

The Impact of Group Cohesion on Key Success Measures in Higher Education

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KEYWORDS: retention; achievement; attendance; education; cohesion

Abstract

Higher education institutions are increasingly being measured using key performance indicators such as student retention, success, achievement and attendance. There is a dearth of research focusing on group dynamics within classroom settings, with very little focusing on cohesion. There is however, evidence, in organisational and sports settings, that cohesion can have a positive impact upon performance and adherence to group activities. More cohesive classes may therefore result in improved performance in higher education. This study aimed to examine whether group cohesion was related to markers of student success in a higher education classes in three English colleges. One hundred and seven first year sports students took part by completing the Perceived Cohesion Scale for Small Groups (PCS) at the end of semester one and two. Responses were correlated with student attendance, success, achievement and retention. Results indicated that attendance was positively correlated with cohesion ($r = 0.4$, $p = 0.01$), but there were no other relationships. The effect sizes were higher in semester 2 compared to semester 1 which suggests that cohesion may develop over time in student groups. The findings indicate that cohesion may be important to enhance attendance at colleges and that building cohesion should be a priority for classroom managers.

Introduction

This study aimed to examine the relationship between cohesion and the markers of student success in higher education (HE), namely, attendance, retention, achievement and success. Cohesion is defined as a tendency of a group to remain united, forge social bonds and share ideals in the pursuit of objectives (Dhurup and Reddy 2013). Within educational settings, cohesion has been linked to better classroom atmosphere and student attendance (Swezey, Meltzer, and Salas 1994). To date, little research has examined the relationship between perceived classroom cohesion and key performance indicators (KPIs) in educational settings. Cohesion has, however, been widely studied in sport and exercise literature, with most researchers reporting that high levels of cohesion can result in improved sports performance (e.g. Carron, Bray, and Eys 2002). We therefore aimed to examine whether this relationship is apparent in educational settings.

In the sport domain, cohesion is discussed as a multi-dimensional concept, comprised of task and social aspects. Task cohesion refers to the degree to which members of a group work together to achieve a common goal, whereas social cohesion reflects interpersonal attraction amongst group members (Weinberg and Gould 2010). High levels of task cohesion have been linked to team success in sport (Carron, Bray, and Eys 2002), and social cohesion has been associated with better adherence in exercise classes (Spink and Carron 1992). Indeed, cohesion is the most important small group variable that directly contributes to group members' exercise behaviours and cognitions, such as adherence, intention and effort (Gu and Solmon 2011). It has been a common assumption that if a team displays togetherness it has a greater chance of success.

Other views of cohesion focus on morale and belonging (Chin et al. 1999). These are seen as fundamental aspects of cohesion and influence whether a group will be successful and remain united (e.g. Bollen and Hoyle 1990). Belonging refers to how much participants feel part of a group. Members who feel that they belong within a group wish to be associated with others within the group and seek out opportunities to interact with them (Bollen and Hoyle 1990). This concept links with social cohesion, whereby individuals feel attracted to the group and wish to be part of it. Morale refers to how individuals feel about the status of the group and how objectives are achieved. This is equally important because, without it, motivation to achieve group goals is lessened. There is evidence that morale and belonging are important factors in classroom dynamics and may reflect task and social cohesion, respectively (e.g. Hijzen, Boekaerts, and Vedder 2007). Belonging or social cohesion, for example, may be important during the first year of undergraduate study when friendships are forged.

Meta-analytical studies in sport have demonstrated that there is a significant positive relationship between team success and cohesion (Carron et al. 2002). Using 46 studies with 164 effect sizes, it was found that cohesion demonstrated a significant moderate to large relationship with performance ($ES = 0.655$). The analysis also examined the interaction between task type and cohesion, using both co-active and interactive sports. Results indicated that task type was not a moderator of this effect, meaning that it did not matter whether the sport was co-active or interactive; cohesion still had a medium to large effect on performance.

Extensive research has also been conducted to investigate the impact of perceived group cohesion upon attendance and/or adherence within group exercise settings (Burke 2003; Carron, Hausenblas, and Mack 1996; Christensen et al. 2006; Estabrooks and Carron 1999; Gu and Solmon 2011; Spink and Carron 1992, 1993, 1994). These groups may be more akin to the classroom due to the co-active nature of the exercise class. The results of these studies all suggest a positive relationship between adherence to exercise programmes and perceived cohesion.

Spink and Carron (1994), for example, examined cohesion and attendance in two different exercise classes. Using discriminant function analysis, it was shown that regular attenders in university fitness classes had significantly higher perceptions of task cohesion than those who dropped out or did not attend class. In a second study, using participants in a private fitness club, results also reflected that cohesion was a reliable predictor of adherence; however, here, it was social cohesion that discriminated between adherers and non-adherers (ibid). Most studies have been completed within small group exercise settings, however Anessi (1999) also demonstrated better attendance and less dropout amongst those who perceived higher levels of group cohesion even within much larger commercial exercise centres. This may therefore link to higher education institutions (HEIs) where class sizes may be large and where students are co-acting rather than interacting with others.

There is some ambiguity in the research, however, and some authors have found no relationship between cohesion and markers of success (e.g. Widmeyer and Martens 1978). In sport, these 85 discrepancies have been explained based on the nature of the sports used as measures. For example, a positive relationship between team cohesion and team success can be found for interacting sports such as basketball and hockey, yet co-acting sports such as bowling have not revealed the same correlation (Landers et al. 1982). This has implications in educational settings and the relationship between cohesion and success in the classroom may be dependent upon the dynamic of the group and whether the students perceive themselves to be in a co-acting or interacting environment.

Depending on the setting, students may be independent, co-acting or interacting. Independent work, for example, may take place during sessions or outside of the classrooms where students work alone. Equally, during seminars or to complete a group assessment, students may work together to solve problems and, thus, work interactively. At other times, students may work co-actively on different tasks to collectively achieve an overall goal, such as solving separate parts of a problem then putting these together to devise an overall solution. For summative assessments, students tend to work independently but there is an increase in group-based assessments within some universities (Sridharan, Tai, and Boud 2018). Therefore, student perceptions of cohesion may be dynamic depending on the context. Such perceptions will also differ from the sporting domain, where athletes may need to work together to be successful more often. Indeed, the competition versus co-operation element should be noted, as should the dimensions of cohesion, namely, task/ social and morale/belongingness. Athletes within sports teams often work together to achieve a common goal (similar to students completing group assessments that are goal driven and linked to task cohesion), whereas students may work more often in competition with one another for individual assessment grades (e.g. Stapel and Kooman 2005). However, social or belongingness cohesion should not be discounted. Students may still work separately and compete for grades, but equally they may feel that they belong in their group and possess a desire to socialise with their peers. As such, they may not be working together to achieve a common goal (task cohesion) but may enjoy being part of their group from a belongingness perspective. Therefore, it is important to acknowledge the multidimensional nature of cohesion and group dynamics both in the classroom and in the sports domain.

It has recently been argued that HEIs are becoming more focused on graduate outcomes rather than on the student experience (Daniels and Brooker 2014). As such, the current identity of students may be being neglected at the expense of future graduate attributes. If students feel that they do not have an identity and do not belong on their programme, they are at risk of disengagement (ibid). However, HEIs are measured on student outcomes, and therefore these cannot be ignored. It is

often accepted that, if students complete activities and engage with their learning, they will be successful; sometimes, however, this success does not follow (Martin et al. 2014). It is argued that psychological and social factors, such as student identity (Daniels and Brooker 2014), self-esteem (Murray and Kennedy-Lightsey 2013) and group cohesion (Senior 2001), may be significant in terms of student success.

There is also some evidence to suggest that there are links between cohesion and attendance in environments outside of the sport and exercise setting. Tonigan, Ashcroft, and Miller (1995) reported that members who perceived their Alcoholics Anonymous groups to be cohesive were more likely to endorse their group practices and recommend them to others. In addition, Lloyd-Rice and Tonigan (2012) found that impressions of group cohesion within Alcoholics Anonymous meetings were a predictor of increased attendance. Similarly, MacNair-Semands (2002) suggested that regular attendance is a marker of group cohesion within group therapy, and that, in accord with Falloon (1981) and Yueksel et al. (2000), more cohesive groups have fewer members who drop out. This could also link to educational settings, where students may not be directly interacting with one another in a co-operative way (as in team sports), but may be co-acting with each other in a supportive manner (i.e. social or belongingness cohesion).

Other research focused on the context of employment; Steers and Rhodes (1978) conducted meta-analysis that showed a modest association between group size and absenteeism from work. Results indicated that increased work group size leads to lower group cohesiveness. Shader et al. (2001) showed a more direct relationship within a study of 241 nurses working in an academic medical centre. It was found that increased group cohesion within these working environments was related to decreased turnover of staff, suggesting that measures of group cohesion could be used as a predictor of anticipated attrition.

These results have demonstrated clear implications for sport, exercise and beyond but they could also be translated to the classroom. Cohesion in educational terms has been defined as a sense of togetherness or community within a group (Corey and Corey 1997). Many teachers value class cohesion and feel that it is key to academic success (Senior 2001). In her investigation into cohesion within adult language learning environments, Senior (2001) reported that teachers felt that cohesion made learners feel safe within class and fostered language development. Interviews revealed that teachers actively strove to enhance cohesion through group activities and extra-curricular tasks. It was concluded that teachers valued cohesion highly within their classes and that it was a key factor in student engagement.

