

Benefits to faculty involved in medical school learning communities

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Abstract

Purpose: Job satisfaction plays a large role in enhancing retention and minimizing loss of physicians from careers in academic medicine. The authors explored the effect of learning communities (LCs) on the faculty members' job satisfaction.

Methods: Between October 2011 and May 2012, the authors surveyed 150 academic clinical faculty members serving as LC mentors for students at five US medical schools. Factor analysis was used to explore satisfaction themes and relationships between these themes and other characteristics.

Results: Factor analysis revealed two major sources of this satisfaction: a Campus Engagement factor (e.g., feeling happier, improved sense of community, better communication skills, and feeling more productive) and a skills factor (e.g., improved clinical skills, being a better doctor). Higher Campus Engagement factor satisfaction was associated with less desire to leave the learning community ($p=0.01$) and more FTE support for role in LC ($p=0.001$). Higher skills factor satisfaction was associated with the school that provided more structured faculty development ($p=0.0001$).

Conclusion: Academic clinical faculty members reported serving as a mentor in an LC was a strong source of job satisfaction. LC may be a tool for retaining clinical faculty members in academic careers.

Introduction

Medical schools in the US are facing critical job satisfaction issues among their faculty. Competing priorities of patient care, generation of clinical revenue, research, administration, and education have contributed to a culture where faculty struggle to find fulfillment. With a baseline of more than 45% of physicians in the United States at risk for burnout (Shanafelt et al. 2012), it is concerning that the pressures of academic medicine may compound this risk. In a recent study, 14% of academic faculty considered leaving their institution during the prior year while 21% considered leaving academic medicine altogether because of dissatisfaction (Pololi et al. 2012). Sources of dissatisfaction are varied but correlate with negative perceptions of the academic culture, such as feeling disconnected with others and lacking collegial engagement (Bunton et al. 2012). A study of faculty at five medical schools highlighted the presence of a negative relational cultures in academic medical centers “that can affect faculty vitality, professionalism, and productivity and are linked to retention” (Pololi et al. 2009a).

There are data suggesting possible solutions to academic job dissatisfaction. Sources of workplace satisfaction among US medical faculty demonstrated strong correlates including

Practice points

- Serving as a faculty mentor in a medical school learning community may be an effective tool to promote job satisfaction.
- Involvement in medical school learning communities increases faculty engagement with the academic community and may improve faculty clinical skills.
- Formalized financial support, protected teaching time, and faculty development for learning community mentors increase faculty engagement benefits.

departmental relationships, workplace culture, collaboration opportunities, and appreciation by learners (Bunton et al. 2012). Many student-focused solutions to social isolation, ethical erosion, and lack of support for medical students have been proposed and instituted. These include the incorporation of longitudinal relationships between faculty and students in small group settings with more emphasis on role-modeling and continuity (Branch et al. 1997; Hafferty 1998).

Learning communities (LCs) offer a deliberate, structured education, and advising environment based on longitudinal

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groups of faculty mentors and students learning together (McMillan & Chavis 1986), and have become increasingly prevalent in medical education over the past decade (Ferguson et al. 2009). Despite wide variation in the structure of learning communities, they can be defined broadly as a group of people who share common values and beliefs and are actively engaged in learning from each other (Baker 1999).

Appropriately, most of the discussion around learning communities has focused on the numerous benefits to students (Goldstein et al. 2005; Jackson et al. 2009). However, a model of continuity and sustained relationships may have a positive impact on the academic culture for faculty as well. Given a potential serious crisis of faculty attrition from academic centers and a rapidly expanding framework of learning communities in medical education (Ferguson et al. 2009), we sought to describe the perceived faculty benefits of involvement in medical school learning communities through a survey of current faculty at five schools.

