Influence of size and distribution of teaching groups on quality characteristics

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Community-based academic development approaches, such as communities of practice and learning communities, commonly result in strongly positive effects for participating academics. Yet, the overall impact on learning and teaching across higher education institutions is limited, as the participation rates in general are low. Based on this context, the research reported on here investigates a new approach to academic development called ‘teaching groups’. Teaching groups are defined as groups of academics who teach together into subject areas or degree programmes. The research proposes that teaching groups, while not formally recognized, already exist. Teaching groups encompass the vast majority of academics with teaching responsibilities, leading to an approach to academic development with a potential for a much larger participation than achieved with conventional community-based approaches that rely on voluntary participation. The quality characteristics of teaching groups can be determined, with community-like teaching groups providing their members with a strongly supportive context for learning about teaching. Where teaching groups do not already have community characteristics, they nevertheless provide a starting point for academic development that reaches academics who would not volunteer their participation. The article presented here focuses on the influence of size and distribution of teaching groups on quality characteristics.

Keywords: teaching groups, academic development, community-based

Background

This article reports on ‘space’ related aspects of a research project on ‘teaching groups’ (Heinrich, 2013). The overall aim of this project is to investigate new approaches to academic development that might be successful in encouraging a large majority of academics to engage more strongly with learning about teaching. Such research seems necessary, as, despite the wide array of academic development opportunities available, the engagement of academics in general is lacking (Hanbury et al., 2008; Kember, 2009). Among the academic development approaches, community-based approaches, based on communities of practice (Wenger, 1998; Wenger, McDermott & Snyder, 2002), faculty learning communities (Cox, 2004), or mentoring circles (Darwin & Palmer, 2009), have been prominent. Several studies building on community-based approaches to academic development were reviewed (CoP – Communities of Practice; SoTL – Scholarship of Teaching and Learning):

- Bolander Laksov, Mann, and Dahlgren (2008): Creating a CoP to improve teaching in a large, research-intensive department;
- Carr, Deacon, Cox, and Morrison (2008): Fostering an emerging CoP with the focus on using technology in teaching;
• Anderson (2008): Investigating the membership of part-time lecturers in a departmental CoP;
• MacKenzie et al. (2010): Building a faculty learning community to support engagement with SoTL;
• Waterman et al. (2010): Forming faculty learning communities to support action research SoTL projects;
• Nugent et al. (2008): Using faculty learning communities to support integration of technology into teaching;
• Schlitz et al. (2009): Using faculty learning communities to support the introduction of new technology for assessment;
• Darwin and Palmer (2009): Building mentoring circles to provide assistance and support to academics;
• Byrne, Brown, and Challen (2010): Extending peer observations to become peer development;
• Bell and Mladenovic (2008): Conducting peer observation exercises for tutor development.

The analysis of these studies shows a strong positive impact for the participating academics. Several authors (Byrne et al., 2010; Darwin & Palmer, 2009; MacKenzie et al., 2010; Schlitz et al., 2009; Waterman et al., 2010) report a new sense of collegiality and community, with the effects of feeling safe and valued and counteracting isolation. Participants felt personal affirmation and validation (Waterman et al., 2010). Friendships and partnerships with colleagues across university sections were developed (Waterman et al., 2010) and networking opportunities provided a chance for exchange (Schlitz et al., 2009). The involvement allowed participants to gain new skills (MacKenzie et al., 2010). Learning and reflection were positively impacted (Byrne et al., 2010). Thinking was stimulated and knowledge extended towards different approaches to teaching across disciplines (Waterman et al., 2010). A newfound common language helped communication among academics (Bolander Laksov et al., 2008). The fellowship programme reported on by Waterman et al. (2010) also led to promotions and research publications for some participants.

While no negative impact was reported by any of the authors, it was cautioned that the time required for participation could cause a problem (Byrne et al., 2010; MacKenzie et al., 2010). In relation to total staff numbers at institutions the proportion of individuals involved was fairly small across all studies. Only a minority of staff were involved (Byrne et al., 2010). While there clearly were positive outcomes for the participants, the impact on the university as a whole was limited (Nugent et al., 2008).

Across these and other studies, the importance of the community around academics for developing teaching becomes apparent. A supportive departmental and academic environment is one of the most important success factors for academic development (Ginns, Prosser, et al., 2007). In contrast, a non-supportive departmental context, a lack of knowledge by colleagues or resistance to change can prevent implementation of newly obtained knowledge and skills (Stenfors-Hayes et al., 2010).