Early research carried out in the USA sought to assess whether cohesion could be linked to the academic performance of school students. In a study of 155 elementary school students, Lott and Lott (1966) compared differences between groups demonstrating high and low cohesiveness on the completion of co-operative learning tasks in three successive weeks. The results from the study suggested that, for all three tasks, highly cohesive groups significantly outperformed the groups that exhibited low cohesiveness on both learning scores and time to completion. Another study comparing the impact of high cohesiveness and low cohesiveness on academic performance in school-age children was carried out by Shaw and Shaw (1962). In this study, students were placed into either high cohesiveness or low cohesiveness groups and provided with co-operative spelling tasks. Results showed that there was greater learning of new tasks within the highly cohesive group during the initial testing phase, but that this positive correlation was not evident in later phases of learning.

More recently, qualitative approaches have been used and the link between class cohesion and quality of learning has been made in studies examining organisational behaviour and language classes (e.g. Ehrman and Dörnyei 1998; Swezey, Meltzer, and Salas 1994). Cohesion in the classroom has many benefits, including enhanced group support amongst members, increased likelihood that members will feel welcome (Ehrman and Dörnyei 1998) and increased engagement in self-disclosure and participation in group tasks (Levine and Moreland 1998). Cohesive classes also enjoy interacting with one another (Forsyth 1999) and such groups promote mutual learning due to increased solidarity and caring within lessons (Hinger 2006). In addition, Swezey, Meltzer, and Salas (1994) reported that cohesive groups contain members who are involved in the activities of the group, are highly co-ordinated and are less likely to be absent. Therefore, cohesion may be linked to attendance and, with that, other markers of success in education.

Student identity and a sense of belongingness to an institution have also been linked to engagement in HE. Murray and Kennedy-Lightsey (2013) explored the Communication Theory of Identity (CTI; Hecht 1993, cited in Murray and Kennedy-Lightsey 2013), which states that four frames of identity can be linked to cohesion. The personal frame refers to how individuals perceive themselves, the enacted frame is how people act amongst others and project themselves, and the relational frame refers to interactions within relationships and the communal frame reflects collective identities. All of the frames need to be understood in conjunction with one another; however, there are clear links between the enacted, relational and communal frames and cohesion. If there is a gap between personal and communal frames, students may be more likely to disengage from their studies. This predictive relationship is magnified if personal–relational gaps exist. As such, it appears that if students do not feel as though they belong in a group, they may be more likely to disengage from their programme of study. Peers, teachers and support staff may all influence how a student feels about their group. Students who feel that they have a good relationship with their peers and members of the faculty tend to be more confident and have more positive self-perceptions (Craig and Stake 2004). As such, fostering a cohesive atmosphere amongst all stakeholders may help students to engage with their programme to a greater degree.

Therefore it appears that social cohesion is important for belongingness and relational reasons. However, paradoxically, effective groups tend to demonstrate more task-oriented goals and belongingness-oriented goals have been shown to be more prevalent in ineffective classroom learning teams. As such, belongingness appears to be more important to low achievers than high achievers (Hijzen, Boekaerts, and Vedder 2007). This may be true in some classroom settings where students who are more interested in making friends and becoming part of a group may place less emphasis on task-oriented goals. This dynamic requires more investigation, and it may be that task-oriented goals become more important as students progress through their studies. Despite this, it has been argued that, certainly in the early stages of beginning an undergraduate programme, focusing on developing a student identity and sense of belongingness are important for engagement and, ultimately, student success (Murray and Kennedy-Lightsey 2013).

There is evidence that cohesion is something to be fostered and nurtured within the classroom. It is surprising, therefore, that no research could be found that examines the impact of cohesion on success and attendance rates in HE settings. Much of the education-focused literature has centred on building cohesion within classroom environments. Whilst there is a great deal of sports-based research that laments the importance of cohesion, no study to date has examined the link between cohesion and attendance in the classroom.

If a relationship between cohesion, attendance, retention, success and achievement is found, this may suggest a need for time and resources to be spent on developing group cohesion within student

cohorts to replicate the positive outcomes in these other settings. Therefore, the aim of this study was to examine the effect of perceived group cohesion on attendance, retention and achievement in a college-based HE setting.

The hypotheses were as follows:

H1: Cohesion overall and its elements (morale and belonging) will be positively correlated with attendance

H2: Cohesion overall and its elements (morale and belonging) will be positively correlated with retention

H3: Cohesion overall and its elements (morale and belonging) will be positively correlated with achievement

H4: Cohesion overall and its elements (morale and belonging) will be positively correlated with success

Materials and method

Participants

This study involved 107 first-year, level four students drawn from seven HE programmes under the general umbrella of 'sport and exercise' studying at three separate mixed-economy colleges in the North East of England. All students were foundation degree or HND students in 2014/15 and class sizes ranged from 11 to 24. Thirteen students either dropped out of their programme or were not present for final data analysis, thus 94 students were included in the final analysis.

