online library.
- Novel, F., Ajisuksmo, C. R., & Supriyantini, S. (2019). The Influence of Processing and Regulation of Learning on Academic Achievement Amongst First Year Undergraduate Psychology Students in University of North Sumatra. *Asian Journal of University Education*, 15(2), 36. doi:10.24191/ajue.v15i2.7555
- O'Neill, G & McNamara, M. (2016). Passing the baton: A collaborative approach to development and implementation of context-specific modules for graduate teaching assistants in cognate disciplines. *Innovations in Education and Teaching International*, 53(6), 570-580. doi: 10.1080/14703297.2015.1020825
- Santandreu Calonge, D., Kai Pan, M., Chiu, P., Thadani, D. R., & Pun, C. (2013). Extreme-Teaching-2 (XT²): Evaluation of an innovative semester-long intensive GTA training program based on microteaching. *International Journal of Teaching and Learning in Higher Education*, 25(1), 129-143.
- Santandreu Calonge, D., Chiu, P., Thadani, D. R., Kai Pan, M., & Pun, C. (2011). In-service development for graduate teaching assistants: A blended-learning and formative approach. *Journal of University Teaching & Learning Practice*, 8(3). Retrieved from <http://ro.uow.edu.au/jutlp/vol8/iss3/3>
- Spencer-Oatey, H. & Dauber, D. (2016). The gains and pains of mixed national group work at university, *Journal of Multilingual and Multicultural Development*, DOI: 10.1080/01434632.2015.1134549
- Ungvarsky, J. (2017). Content analysis. *Salem Press Encyclopedia*. Retrieved August 9, 2017, from the Research Starters Database, University of Liverpool online library.
- Vitae. (2011). *Researcher Development Framework (RDF)*. Retrieved August 28, 2017, from <https://www.vitae.ac.uk/vitae-publications/rdf-related/researcher-development-framework-rdf-vitae.pdf/view>
- Wenger, E., McDermott, R., & Snyder, W. (2002). *Cultivating communities of practice*. Boston, MA: Harvard Business School Press.
- Wilcox, S. (1998). The Role of the Educational Developer in the Improvement of University Teaching. *The Canadian Journal of Higher Education*, XXVIII (1), 77-104
- Xi'an Jiaotong-Liverpool University (XJTLU) (2015a). *Code of practice on postgraduate research teaching duties at XJTLU*. Xi'an Jiaotong-Liverpool University Institutional policy document.
- Xi'an Jiaotong-Liverpool University (XJTLU). (2015b). *Teaching Assistant Policy*. Xi'an Jiaotong-Liverpool University Institutional policy document.
- Xi'an Jiaotong-Liverpool University (XJTLU). (2015c). *Teaching Prizes*. Xi'an Jiaotong-Liverpool University Institutional policy document.
- Xi'an Jiaotong-Liverpool University (XJTLU). (2015d). *Teaching Prizes Nomination Form*. Xi'an Jiaotong-Liverpool University Institutional policy document.
- Xi'an Jiaotong-Liverpool University (XJTLU). (2016). "Learning and Teaching." Retrieved from <http://www.xjtlu.edu.cn/en/study-with-us/learning-and-teaching>

- Xie, J. & Huijser, H (2017). *PowerPoint slides for teaching assistants workshop – Roles, responsibilities and good practice*. Unpublished file. Xi'an Jiaotong-Liverpool University (XJTLU).
- Young, S. L., & Bippus, A. M. (2008). Assessment of graduate teaching assistant (GTA) training: A case study of a training program and its impact on GTAs. *Communication Teacher*, 22(4), 116-129.

Appendix A

Survey for Teaching Assistants Workshops at XJTU

(Note: The actual/original survey link contains the author's name and therefore it is not given in this paper; and it could be provided upon request.)

Dear Teaching Assistants,

You are invited to fill in this short survey about Teaching Assistants' (TAs) workshop. There are only 11 short questions, and it will take you no more than 10 minutes to finish.

Confidentiality and anonymity will be assured, so no one who fills out this survey will be identified.

We hope to hear from you soon. Thank you!

Educational Developers, XJTU

There are 11 questions in this survey.

Skills Taught in the TA training workshops, and applying the skills

□

Skill-1: Understanding the institutional policies of being Teaching Assistants

- How have you applied this skill in practice?

*

Please write your answer here:

□

Skill-2: Understanding some educational and philosophical notions relating to learning and teaching

- How have you applied this skill in practice?

*

Please write your answer here:

□

Skill-3: Discussing Teaching Assistants' roles, responsibilities, and duties

- How have you applied this skill in practice?

*

Please write your answer here:

□

Skill-4: (Learning pedagogies) Learning the detailed procedures and tasks Teaching Assistants need to do before/during/after your lessons

- How have you applied this skill in practice?

*

Please write your answer here:

□

Skill-5: Practicing teaching skills via mock-teaching to peers

- How have you applied this skill in practice?

*

Please write your answer here:

□

Skill-6: Getting feedback from peers and Educational Developers

- How have you applied this skill in practice?

*

Please write your answer here:

□

Skill-7: (For PhD Teaching Assistants) Learning some basic regulations of assessment and marking

- How have you applied this skill in practice?

*

Please write your answer here:

Are there any skills you weren't taught but you need or are using in practice? *

Please write your answer here:

What challenges or difficulties have you encountered in your TA experience and during your teaching lessons? *

Please write your answer here:

□

Are you a PhD researcher or Master Degree student?

*

Choose one of the following answers

Please choose **only one** of the following:

- PhD researcher
- Master degree student

□

Would you like to participate in a face-to-face interview (about 20-30 minutes long) about 'Learning to teach'? If yes, please tell us your email address.

*

Please write your answer here: