Assessing the Academic Medical Center as a Supportive Learning Community

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Abstract

Academic medical centers are well-known for their emphasis on teaching, research and public service; however, like most large, bureaucratic organizations, they oftentimes suffer from an inability to learn as an organization. The role of the research administrator in the academic medical center has grown over time as the profession itself has become more important in the management of the research enterprise. The field of research administration within academic medical centers has grown to encompass a wide variety of responsibilities, including making sense of complicated rules, systems and processes in the administration of sponsored research, as well as managing the burden of regulatory compliance with applicable laws, contracts, institutional policies and sponsor guidelines. Keeping abreast of the complicated and fluctuating laws, guidelines, administrative processes and systems, and means of compliance is complicated even for the experienced research professional. This problem is compounded by struggles to foster the sharing of knowledge to new employees. Using an existing assessment tool, 121 research administrators at a large, private academic medical center were surveyed to define their perception of the academic medical center as a learning community (both collectively and by department type, gender and tenure) and to identify gaps in knowledge sharing, idea development, ability to learn from mistakes and reflective thinking.

Background & Objectives

Now more than ever, individuals involved in research administration are faced with a multitude of challenging situations that go well beyond the basics of business administration. They are expected to have a thorough understanding of compliance issues, including the requirements and regulations of sponsors, the federal government and the institution, as well as more general guidelines for the responsible conduct of research. As managers of project and department budgets, administrators are charged with detailed accounting for sponsored research activities, above the traditional institutional and gift funds, while keeping their documentation organized in preparation for internal and external audits of financial data. They must stay current on the institution's business practices and technology to conduct their department's research-related business. As research funding becomes more competitive, an administrator must become familiar with a myriad of sponsors and their manifold policies and forms. Finally, the administrator must support faculty members who conduct research in the medical center throughout the research process, because in many cases, faculty members face numerous stressors, including the need to attain and maintain adequate research funding (Smesny, 2007), which may limit their ability to manage the minor administrative details of a large project (Emans, Goldberg, Milstein, & Dobriner, 2008). To successfully navigate the challenges they face, research administrators need to be involved in learning communities, which Garvin, Edmondson, and Gino (2008) define as "a place where employees excel at creating, acquiring, and transferring knowledge" (p. 110).

Standing on the shoulders of Senge (1990), Garvin, Edmondson, and Gino (2008) developed a concrete standard assessment tool for examining the learning organization (LO). Their survey tool allows companies to measure "the learning that occurs in a department, office, project, or division–an organizational unit of any size that has meaningful shared or overlapping work activities" (p. 110). Their instrument also includes targeted solutions and concrete prescriptions for improving the LO. In applying Garvin, Edmondson, and Gino's tool, this one-institution case study attempts to answer three research questions about the intersection of the LO and the academic medical center:

1. To what extent is the academic medical center an LO by research administrators?
2. Does the degree to which research administrators see the academic medical center as an LO vary by department type within the research enterprise?
3. Does the degree to which research administrators see the academic medical center as an LO vary by sex or tenure in the unit, in the position, or at the medical center?

To answer these questions, a modified version of Garvin, Edmondson, and Gino's survey instrument was administered in a sample of convenience to 121 research administrators at a large, private academic medical center in the southeast United States.

Literature Review

Garvin, Edmondson, and Gino (2008) define an LO as a highly adaptable organization, "made up of employees skilled at creating, acquiring and transferring knowledge" (p. 109). While creating, acquiring, and transferring knowledge are among the chief goals of the research enterprise of any academic medical center, most of these efforts are limited to the domains of the faculty, students and other non-faculty personnel, including non-faculty clinical providers. Institutions go to great lengths to foster and cultivate an environment that supports this knowledge-based system, oftentimes without considering the need to encourage such an environment for its research administrators. This approach neglects the important role administrators play in the research enterprise.