Instruments

Group cohesion was assessed through the six-item Perceived Cohesion Scale for Small Groups (PCS; Chin et al. 1999). This questionnaire was adapted from the original Bollen and Hoyle (1990) inventory by altering some of the wording. In the original version, the word community was used to describe the collective population of interest. Chin et al. (1999) replaced this with the word group, which was thought to be a more representative term for smaller teams of people. We felt that this more accurately represented the student population, in that students would more readily describe themselves as a group rather than a community. The PCS was found to be a useful indicator of cohesion, with acceptable reliability ($\alpha = > 0.87$) and demonstrating similar, robust psychometric properties to the original inventory (Chin et al. 1999).

Respondents indicated the extent to which they agreed with each statement on a Likert scale (1 = strongly disagree; 7 = strongly agree). Individual responses were summed and averaged to provide scores on the overall measure of Perceived Cohesion and two specific components of cohesion (belonging and morale). For example, Question 1, 'I feel that I belong in this group', is a measure of belonging, and Question 2, 'I am happy to be part of this group', is a measure of morale. Data were collected via the PCS at the completion of semester one and the completion of semester two. Attendance data (i.e. the percentage attendance for each student) were collated via each college's own internal systems at the end of each semester. Retention (i.e. the percentage of students who remained on programme at the end of the academic year) and achievement (i.e. the percentage of the cohort who successfully completed the first year and were able to progress to second year) results for each group were collated, also using central data sources. Success data was calculated as

the percentage of the cohort who started the programme and successfully achieved. Put another way, success is a measure of how many students started the course compared to how many successfully achieved, and can be calculated as retention x achievement and expressed as a percentage.

Ethics

The study was approved by the Newcastle College Ethics Committee. Access to central data was approved by senior management in all three institutions prior to the study commencing. Students completed the questionnaire during timetabled lessons or tutorials. All students were provided with an information sheet describing the study and signed a consent form before participating. Time was also provided for students to ask questions before the questionnaire was distributed.

Data analysis

Pearson correlations were conducted to establish relationships between cohesion and retention, achievement, success and attendance. ANOVA was employed to examine differences between the three college groups. SPSS version 22 was used for all statistical analysis, using an alpha level of $p < 0.05$.

Results

Attendance

Attendance was significantly higher in semester one (88.72%) than in semester two (76.50%; $p < 0.001$). In semester one, overall cohesion was positively correlated with semester one attendance ($r = 0.26$, $p = 0.01$). However, cohesion overall could only account for 6.7% of attendance. Cohesion belonging was positively correlated with attendance ($r = 0.26$, $p = 0.01$), as was cohesion morale ($r = 0.24$, $p = 0.02$). Effect sizes for all correlations were small.

In semester two, overall cohesion was positively correlated with semester two attendance ($r = 0.37$, $p < 0.001$) and accounted for 13.8% of attendance. Cohesion belonging was positively correlated with attendance ($r = 0.38$, $p < 0.001$), as was cohesion morale ($r = 0.33$, $p = 0.002$). Effect sizes for all correlations in semester two were small; however, they were larger than in semester one, indicating that cohesion may take time to impact upon attendance.

Cohesion did not change from semester one to semester two in either category ($p > 0.05$).

Therefore, H1 was supported.

Retention

Overall cohesion was not related to retention in either semester ($p > 0.05$). In addition, cohesion belonging and cohesion morale were also unrelated to retention ($p > 0.05$). Therefore, H2 was not supported. 280

Achievement

Overall cohesion was not related to achievement in either semester ($p > 0.05$). In addition, cohesion belonging and cohesion morale were also unrelated to achievement ($p > 0.05$). Therefore, H3 was not supported.

Success

Overall cohesion was not related to success in either semester ($p > 0.05$). In addition, cohesion belonging and cohesion morale were also unrelated to success ($p > 0.05$). Therefore H4 was not supported.

Groups

As the students were from different colleges and different-sized groups, comparisons were made using a one-way ANOVA to explore differences in overall cohesion.

The college with the largest class sizes had the lowest cohesion (see Table 1). The ANOVA revealed that there was a significant effect of group size ($F(2,91) = 5.51$; $p = 0.006$). Post-hoc Games–Howell tests revealed that the college with the largest class sizes demonstrated significantly lower cohesion than the college with the smallest ($p = 0.007$). No other differences were found between groups.