The structure, qualities, and process of learning community structures in US medical schools have recently been summarized (Smith et al. 2014). Typically, medical students are randomly assigned into small learning groups that maintain continuity over time – either within a course, during the pre-clinical years, or over the entire four years. A faculty member is assigned to each student group, with value placed on continuity and longitudinal relationships as a core feature of this structure. The focus of the learning can vary, but typically engage learners in various activities leading towards professional identity formation: clinical skills training, bedside teaching, integration of basic and clinical sciences, communication skills, professionalism, and career advising. Meetings are more variable in years 3 and 4 and often involve continued career advice, mentoring, and social activities. These small groups may be combined into a larger college/society/academy for additional advising or curricular functions.

Methods

Study design

The design was a cross-sectional survey of academic faculty members to assess their satisfaction with and the perceived benefits of participating in learning communities with medical students.

Subjects and setting

We surveyed all learning community (LC) faculty from five medical schools by questionnaire; our sample size was 150. The authors at each of the participating school served as the survey champion, following up with non-responders. All schools were members of the LCs institute, a national group of educators interested in learning communities in health education. The characteristics of the learning communities at these five schools are summarized in Table 3. Faculty subjects were identified for the participation by their respective LC leaders, who are authors of this study. The five medical schools included were Johns Hopkins University, University of Arizona – Tucson Campus, University of Texas Southwestern, University of Virginia, and Vanderbilt University.

Instrument development and data collection

The study questionnaire was developed and iteratively revised over a period of several months by all members of the study team. The authors sought to assemble a series of questions that might identify the positive or negative impact that faculty experience by participating in LCs. The survey was further refined by literature review (Goldstein et al. 2005; Ferguson et al. 2009; Jackson et al. 2009; SAS Institute, Inc. 2010). The research team assembled a survey containing 40 questions covering institutional role, LC role, percent LC effort and compensation, type of LC activities, and impact of faculty LC participation. Questions and response options included multiple choice, 5-point Likert scale (strongly agree to strongly disagree) and free text formats. The survey also contained a 13-item scale assessing the effects of the learning community upon the respondent.

Electronic surveys were sent to all 150 faculty members serving as LC mentors at five US medical schools. Survey data were collected and managed using REDCap electronic data capture tools hosted at Vanderbilt (Harris et al. 2009). Faculty participated on a voluntary basis by answering questions online. All responses were anonymized to preserve subject confidentiality. This study was approved by institutional review boards at each of the five institutions.

Data analysis

We analyzed survey responses using Statistical Analysis Software (SAS, SAS Institute Inc., Cary, NC) Version 9.3. Responder characteristics are presented as proportions and means.

A factor analysis was performed on the data. A principal component analysis was done on the attitudinal items from the survey. Two factors were extracted based on a parallel analysis criterion to determine the number of factors (Horn 1965; Humphreys & Ilgen 1969; Humphreys & Montanelli 1975). The two factors were rotated to a promax (oblique) criterion.

Results

One-hundred twenty-nine of the 150 LC faculty completed surveys (86% response rate). The survey showed that LC faculty members perform many different roles, such as clinician, administrator, researcher, LC faculty (defined as the “teacher” in the LC teacher-learner relationship), educator, or other.

The overall benefits of LCs perceived by faculty members are displayed in Table 1. Ninety-six percent of LC faculty reported LC involvement has made them happier and satisfied with their jobs, while for 87% LC involvement improved their sense of belonging to their institution.

Exploratory factor analysis of the 13 item LC effect scale indicated a coefficient alpha internal consistency of 0.86. This means that the scale items go together well to define the construct. Two factors met the parallel analysis criterion (Horn 1965). In other words, the first two factors in the data each accounted for more variance than randomly generated factors, but the reverse was true of the subsequent factors. Following the Promax rotation, two important factors were identified. These two factors are defined in Table 2. Factor I is

Table 1. Faculty benefits of learning communities.