Research administrators form a distinct professional class within the institution in both academic medical centers and more traditional postsecondary institutions. "They are an integral part of the environment of university research and they shape the work conditions, the opportunity structure, and constraints" (Schuetzenmeister, 2010, p. 4). Gardner, Verma, and Payne (2006) define research administration as "the administrative ability that focuses primarily on planning, organizing and developing processes and methodologies to ensure that the research team effort is effective, efficient and successful" (p. 1). Meanwhile, Gumport and Sporn (1985) describe administrators as "the key actors who mediate and even manage the relationships between the organization and its environments" (p. 105). Although lab managers, animal care technicians, budget accountants, and other administrators have been crucial to the research enterprise since its inception, the advent of the research professional is a bureaucratic response to the demands of sponsors, which include federal and state governments, industry and the non-profit research-based organizations that emerged with the rise of the research university in the 1960s (Atkinson, Gilleland, & Barrett, 2007). As research funding became more important to universities, and the volume of sponsored research funding grew, the role and number of research professionals and their level of responsibility grew (Gumport & Sporn, 1985). This professional role expanded to include making sense of complicated rules, systems and processes in the administration of sponsored research as well as the management of the burden of regulatory compliance with applicable laws, contracts, institutional policies and sponsor guidelines (Atkinson, Gilleland, & Barrett, 2007; Cole, 2007). As competition for federal funding increases and universities face additional scrutiny from sponsors and the federal government, the role of research administrators becomes more important and difficult, which in some areas leads to high levels of stress and high turnover rates (Vasgird, 2007). The 2007 Research Administrator Stress Perception Survey found 41.3 percent of respondents had high work-related stress, while 66 percent reported having inadequate resources to complete their jobs (Shambrook & Brawman-Mintzer, 2006). Though fostering a learning organization (LO) requires an institution to commit both time and resources, the organizational results include increased levels of tolerance, open discussion, and holistic and systemic thinking, which would likely reduce work-related stress among administrators (Garvin, Edmondson, & Gino, 2008). The need for such

outcomes has only increased in recent years, with unprecedented growth in required compliance and administrative activity, including the administrative requirements linked to research funded by $787 billion in federal stimulus funds (Basken, 2010).

Garvin, Edmondson, and Gino (2008) offer leaders a model of the LO and provide a concrete instrument that can be used to assess the extent to which an organization is an LO. The results of the survey and a comparison of institutional results to established benchmarks provide specific steps organizations can take to cultivate the LO, and which are tied to three key building blocks of LOs and characteristics of those building blocks, which had previously been absent in the LO literature. A unique benchmarking feature permits organizations to compare their institution to others or compare units within an institution. A review of the LO literature indicates no previous use of this instrument to study higher education or the research enterprise as an LO. However, higher education, especially an academic medical center, is uniquely tied to both the world of academia and the world of organized health care delivery, and the model was chosen for its potential to be very useful.

This study is grounded in and focused on the world of research administrators, who usually operate outside the acquisition, creation and transference of knowledge in the research context, but who must be actively engaged in the learning process. Because research administrators face a number of obstacles to successfully supporting faculty members' sponsored research activities, including navigating the difficult waters of compliance, accounting practices, software packages, sponsor-specific practices and faculty support, they need a thriving learning community. This assessment will hold up a mirror to one academic medical center, determine the extent to which its research administrators perceive the research enterprise as an LO, and identify gaps in the environment that inhibit its growth.

Conceptual Framework

Garvin, Edmondson, and Gino (2008) divide the LO into three building blocks: a supportive learning environment, concrete learning processes and practices, and leadership that reinforces learning, suggesting that "different mechanisms are at work in each building-block area and that improving performance in each is likely to require distinct supporting activities" (p. 110). The three building blocks are:

1. The Supportive Learning Environment has four characteristics: providing the psychological safety needed for employees to express themselves and make mistakes; an appreciation of differences in ideas, outlooks and worldviews; openness to new ideas; and time for reflection. The organization that makes time for reflection likely learns from its mistakes because it pauses and thoughtfully reviews and discusses institutional practices. These pauses also reduce the level of stress for employees by creating space between actions.