Discussion

This study aimed to establish whether or not group cohesion is positively correlated with a number of KPIs within HE. Cohesion and attendance have been shown to be positively related in a range of other settings, so the expectation was that this would also be apparent within undergraduate sport and exercise classes. It was also anticipated that both of these variables would have a positive relationship with retention, achievement and success. Overall, however, only H1 was supported, demonstrating that cohesion was positively correlated with attendance. The findings of the study are discussed below.

The study revealed that both aspects of cohesion were positively correlated with attendance of first-year HE students studying a sport and exercise programme. This finding is supported in research that illustrates that cohesion is a powerful group property, especially within team sports (Holt and Sparkes 2001). Cohesion contributes to the significance of unity and bonding within sports settings and therefore it could be expected to also apply to an academic sport and exercise cohort, where the opportunity to forge friendships, shared goals and social norms is also present. This notion, however, was not supported in terms of academic performance measures such as retention, achievement and success.

Table 1. Class sizes according to college.

| Class sizes | Mean number of students in class | Mean overall cohesion | SD overall cohesion |
|----------------|----------------------------------|-----------------------|---------------------|
| Largest | 17.6 | 33.75 | 6.64 |
| Second-largest | 9.5 | 38.06 | 3.80 |
| Smallest | 7 | 39.50 | 3.38 |

Cohesion has been defined in a number of ways; however, a main focal aspect is that of the attractiveness of the group (which is linked to belongingness). Carron, Bray, and Eys (2002) proposed that it is the attraction of membership in a group for its members that leads to cohesiveness. When HE is delivered within further education (FE) colleges, students are often internal progressors from level three to level four. Attraction may contribute to the relationship between cohesiveness and attendance at the start of an academic year, especially if the students know one another. Indeed, belongingness is an important factor in student identity and can contribute to engagement with a programme (Daniels and Brooker 2014). Attendance was significantly higher in semester one than in semester two, indicating that engagement may have decreased as the year progressed. However, other factors may have contributed to this, such as personal factors and conflicting interests or responsibilities.

Dhurup and Reddy (2013) highlight that the transition of students from FE to HE can be stressful and a repositioning takes place. This requires students to be open to interaction and more interpersonal involvement with peers from varied geographical and ethnic backgrounds, which may explain why attendance was greater at the start of the academic year and why a relationship between overall cohesion and attendance remains apparent. Dhurup and Reddy further discuss that disruptions and the new challenges of academic demands lead to further stressors that may distract students. This may result in students having difficulty finding the correct balance between academic and social activities, which in turn may negatively influence educational performance measures.

Class attendance, assignment submissions, general study and academic achievement often mean that students must develop a work–life balance to be successful, something that is particularly evident for HE students within a college setting (Lowe and Gayle 2007). Students studying on a sport or exercise programme are also, in many cases, student athletes with the added responsibility of managing sporting demands such as daily practice, competitions and injuries. These additional variables were not accounted for within the study and may have affected attendance throughout the semesters.

It is evident, however, that cohesiveness has positive outcomes in terms of attendance. There is some limited research into the relationship between attendance and cohesion in educational settings. Murray and Kennedy-Lightsey (2013), for example, reported that students who felt that they belonged in an institution were less likely to leave or disengage from their programme. This is also reflected in studies examining exercise programmes, demonstrating that group dynamics play an integral part in explaining why individuals remain or withdraw from a class. Spink and Carron (1993), for example, found that exercise participants who dropped out of a class or programme had lower perceptions of their classes' cohesiveness than those who maintained adherence. As such, students who feel that their group is cohesive may be more willing to attend lectures and seminars. The lack of relationship between cohesion and any of the educational performance measures (retention, achievement and success) does not follow the patterns that have been seen within sporting contexts. It is worth noting, however, that most of the evidence presented earlier in this article was found within interactive team sport settings when individual group members are working towards a shared goal. HE within an FE college takes place within a context where most students are isolated learners whose learning is disconnected from that of others and their individual measure of performance is independent from that of other group members (Tinto 2000). Certainly, in the three institutions sampled, there was limited summatively assessed group work. Where group work took place, it was never 100% of a module mark. As such, working together to achieve academic grades was not commonplace and further research could be conducted to examine this in more detail. Therefore, positive cohesion with classmates might not realistically have a strong impact upon