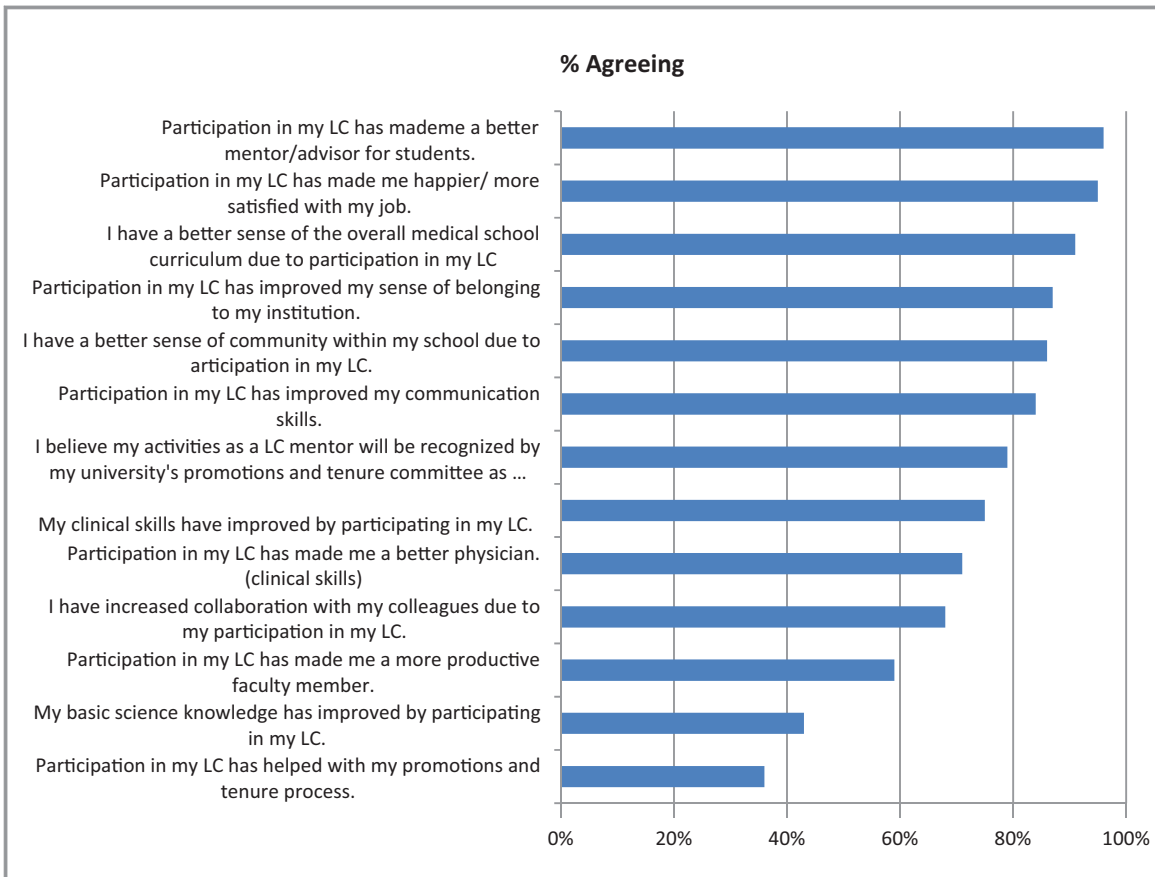


Table 2. Factor loadings on questions assessing the effect of learning communities.

	Factor pattern	
	I	II
1. I have a better sense of the overall medical school curriculum due to participation in my LC	0.40	0.16
2. I have a better sense of community within my school due to participation in my LC	0.65	0.16
3. I have increased collaboration with my colleagues due to my participation in my LC	0.62	0.12
4. Participation in my LC has improved my communication skills	0.70	0.05
5. Participation in my LC has made me a more productive faculty member	0.63	0.29
6. Participation in my LC has made me happier/more satisfied with my job	0.82	-0.06
7. Participation in my LC has made me a better mentor/advisor for students	0.86	-0.12
8. Participation in my LC has improved my sense of belonging to my institution	0.86	-0.12
9. My clinical skills have improved by participating in my LC	-0.06	0.82
10. My basic science knowledge has improved by participating in my LC	-0.14	0.85
11. I believe my activities as a LC mentor will be recognized by my university's Promotions and Tenure committee as supporting our teaching mission	0.18	0.44
12. Participation in my LC has made me a better physician. (clinical skills)	0.28	0.65
13. Participation in my LC has helped with my promotions and tenure process	0.31	0.32