2. Concrete Learning Practices and Processes includes five characteristics, which Garvin, Edmondson, and Gino (2008) call "concrete steps and widely distributed activities [including] … generation, collection, interpretation, and dissemination of information" (p. 111). These steps include experimentation with new methods and processes, collecting and sharing information both within and outside the institution, analysis and interpretation of information, and both lateral and vertical education and training efforts.

3. Leadership that Reinforces Learning has only one characteristic, which is based on the behavior of the institution's or unit's leaders and the nature of the leaders' behavior within the organization and role they play in actively encouraging or fostering the LO.

Garvin, Edmondson, and Gino acknowledge that the three building blocks and their components "reinforce one another and, to some degree, overlap," (p. 113), but this is part of the LO and reflects supportive relationships among formal leaders, the environment, and individuals who make up the organization.

Methods

The 55-question tool developed by Garvin, Edmondson, and Gino (2008) was used in its entirety, but modified to fit the research context and experiences of research administrators in this academic medical center. For example, the word *unit* was replaced with *department or division*, and other qualifiers were added to keep respondents' focus on their subunit within this academic medical center. A question added to the Information Transfer characteristics expanded 'learning from' to include general central offices responsible for research compliance areas within the institution. The survey also added five demographic questions about work area, tenure and sex.

The researcher transcribed the survey using online REDCap software and obtained an exemption from the Institutional Review Board. Next, the researcher emailed requests to 240 research administrators at a large, private academic medical center. These research administrators included those from both clinical and non-clinical departments, divisions, and central offices. In the recruitment email, respondents were asked to forward the message to other research administrators within the organization. More than 160 surveys were started and 121 were fully completed over nine data collection days, for a response rate of approximately 50%; it is unknown how many respondents received the initial request and how many responded through snowball sampling. A reminder email was sent on day seven to all of the 240 original recipients. Data from REDCap were exported into SPSS 17.0 and recoded as appropriate.

Survey respondents were mostly female (84.3%), which closely resembles Shambrook and Brawman-Mintzer's (2006) occupational survey of research administrators, in which 83% of respondents were female. The greatest number of respondents identified themselves as working in a clinical department (49%), which

is to be expected in an academic medical center. The balance of respondents came from non-clinical departments (29%) and central offices (22%). Sixty-three percent of respondents had worked in their department or division for three or more years, 93% of whom had been in their current position within the same department or division for three or more years. Overall, 82% of respondents had worked at this academic medical center for three or more years, with 43.8% having 10 or more years of experience in research administration at this academic medical center. These findings are also consistent with Shambrook and Brawman-Mintzer's (2006) sample, in which 40% of respondents had more than 10 years of experience in research administration.

Dependent variables were derived from survey questions, as modified from the original Garvin, Edmondson, and Gino (2008) LO tool. Criteria were ranked from 1 to 7; high scores correspond to a greater degree of LO. In this medical center, items with high mean scores included: sharing information about what works and what does not work (5.5), people's interest in doing things in better ways (5.6), 'aluing education and training (5.5), and making time for education and training activities (5.5). Items with low mean scores included: differences of opinion (3.2), valuing opinions outside the norm (3.3), and experiencing low levels of stress (3.1). Median scores for all 56 dependent variables were within one point of the mean score; most varied less than 0.5 point. The largest variability was in information collected on those we serve (0.8) and providing education and training to experienced employees (0.9). The standard deviation for all variables was less than 2.0; 66 percent of variation among responses was clustered tightly around the mean.