students' own personal motivation to perform academically, but it may make them want to attend class. In addition, there might also be some questions remaining over the potential cause–effect relationship between cohesion and performance. Research findings remain ambiguous regarding whether successful performance leads to increased cohesion or whether high cohesion results in better performance (Mullen and Copper 1995; Williams and Widmeyer 1991). Our results support those of Hijzen, Boekaerts, and Vedder (2007), who reported that belonging-related goals were unrelated to effectiveness in the classroom. As such, making friends and feeling part of a group may not be important to academic success in educational settings. Rather, students who feel part of a group may be good attenders, but this may not necessarily impact on their productivity and achievement within the classroom. Indeed, evidence suggests that some students can learn just as well independently as do others by attending sessions (Hyde and Flournoy 1986). It is therefore clear that further investigation is required to determine why students do not succeed in educational settings. Students who are at risk of dropping out are generally individuals with a complex mix of characteristics, but if educators are to try to improve these performance indicators, they must surely have their students in attendance whilst fostering cohesion within the group. This final point has also been recognised within sporting contexts by Williams and Widmeyer (1991), who stated that, despite a lack of association between cohesion and performance, the creation of cohesive groups could in a tangential way create a platform upon which other variables and psychological factors might be developed.

The importance of cohesion and investment in its development should not be ruled out. Some evidence has suggested that a stronger cohesiveness–performance effect may be observed within smaller groups (Mullen and Copper 1995). The current study was carried out with full cohorts and therefore possible effects may have been lost within the numbers. This focus upon smaller groups of cohesive learners might add credence to the idea of developing 'learning communities' within overall student cohorts. For example, Tinto (1995) found that such communities led to more involvement in learning activities, more learning and higher rates of overall perseverance with the overall learning process. The construction of such groups might be an avenue for future research based around Tinto's (2000) theory that the construction of these 'learning communities' within student cohorts requires learners to become more active in their approach to, and also responsible for, their own learning and the learning of others within their group.

This study has therefore supported the hypothesis that cohesion is positively correlated with attendance in both semesters of a first-year HE programme. Effect sizes were small ($r < 0.4$) but they did increase over time, indicating that cohesion may take time to develop. We did not find support for the hypotheses that cohesion was related to objective measures of performance (namely, achievement, success and retention). These findings have implications for managers in HE settings as well as staff and students. Attendance is considered to be an important factor in teaching in FE settings and is often measured to determine quality of delivery. If attendance is to be encouraged, cohesion must therefore be fostered. Managers and staff should therefore work to ensure that cohesive behaviour is supported both inside and outside of the classroom. This could be achieved through encouraging group work within lessons or offering team-building opportunities outside of class. In addition, as cohesion was lower in institutions with the highest class size, cohort numbers should be examined to determine if there is an optimal class size for fostering cohesion.

Limitations

Some limitations to this study need to be acknowledged. First, we used only one self-report measure of cohesion. Whilst PCS has been validated by previous studies (Bollen and Hoyle 1990; Chin et al. 1999; Salisbury, Carte, and Chidambaram 2006), none made use of this particular population. One

may therefore question the robustness of the psychometric properties of the questionnaire and how well it fully captured the feelings of the students. Future research should aim to use a variety of methods to assess cohesion and its components. Qualitative methods could be employed, for example, to explore the reasons for cohesion levels in certain classes. In addition, other measures could be correlated with cohesion, such as student satisfaction ratings or module review results.

The results show that cohesion may take time to develop, therefore future studies should aim to explore cohesion using longitudinal methods. This would establish if cohesion changes over the years of a degree programme and whether cohesion is related to success in later years of study. Whilst three different colleges were used for this study, it should be noted that HE classes in colleges are different from those in university settings. Specifically, the colleges used here had limited investment in library and group learning facilities. Libraries were not open 24 hours a day, 7 days a week, as is commonly seen in university settings. Class sizes tend to be smaller in colleges compared to universities and there are fewer opportunities for students to socialise in clubs and societies outside of the classroom. As such, the findings can only be generalised to institutions similar to those measured here. There is scope therefore to expand this research to universities where class sizes may be significantly larger, students tend to live away from home and social events are more abundant. Further studies could attempt to explore the relationship between class size, social opportunities and success in higher education.

To conclude, this study has shown that cohesion is related to attendance in HE settings. Developing cohesion within colleges could impact on attendance and therefore the student experience. Over time, this may result in higher success rates and greater student satisfaction with their programmes. Using cohesion-building methods would therefore be of benefit to colleges delivering HE.