Bold values indicate the question contributing most significantly to the factors.

represented by the first eight items and Factor II is represented by the following four items. Item 13 cross loaded on the two factors so it was ignored in further analyses because it was equivocal with regard to what the factors measured. Factor I accounted for 0.37 of the total variance, and factor II accounted for 0.23 of the total variance, ignoring each other's contribution. This means that the two factors accounted for slightly more than half of the variance in the data, which is typical for data obtained from individual items which tend to

be somewhat "noisy." The two factors correlated 0.34, which is a moderate degree of correlation.

Next, we grouped the eight factor I items to form a Campus Engagement theme and the four factor II items to form a Clinical Skills theme. The respective alpha coefficients were 0.85 and 0.67, demonstrating good internal consistency. The themes were then correlated with other variables in the survey. MANOVA was used to detect differences among the participating schools as well as other variables.

Table 3. Characteristics of Schools' Learning Communities.

School	FTE support	Career advising	Clinical skills	Wellness	Communities per class	Mentors per community	Student to mentor ratio
A	0.20	Y	Y	N	4	6	5:1
B	0 ^a	N	Y	N	6	6–7	6:1
C	0.30	Y	Y	N	4	5	6:1
D	0 ^a	Y	Y	N	4	12–14	6:2
E	0.30	Y	N	Y	4	2	12:1

^aParticipating schools with zero FTE support provided stipends for mentors.

We then compared the two themes across the five medical schools. The Campus Engagement factor did not differ across medical schools, but the Clinical Skills theme did ($F(4, 114) = 2.07, p = 0.0895$ and $10.54, p < 0.0001$, respectively). The omnibus significance test (Wilkes' lambda) was also significant ($F(8, 226) = 6.45, p < 0.0001$), indicating the low probability of this relationship is due to chance. Using the Tukey HSD criterion, School C's mean (4.37 of a maximum of 5.00) for the skills theme was higher than the remaining four Schools' means, but the latter means, which ranged from 3.35 to 3.67, did not differ from one another. This suggests School C was perceived to confer better clinical skills to its mentors than the other schools.

The Campus Engagement factor showed a negative correlation with an intent to leave the LC ($r = -0.24, p = 0.01$), suggesting that the Campus Engagement benefits of an LC are associated with retention of faculty. The Campus Engagement factor also demonstrated a slight positive correlation with FTE support ($r = 0.25, p = 0.01$), suggesting the Campus Engagement benefits were associated with formalized financial support and protected teaching time. Faculty support for mentors in LCs ranged from no FTE support (although stipends were paid) to 30% FTE support for time spent teaching in an LC. All LC faculty serving as mentors at a single school were supported according to Table 3. The remaining correlations with the two themes were of trivial magnitude and non-significant.

Discussion and conclusion

This study suggests a medical school learning environment that includes LCs may have significant benefit for faculty members and their institutions as well. These data suggest that LCs may be an effective tool to promote job satisfaction among academic faculty. Factor analysis of survey data demonstrates two major benefits: improved clinical skills and increased engagement with the academic community. A more detailed analysis of how these benefits are accomplished at different schools may be helpful.

Three general characteristics of medical learning communities have been defined by the Learning Communities Institute (LCI, 2013); most medical school learning communities utilize a combination:

Curriculum: Groups of medical students working with a specific faculty member whose responsibility is to teach a defined curriculum to the students in a longitudinal fashion over two–four years of medical school. Examples of curricular

aspects include clinical skills, professional development, and medical humanities.