Looking at the studies referred to and the wider literature on academic development suggests the following two observations:
1. Community-based approaches provide participating academics with a supportive environment highly conducive to learning about teaching.
2. Community-based approaches reach only a limited number of academics and are not creating impact across whole institutions.

These observations formed the starting point for the teaching group research. The idea was to look at entities, called teaching groups, which encompass all academics with teaching obligations by default. The thought was that any academic teaching at a university does so in collaboration with others, in working together on specific courses, in teaching in the same subject area, or in helping to deliver the same programme. These ‘others’ form the context in which the academic engages with teaching. One important aspect of the teaching group concept is to let individual academics specify this context, and therefore their teaching groups, themselves. This approach has a number of implications:

- Teaching groups will provide a relevant context for the teaching of academics as they are selected based on teaching together (may it be in a very narrow or in a wider context).
- Teaching groups will not necessarily be aligned to organizational structures such as departments or institutes.
- Teaching groups will vary in size, as it is left to the individual to name their context (which, for example, could be seen on various levels of granularity, like in teaching physics in general or in teaching nuclear physics more specifically).
- Academics can belong to one or several teaching groups, as they might be able to identify several contexts relevant to their teaching.
- Teaching groups will vary in the level of activity happening in the group, as in some groups members might hardly communicate but in others members might form a tight-knit community.
- Teaching groups exist already, as the assumption is that no academic who teaches at a university can do so in complete isolation. Yet, while the groups exist, they will in most cases not have been explicitly identified.

The research on teaching groups undertaken so far (Heinrich, 2013) has answered questions on the existence of teaching groups, and on the activities happening in teaching groups. It has also suggested a characterization of teaching groups expressing their ‘degree of desirability’ via a quality index, stating how teaching groups are placed in terms of supporting academics in their engagement with learning about teaching.

After presenting the methodology applied in the research, this article introduces the quality index for teaching groups, before focusing on findings related to ‘spaces’.

**Methodology**

The research was based on a theoretical framework formed by constructionism and postpositivism. A mixed methods approach was chosen as methodology, starting with an exploratory qualitative research phase that was followed by a confirmatory quantitative phase. Both research phases were conducted with participants from one New Zealand university. Ethics and institutional approvals for conducting the research were obtained.

The qualitative research phase was carried out with focus groups. Invitations to participate were sent to 400 academics, randomly selected from all academics at the university. Forty
academics indicated their willingness to participate. Scheduling restrictions meant that a total of 30 academics participated in seven focus group sessions. The sessions were led by the researcher and guided by a schedule of questions that aimed at exploring how academics relate to the concept of teaching groups, how they see their interactions with colleagues in regard to learning about teaching and how teaching groups could be utilized in support of such learning. The distribution of participants across gender was well balanced with 16 female and 14 male participants. All major units of the university were represented and participation was roughly aligned to the unit sizes. Academics of all ranks were involved. Audio recordings were taken and the recordings transcribed. A constant comparative framework (Krueger & Casey, 2009) was used to identify patterns in the data, discover relationships and develop theories.

The quantitative research phase was conducted via an online survey. The survey questions had been derived from the findings of the qualitative research phase. The survey population consisted of 1078 academics from the same university used for the focus group research (the focus group participants were excluded from the survey). In total 324 responses were received, resulting in a participation rate of 30%. An analysis across the three response waves (determined by the initial invitation and two reminders) indicates a low non-response bias and suggests that the survey respondents were representative of the population of academics at the university. The number of male and female respondents was about the same. The distribution across job titles for total population and respondents matched closely. The same was true when looking at the distribution across colleges and units. With 82% a large majority of respondents held positions that have both research and teaching requirements.

Findings

Existence of teaching groups
A fundamental question to be answered by the research was if participating academics could identify their teaching groups. This question could be clearly answered. All focus group participants could identify their teaching groups. Of the survey respondents close to 95% stated that they could relate the suggested understanding of teaching groups to their situation. Just over 40% of these respondents belong to just one teaching group, with the remaining close to 60% belonging to several teaching groups (for the remainder of the survey respondents were asked to focus on one specific teaching group of their choice). These results clearly suggest that academics belong to teaching groups and can identify these groups.

Relationship of teaching groups to organizational structures
Both focus group and survey addressed the relationship of teaching groups to organizational structures. The focus group data showed a variety of relationships. For some teaching groups, all members belong to the same organizational unit and are grounded in the same subject area. This situation can be compared to a traditional department, for example, mathematicians being grouped in a department of mathematics. A variation is where the teaching group members still belong to the same organizational unit, yet come from different disciplinary backgrounds. This situation can be linked to organizational structures that have been formed based on collaborative research areas. Further, teaching groups were discussed whose members belong to different organizational units. Table 1 presents the relationship to organizational structures for the survey data.