References

- Anessi J. 1999. "Effects of Minimal Group Promotion on Cohesion and Exercise Adherence." *Small Group Research* 30: 542–557. doi:10.1177/104649649903000503.
- Carron AV Hausenblas HA and Mack DE. 1996. "Social Influence and Exercise: A Meta-Analysis." *Journal of Sport and Exercise Psychology* 18: 1–16. doi:10.1123/jsep.18.1.1.
- Bollen KA and Hoyle RH. 1990. "Perceived Cohesion: A Conceptual and Empirical Examination." *Social Forces* 69 (2): 479–504. doi:10.1093/sf/69.2.479.
- Burke SM (2003) "An examination of shared beliefs in exercise classes." Unpublished master's thesis, University of Western Ontario, Ontario, Canada.
- Carron AV, Colman M, Wheeler J and Stevens D. 2002. "Cohesion and Performance in Sport: A Meta-Analysis." *Journal of Sport and Exercise Psychology* 24: 168–188. doi:10.1123/jsep.24.2.168.
- Carron V, Bray S. and Eys MA. 2002. "Team Cohesion and Team Success in Sport." *Journal of Sport Sciences* 20: 119–126. doi:10.1080/026404102317200828.
- Chin WW, Salisbury WD, Pearson AW and Stollak MJ. 1999. "Perceived Cohesion in Small Groups: Adapting and Testing the Perceived Cohesion Scale in a Small-Group Setting." *Small Group Research* 30 (6): 751–766. doi:10.1177/104649649903000605.
- Christensen U, Schmidt L, Budtz-Jørgensen E and Avlund K. 2006. "Group Cohesion and Social Support in Exercise Classes: Results from a Danish Intervention Study." *Health Education and Behavior* 33: 667–389. doi:10.1177/1090198105277397.
- Corey MS and Corey G. 1997. *Groups: Process and Practice*. Pacific Grove, CA: Brooks/Cole.
- Craig M and Stake JE. 2004. "Changes in Attitudes and Self-Confidence in the Women's and Gender Studies Classroom: The Role of Teacher Alliance and Student Cohesion." *Sex Roles* 50: 455–468. doi:10.1023/B: SERS.0000023066.79915.83.
- Daniels J and Brooker J. 2014. "Student Identity Development in Higher Education: Implications for Graduate Attributes and Work-Readiness." *Educational Research* 56: 65–76. doi:10.1080/00131881.2013.874157.
- Dhurup M and Reddy L. 2013. "Social and Task Cohesion and the Relationship with Team Sport Satisfaction and Academic Performance among a First Year University Cohort." *African Journal for Physical, Health Education, Recreation and Dance* 19 (2): 381–393.
- Ehrman MZ and Dörnyei Z. 1998. *Interpersonal Dynamics in Second Language Education: The Visible and Invisible Classroom*. Thousand Oaks, CA: Sage.
- Estabrooks P and Carron AV. 1999. "The Influence of the Group with Elderly Exercisers." *Small Group Research* 30: 438–452. doi:10.1177/104649649903000403.
- Falloon I. 1981. "Interpersonal Variables in Behavioural Group Therapy." *British Journal of Medical Psychology* 54: 133–141.
- Forsyth D. 1999. *Group Dynamics*. Belmont, CA: Wadsworth Publishing.

Gu X and Solmon MA. 2011. "Group Cohesion, Achievement Motivation, and Motivational Outcomes among Female College Students." *Journal of Applied Sport Psychology* 23: 175–188. doi:10.1080/10413200.2010.548847.

Hijzen D, Boekaerts M and Vedder P. 2007. "Exploring the Links between Students' Engagement in Cooperative Learning, Their Goal Preferences and Appraisals of Instructional Conditions in the Classroom." *Learning and Instruction* 17: 673–687. doi:10.1016/j.learninstruc.2007.09.020.

Hinger B. 2006. "The Distribution of Instructional Time and Its Effect on Group Cohesion in the Foreign Language Classroom: A Comparison of Intensive and Standard Format Courses." *System* 31 (1): 97–118. doi:10.1016/j.system.2005.08.003.

Holt NL and Sparkes AC. 2001. "An Ethnographic Study of Cohesiveness in a College Soccer Team over a Season." *The Sport Psychologist* 15: 237–259. doi:10.1123/tsp.15.3.237.

Hyde RM and Flournoy DJ. 1986. "A Case against Mandatory Lecture Attendance." *Journal of Medical Education* 61: 175–176.

Landers D, Wilkinson MO, Hatfield BD and Barber H. 1982. "Causality and the Cohesion-Performance Relationship."

Journal of Sport Psychology 4: 190–183. doi:10.1123/jsp.4.2.170.

Levine J and Moreland R. 1998. "Small Groups." In *The Handbook of Social Psychology*, edited by Gilbert, D., Fiske, S. and Gardner, L., 415–469. Vol. II. Boston: McGraw-Hill.

Lloyd-Rice S and Tonigan JS. 2012. "Impressions of Alcoholics Anonymous (AA) Group Cohesion: A Case for A Nonspecific Factor Predicting Later AA Attendance." *Alcoholism Treatment Quarterly* 30: 40–51. doi:10.1080/07347324.2012.635550.

Lott AJ and Lott BE. 1966. "Group Cohesiveness and Individual Learning." *Journal of Educational Psychology* 57: 61–73. Lowe J and Gayle V. 2007. "Exploring the Work/Life/Study Balance: The Experience of Higher Education Students in a Scottish Further Education College." *Journal of Further and Higher Education* 31 (3): 225–238. doi:10.1080/

03098770701424942.