Table 1. Dependent Variable Scales

	Variables*	Mean	Max	Alpha
Building Block 1: Supportive Learning Environment				
Psychological Safety Scale	5	25.9	35	.816
Appreciation of Differences Scale	4	17.8	28	.663
Openness to New Ideas Scale	4	20.9	28	.856
Time for Reflection Scale	5	21.2	35	.867
Building Block 2: Concrete Learning Processes and Practices				
Psychological Safety Scale	4	16.0	28	.760
Appreciation of Differences Scale	6	27.4	42	.831
Openness to New Ideas Scale	5	22.9	35	.786
Time for Reflection Scale	6	30.6	42	.918
Psychological Safety Scale	9	43.1	63	.815
Building Block 3: Leadership that Reinforces Behavior				
Leadership that Reinforces Behavior	8	31.3	40	.924

*Variables for Building Blocks 1 and 2 contains 7-item questions while variables for Building Block 3 contains 5-item questions

Following from Garvin, Edmondson, and Gino (2008), items were grouped by building block and characteristic to test their reliability as scales for the characteristic. Of 13 scales, 12 had Cronbach's Alpha greater than .70 (see Table 1), indicating strong reliability. The remaining scale had Cronbach's Alpha of .66, which suggests that the scale is just below the threshold of acceptance. On this particular scale, one question in the survey (handling differences of opinion publically rather than offline) appears to have reduced the internal reliability. Omitting this variable would increase the reliability of the scale; however, for the purposes of comparison to the original benchmark data from Garvin, Edmondson, and Gino (2008), the scale has been included as originally defined and is deemed to be substantively significant.

Data Analysis

Compiled building block characteristic scales were tabulated for comparison to benchmark findings from Garvin, Edmondson, and Gino (2008) to answer the first research question. Their benchmark scores were "derived from surveys of large groups of senior executives in a variety of industries" (p. 114). To convert a scale to a score, the raw scores for the scale were multiplied by 100, divided by the number of points on the scale and then divided by the number of questions in the scale. Table 2 compares scores from this academic medical center with benchmark scores from Garvin, Edmondson, and

Table 2. Comparison of Mean Scale Scores to Benchmark Scales Scores

		Benchmark Scaled Score				
Building Blocks and Their Subcomponents	Mean Scale Scores	Bottom Quartile	Second Quartile	Median Score	Third Quartile	Top Quartile
Supportive Learning Environment						
Psychological Safety	74.0	31-66	67-75	76	77-86	87-100
Appreciation of Differences*	50.0	14-56	57-63	64	65-79	80-100
Openness to New Ideas	74.7	38-80	81-89	90	91-95	96-100
Time for Reflection	60.6	14-35	36-49	50	51-64	65-100
Learning Environment Composite	65.2	31-61	62-70	71	72-79	80-90
Concrete Learning Processes and Practices						
Experimentation	57.1	18-53	54-70	71	72-82	83-100
Information Collection	65.4	23-70	71-79	80	81-89	90-100
Analysis	65.6	19-56	57-70	71	72-86	87-100
Education and Training	72.9	26-58	69-79	80	81-89	90-100
Information Transfer	68.5	34-60	61-70	71	72-84	85-100
Learning Processes Composite	66.8	31-62	63-73	74	75-82	83-97
Leadership that Reinforces Learning						
Composite for this Block	73.4	33-66	67-75	76	77-82	83-100

*This scale is not statistically significant (alpha=0.66)

Gino). Scale means were next grouped by demographic features, such as department type, tenure and sex of the respondent, and compared to median benchmark scores to answer the second and third research questions.

Results

Question 1:

In addressing the first research question, which asks the extent to which the research enterprise within the academic medical center is seen as a learning organization by research administrators, Table 2 compares mean scores from this study to original benchmark scores developed by Garvin, Edmondson and Gino. Eleven of 12 scales from this large, private academic medical center fall below median benchmark scores, with three scales falling into the bottom quartile of the benchmark scales. With a scaled mean of 60 (out of 100), the Time for Reflection scale (including items that measure whether or not the organization reviews its work, invests in improvement and reflects on past action) was the only scale on which the research enterprise within the medical center scored higher than the benchmark. This suggests that the academic medical center does take time to review its processes and evaluate how work is going.