Table 1: Relationship of teaching groups to organizational structures
Answer | Percentage (n= 278)
--- | ---
The members of my teaching group are in the same organizational unit and are in the same discipline | 49.3
The members of my teaching group are in the same organizational unit but are from different disciplines | 28.8
The members of my teaching group are from different organizational units | 18.4
Other (please specify) | 3.6

Quality index for teaching groups
Listening to the focus group conversations and initial reading of the transcripts suggested that there are three types of teaching groups:

- Tight-knit groups: Groups with a highly collegial atmosphere, whose members interact frequently on a variety of issues around teaching, inclusive of pedagogy;
- Functioning groups: Groups that have put structures in place that get members together for scheduled interaction on teaching, focusing mainly on organizational teaching matters and attempting some shared learning or problem solving;
- Individualistic groups: Groups whose members largely work as individuals, where interaction on teaching is prompted by problems, where little passion is shown for teaching.

Two approaches were followed to establish if these teaching group types could be substantiated and the teaching groups of participants associated with these types. The first approach was holistic and involved focusing on the contributions of each participant in turn. The second approach was based on the definition of the following key factors: Initiation of interaction, participation in interaction, reasons for interaction, atmosphere within teaching group, and the perception of importance of teaching. Parameters for the key factors were identified and a mapping to teaching group types defined. Values of ‘Yes’, ‘Some’ or ‘No’ were recorded where a participant had made explicit statements related to the parameter. In absence of such statements no value was recorded (‘–’). Tables 2a and 2b provides examples for the teaching groups of Participants 27 and 29, whose teaching groups were, respectively, classified as tight-knit and individualistic. The two approaches of establishing focus group types resulted in comparable classifications and were seen as confirming the three suggested types.

<table>
<thead>
<tr>
<th>Key factor</th>
<th>Parameters</th>
<th>Values</th>
<th>Quotes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initiation of interaction</td>
<td>Organized interaction</td>
<td>Yes</td>
<td>There is quite a lot of discussion between the people involved in the paper as to how they’re going to teach, quite explicitly what they’re going to do, who is going to do what, what sort of equipment props etc.</td>
</tr>
<tr>
<td></td>
<td>Self-initiated interaction</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>By chance interaction</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Participation in interaction</td>
<td>Selected few only</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Majority</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Reasons for interaction</td>
<td>Organizing teaching</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reaction to problems</td>
<td>–</td>
<td></td>
</tr>
</tbody>
</table>

Table 2a: Characterization of the teaching group of Participant 27
The analysis of the focus group data showed that academics see clear benefits for themselves and their teaching from interactions with their colleagues. Further, a collegial, open and trusting atmosphere in a teaching group encourages meaningful interactions and provides support to academics. Based on these findings, the higher value of tight-knit as compared to functional or individualistic teaching groups was established as a ‘scale of desirability’.

The key factors for the classification of teaching groups, derived from the focus group data, were translated into five survey questions (see Table 3), presented using a 5-point Likert-scale. The average of the answers to the five questions was calculated as teaching group quality index. An average value of ‘1’ would represent an individualistic, less desirable teaching group, an average value of ‘5’ a tight-knit, more desirable teaching group. Figure 1 shows the quality indices for the teaching groups of the survey participants, demonstrating the full range of teaching groups types in the sample. The average across the 271 teaching groups was 3.22, sitting just beyond the halfway point on the scale towards tight-knit teaching groups.

### Table 2b: Characterization of the teaching group of Participants 29

<table>
<thead>
<tr>
<th>Key factor</th>
<th>Parameters</th>
<th>Values</th>
<th>Quotes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initiation of interaction</td>
<td>Organized interaction</td>
<td>–</td>
<td>There are all sorts of excuses like they are too busy. If you have a problem or an issue you may talk to somebody about it but we very rarely talk about how we teach.</td>
</tr>
<tr>
<td></td>
<td>Self-initiated interaction</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td></td>
<td>By chance interaction</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Participation in interaction</td>
<td>Selected few only</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Majority</td>
<td>–</td>
<td>I don’t think a lot of staff are open and that’s just the way they are.</td>
</tr>
<tr>
<td>Reasons for interaction</td>
<td>Organizing teaching</td>
<td>–</td>
<td>The people who have the problem [...] are exactly the ones you want to get there and they are exactly the ones who will not go voluntarily.</td>
</tr>
<tr>
<td></td>
<td>Reaction to problems</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Striving for improvements</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Atmosphere within group</td>
<td>Trusting and open</td>
<td>Some</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reserved and protective</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Perception of importance of teaching</td>
<td>Second class activity</td>
<td>Yes</td>
<td>Certainly some of our staff are not really motivated to change.</td>
</tr>
<tr>
<td></td>
<td>Intrinsic value</td>
<td>–</td>
<td></td>
</tr>
</tbody>
</table>