MacNair-Semands RR. 2002. "Predicting Attendance and Expectations for Group Therapy." *Group Dynamics: Theory, Research, and Practice* 6: 219–228. doi:10.1037/1089-2699.6.3.219.

Martin L, Spolander G, Ali I and Maas B. 2014. "The Evolution of Student Identity: A Case of Caveat Emptor." *Journal of Further and Higher Education* 38: 200–210. doi:10.1080/0309877X.2012.722200.

Mullen B and Copper C. 1995. "The Relation between Group Cohesiveness and Performance: An Integration."

Psychological Bulletin 115 (2): 210–227. doi:10.1037/0033-2909.115.2.210.

Murray CL and Kennedy-Lightsey CD. 2013. "Should I Stay or Should I Go?: Student Identity Gaps, Feelings, and Intent to Leave." *Communication Research Reports* 30: 96–105. doi:10.1080/08824096.2012.762894.

- Salisbury WD Carte TA and Chidambaram L. 2006. "Cohesion in Virtual Teams: Validating the Perceived Cohesion Scale in a Distributed Setting." *ACM SIGMIS Database* 37 (2/3): 147–155. doi:10.1145/1161345.1161362.
- Senior RM. 2001. "Creating Safe Learning Environments: Developing and Maintaining Class Cohesion." *Intercultural Education* 12 (3): 247–259. doi:10.1080/14675980120087462.
- Shader K Broome ME Broome CD West ME and Nash M. 2001. "Factors Influencing Satisfaction and Anticipated Turnover for Nurses in an Academic Medical Center." *Journal of Nursing Administration* 31 (4): 210–216.
- Shaw ME and Shaw LM. 1962. "Some Effects of Sociometric Grouping upon Learning in a Second Grade Classroom." *Journal of Social Psychology* 57: 453–458. doi:10.1080/00224545.1962.9710941.
- Spink, KS and Carron AV. 1992. "Group Cohesion and Adherence in Exercise Classes." *Journal of Sport and Exercise Psychology* 14: 78–86. doi:10.1123/jsep.14.1.78.
- Spink KS and Carron AV. 1993. "The Effects of Team Building on the Adherence Patterns of Female Exercise Participants." *Journal of Sport and Exercise Psychology* 15: 39–49. doi:10.1123/jsep.15.1.39.
- Spink KS and Carron AV. 1994. "Group Cohesion Effects in Exercise Classes." *Small Group Research* 25 (1): 26–42. doi:10.1177/1046496494251003.
- Sridharan B, Tai J and Boud D. 2018. "Does the Use of Summative Peer Assessment in Collaborative Group Work Inhibit Good Judgement?" *Higher Education* 1–18.
- Stapel DA and Kooman W. 2005. "Competition, Co-Operation and the Effects of Others on Me." *Journal of Personality and Social Psychology* 88: 1029–1038. doi:10.1037/0022-3514.88.6.1029.
- Steers RM, Rhodes SR. 1978. "Major Influences on Employee Attendance: A Process Model." *Journal of Applied Psychology* 63 (4): 391–407. doi:10.1037/0021-9010.63.4.391.
- Swezey R Meltzer A and Salas E. 1994. "Some Issues Involved in Motivating Team." In *Motivation: Theory and Research*, edited by H. O'Neil M and Drillings E, 141–169. Hillsdale, NY: Erlbaum.
- Tinto V. 1995. "Learning Communities, Collaborative Learning and the Pedagogy of Educational Citizenship." *AAHE Bulletin* 47: 11–13.
- Tinto V. 2000. "Learning Better Together: The Impact of Learning Communities on Student Access in Higher Education." *Journal of Institutional Research* 9 (1): 48–53.
- Tonigan JS Ashcroft F Miller WR. 1995. "AA Group Dynamics and 12-Step Activity." *Journal of Studies on Alcohol* 56: 616–621.
- Weinberg RS and Gould D. 2010. *Foundations of Sport and Exercise Psychology*. Champaign, IL: Human Kinetics.
- Widmeyer WN and Martens R. 1978. "When Cohesion Predicts Performance Outcome in Sport." *Research Quarterly* 49: 201.
- Williams JM and Widmeyer WN. 1991. "The Cohesion-Performance Outcome Relationship in a Co-Acting Sport." *Journal of Sport and Exercise Psychology* 13: 364–371. doi:10.1123/jsep.13.4.364.

Yueksel S, Baral Kulaksizođlu, I, Trksoy N and Őahin D. 2000. "Group Psychotherapy with Female-To-Male Transsexuals in Turkey." Archives of Sexual Behavior 29: 279–290.