Advising: Faculty has a significant role in advising and/or mentoring medical students in a continuity relationship. Formalized topics typically include career counseling.

Social/support: Specific faculty meets with medical students in a longitudinal fashion to provide support and/or participate in professional social events. This may be in the form of regular meetings with faculty/fellow students or other support staff, team building exercises, or other regular social events.

The medical schools participating in this survey featured LCs with differing characteristics as outlined in Table 3.

Associations of these characteristic with the factor analysis of this survey also revealed interesting data. The strongest finding was the perceived enhancement of improved clinical skills noted in the LC at School C compared with the other involved schools. Significant resources (structured, weekly meetings of mentors to develop and standardize knowledge, and skills) are devoted to faculty development by School C (Moynahan & Gordon 2010), more than the other schools in this study. This serves as a critical reminder of the importance of teaching the teachers.

Another important correlation was seen during analysis of the Campus Engagement factor. Faculty who reported more Campus Engagement was less likely to report an intention to leave the LC. This could mean the engagement, as defined in the component questions of this Factor, outweighed pressures from other aspects of a faculty members work such as clinical income generation. Further, faculty with more salary support for LC activities in the form of FTEs was more likely to experience the Campus Engagement factor benefit. This may suggest being well supported financially to teach students, irrespective of the learning community is a key component for job satisfaction and feeling engaged with your work, especially for clinical teachers.

There are limitations of this study. The design of a cross-sectional study without a control group is a limitation. The cross-sectional nature of the study allows no measure of the duration of the observed effects and allows no assessment of causation. Further, the study solicited perceptions of faculty rather than objective outcome measures.

The data on School C's faculty's self-perceived clinical skills, which are reported to be higher than the self-perceived skills of faculty in the other schools, may or may not be related to the faculty development provided at School C. Self-assessment of clinical skills is often imprecise in physicians. It is possible that School C hires and retains faculty who have

stronger clinical skills that faculty at the other school, regardless of their faculty development program.

Each of the five involved medical schools have relatively young LCs (average age of 4 years, range 2–6 years); it is possible some or all of these LCs have not yet reached a steady state, when the novelty of a curriculum intervention has dissipated and the minor adjustments required of any major curriculum intervention have occurred. Given the relative youth of the LC movement, this preliminary reporting could lead to future studies with more well-defined outcome measures.

This study only begins to explore the characteristics of the LC experience that have the most impact on faculty satisfaction; further studies are needed to elucidate the most effective qualities of successful LCs. Such studies may include a larger multi-institutional cohort of LC faculty and outcome measures such as retention of LC faculty vs. faculty not involved in LCs. Such studies may also consider a more qualitative understanding of the experience of faculty in LC's – what they value and why, especially why they enjoy it so much.

In summary, the primary purpose for the establishment of LCs is to enhance the educational experience of our learners, rather than enhancing faculty job satisfaction. However, this study supports the importance of LCs for faculty learning and well being, as well. Involvement in an LC offers a faculty member the opportunity to collaborate with colleagues, establish positive and longitudinal relationships with learners, and develop a sense of connectedness with their academic institution. The authors believe that these are the main contributors to the satisfaction found in this study.

Given this secondary benefit of LCs, these data could be used to make the financial argument that funding an LC could help with faculty retention (and, therefore, decrease the costs of turnover). Learning communities can address the serious issues that currently exist in the relational culture of academic medicine that have led to dissatisfaction and attrition (Pololi et al. 2009a, b, 2012). Further studies may show that LC's provide a way forward to fortify the relational culture of academic medical centers and build a greater sense of connectedness among faculty members. Medical schools should consider establishing or enhancing existing LCs not only for the benefit of their students but also for recruitment and retention of talented and valuable medical educators.

Glossary

Learning communities: An educational infrastructure that offers a deliberate, education, and advising environment based on the longitudinal groups of faculty mentors and students learning together.

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