### Table 3: Survey questions used to calculate teaching group quality index

<table>
<thead>
<tr>
<th>Q8</th>
<th>Meetings about teaching are frequent in my teaching group.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q9</td>
<td>Chance interactions about teaching are frequent in my teaching group.</td>
</tr>
<tr>
<td>Q10</td>
<td>Most members of my teaching group initiate interactions about teaching.</td>
</tr>
<tr>
<td>Q11</td>
<td>Most members of my teaching group participate in teaching related events.</td>
</tr>
</tbody>
</table>
The atmosphere in my teaching group is trusting and open.

**Figure 1: Quality indices for the teaching groups of the survey participants**

**Quality indices and teaching group size**

The focus group conversations did not capture full data on the sizes of teaching groups of participants (group sizes mentioned ranged from 2 for the smallest group to 15-20 for the largest group). The survey contained a question of the number of academic members of teaching groups. The answer option selected most (about 40%) stated 5 or less academic members. About 75% of teaching groups had up to 10 academic members.

The analysis of variance for the question on teaching group size and the calculated teaching group quality index revealed a significant influence of the independent variable teaching group size (df = 269, F = 5.189, p = 0.05). A closer inspection of the influence of the teaching group size is presented in Table 4. The numbers show that teaching groups with up to 10 members have a higher index than larger teaching groups. For teaching groups with over 20 members the drop in index, and therefore desirability, is considerable. A possible explanation is that communication and working together might be easier in smaller groups. Further, smaller teaching groups might provide more purpose for working together, and in consequence, received a better rating.

**Table 4: Influence of teaching group size on teaching group quality index**

<table>
<thead>
<tr>
<th>Number of academic members</th>
<th>Number of answers (n=271)</th>
<th>Teaching group index</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>271</td>
<td>3.22</td>
</tr>
<tr>
<td>5 or less</td>
<td>107</td>
<td>3.27</td>
</tr>
<tr>
<td>6 to 10</td>
<td>95</td>
<td>3.30</td>
</tr>
</tbody>
</table>
Quality indices and physical location of teaching group members
The focus group participants frequently referenced the multi-campus nature of their university. Mostly, the same courses are delivered on multiple campuses. While in most cases campus-based staff deliver, in some cases academics travel to teach all delivers or teach online. Often, but not always, one academic will have an oversight role to ensure the equivalence of deliveries. Beyond individual courses, collaboration is required on subject area and programme levels. Often, there is an imbalance in the number of academics in organizational units across campuses. This was mostly, but not only, pointed out by participants located in the smaller sub-groupings of an organizational unit. Also, as the strategic directions on each campus differ, there can be differences in support for the subject areas and programmes. There are historical differences across the campuses, looking at how long a group has been in existence, who has developed the course material and who traditionally had the ownership of the courses and programmes. Different development foci at the different campuses mean that the same subject areas may be located in different organizational units. There are differences in how well units and individuals manage to share and work together, with some groups experiencing difficulties, yet others finding collaboration easy. Participants P20 and P18 described the respective experiences.

P20: Some people have a different sense of ownership of the courses they’ve developed than others and this can be problematic, for example with questions about equivalence.

P18: We’re really good at sharing content so and that’s across campus and across within our small group; content is easily shared and isn’t proprietorial.

The multi-campus nature of the university seems to have a strong impact on teaching and on teaching groups. This was felt especially strongly by academics in the smaller sub-groupings. The survey followed up on the potential impact of multiple campuses on teaching groups. The data show that just over half (53%) of teaching groups captured in the survey stretch over multiple locations. The respondents were asked to state, if they were located in the larger or smaller part of a teaching group stretching across more than one campus location (for example, a teaching group might have 15 academic members with 4 being located on Campus A and 11 on Campus B; a respondent located on Campus A would choose ‘fewer members’ to indicate the smaller sub-group). The analysis of variance shows a significant influence of the relative size of a sub-group as independent variable compared to the teaching group quality index (df = 141, F = 5.683, p = 0.05). The numbers show that the teaching group quality index for groups of participants located in the smaller part of a teaching group is considerably lower than for a participant located in the larger part (see Table 5). This could indicate that the larger sub-groups of teaching groups dominate and the smaller sub-groups miss out on interaction or communication.

<table>
<thead>
<tr>
<th>Size</th>
<th>Number</th>
<th>Quality Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>11 to 20</td>
<td>49</td>
<td>3.11</td>
</tr>
<tr>
<td>More than 20</td>
<td>20</td>
<td>2.81</td>
</tr>
</tbody>
</table>

Table 5: Influence in size per campus in distributed teaching groups on the teaching group quality index
### Importance of physical proximity

The focus group conversations discussed opportunities for exchange among colleagues and for learning from each other. In these conversations the importance of physical proximity surfaced time and again. It was expressed that physical proximity opens opportunities for informal exchanges.

P28: I think that informal talk is often how things happen over the corridor or over a cup of tea.

Even within the same campus the physical closeness of offices is seen as very important for communication between academics. Close proximity was seen as conducive to strong communication, as expressed by Participant 13.

P13: Our offices are together and we deliberately group people who teach in similar areas together and you can’t help but know what each other is doing, you just have to. It’s very hard to be isolated and it really works very, very well.

The participants discussed the importance of social interactions among staff. These require suitable physical spaces, but also time and nurturing of the right atmosphere. Participants observed how shared time together, such as at morning teas or over lunch, is more and more declining. Participant 24 addressed the negative effects on staff, their interactions and ultimately their work, where rules and regulations create a negative environment.

P24: If you make staff feel negative and destroy the fun and the passion then it breaks down formal, informal, everything and just becomes mechanistic.

### Discussion

The research reported on in this article has proposed the concept of teaching groups, which build on a desire for community-like settings and the realisation that calls for voluntary participation in academic development initiatives have failed to create widespread participation. The proposal, which was confirmed by research participants, suggests that teaching groups already exist and that academics are able to name their teaching groups. The positive aspects of community-based approaches for their participants has led to the suggestion that teaching groups with stronger community-like characteristics are of higher value for their members than teaching groups without such characteristics. The teaching group quality index was formulated to capture this relationship.
The teaching group research led to a variety of conclusions in relation to ‘space’. Teaching groups are conceptual spaces. They have the potential to provide academics with contexts highly relevant to their teaching. Teaching groups can overlap with organizational boundaries (such as provided, for example, by departments), but will not necessarily do so. The recommendation to the university leadership is to make these conceptual spaces explicit across their institutions. This should happen in close consultation with individual academics to identify groups of high relevance to the individual. Teaching groups exist in a variety of sizes (of 2 to more than 20 academic members). The size of a teaching group has a statistically significant impact on its quality index, with group sizes up to ten members showing better results than sizes above twenty. Here the call needs to be made to look at these larger teaching groups and assist academics in identifying relevant subgroups of smaller size.

The organizational space provided by universities influences the teaching groups. The research has shown that a large proportion of teaching groups at the university studied stretches across different campus locations. While there was no indication that teaching groups that stretch over campuses provide lower quality environments than teaching groups located at one campus only, impact on the individuals in multi-campus groups was found. The individuals in the larger subgroups of multi-campus teaching groups experienced higher quality environments than their colleagues in the smaller subgroups. These findings indicate that it will be important to closely look at the power balance across campuses and groups. While a teaching group might be functioning well looked at as one unit, individuals in subgroups might feel marginalised. The distribution of teaching across campuses can be challenging. As one survey respondent stated in the concluding freeform comments to the survey, making teaching across campuses equivalent carries the danger of reducing teaching to the “lowest common denominator” (R177).

Despite electronic means of communication, physical space continues to be of importance. Offices located in close proximity, as well as shared working and teaching spaces, open opportunities for valuable communication. As the findings of the survey research show, only about half of the teaching groups reported on are located in what might be called traditional departments, where organizational structure and discipline focus come together. In these teaching groups one might expect academics to be located in close physical proximity. In the other cases, where teaching groups stretch across multiple disciplines and/or organizational structures such physical proximity of office spaces might be less likely, possibly impacting on opportunities for informal communication. Explicit naming of teaching groups across an institution should allow further analysis of these issues.

The recommendations to the higher education sector are to work with academics to identify their teaching groups. Using the factors suggested an initial quality index for these teaching groups can be calculated and can drive an analysis of the particular development needs of the groups. The proposed impact of working with teaching groups as opposed to communities of practice or learning communities lies in the opportunity of capturing the vast majority of academics.

References


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