Three scales fell in the bottom quartile: Information Collection (mean of 65.4), Openness to New Ideas (mean of 74.7) and Appreciation of Differences (50.0). The Information Collection scale measures whether or not the unit collects information on customers, competitors, economic and social trends, and whether or not it compares itself to other departments and divisions both inside and outside the institution. The Appreciation of Differences scale measures how open the department or division is to differences of opinion and alternative ways of doing work. As mentioned earlier, one question to assess whether differences of opinion are addressed publicly or in private likely reduced the score on this scale to the lowest quartile. The Openness to New Ideas scale is related to the Appreciation of Differences scale; together they indicate a supportive learning environment in the first building block of the LO. The mean score for the Openness to New Ideas scale is higher than other scores from this institution (74.7), but this scale also has the highest benchmark median score (90). A high score on this scale suggests that an institution values new ideas and doing things in new and better ways, and is not resistant to untried approaches. While this scale is actually the highest of the mean scaled scores for the academic medical center—dovetailing with the median benchmark score—it is still well below the benchmark score for this scale.

Question 2:

The second research question asked if the degree to which research administrators see the academic medical center as a learning organization varies by department type within the research enterprise. Table 3 compares the mean scores from this study by department type to the original benchmark scores, as well as to each other.

Survey respondents indicated their department type as central office, clinical department or non-clinical department. Of these three department types, those responding from central offices had seven of the highest mean scores across the 12 scales. Clinical departments had eight of the lowest mean scores; however all scaled means were basically the same when reduced to the original values, indicating limited variability by department type. This also suggests a consensus on the perception of the institution as a learning organization. Three scaled means for central office respondents were above the median benchmark score from the original Garvin, Edmondson, and Gino (2008) study, including the Time for Reflection (67.3), Information Transfer (74.1) and Leadership that Reinforces Learning (76.7) scales. The mean scaled score for Time for Reflection was 17.3 points above the median for the central office, 7.6 points above the median for non-clinical departments and 10.4 points above the median for non-clinical departments. For the Appreciation of Differences and Information Collection scales, all three department types fell well below the median score. The greatest disparity, however, was for the central office on the Openness to New Ideas scale, which fell 20.3 points below the median. By the overall numbers, the central office is clearly closer to the median benchmark; however, the tight clustering of scores indicates that all three areas of emphasis are relatively similar in their perceptions of the learning community within the institution.

Table 3. Comparison of Means for Department Type to Benchmark Scales Scores

Building Blocks and Their Subcomponents	Mean Scale Scores	Median Benchmark Score	Central Office	Non-Clinical Department	Clinical Department
Supportive Learning Environment					
Psychological Safety	74.0	76	74.8	74.0	73.3
Appreciation of Differences*	50.0	64	47.3	52.6	50.1
Openness to New Ideas	74.7	90	69.7	77.4	74.0
Time for Reflection	60.6	50	67.3	57.6	60.4
Learning Environment Composite	65.2	71	65.4	64.7	65.4
Concrete Learning Processes and Practices					
Experimentation	57.1	71	55.1	58.0	57.2
Information Collection	65.4	80	65.4	66.6	63.4
Analysis	65.6	71	70.2	64.6	63.9
Education and Training	72.9	80	75.6	72.3	71.9
Information Transfer	68.5	71	74.1	66.6	67.5
Learning Processes Composite	66.8	74	69.5	66.2	65.6
Leadership that Reinforces Learning					
Composite for this Block	73.4	76	76.7	71.3	74.5

*This scale is not statistically significant (alpha=0.66)

Question 3:

Tables 4 to 6 address the third research question, which asks if the degree to which research administrators see the academic medical center as a learning organization varies based on sex or tenure in the unit, in the position, or at the medical center. The survey included five possible answers to questions, including less than a year, one to three years, three to five years, five to ten years and more than 10 years. These categories were created by the researcher arbitrarily because the extant literature on research administration does not identify typical tenure lengths, thus analysis of the tenure variables structured in this way did not yield any noteworthy findings; however, when they were computed to show tenure as either less than five years or more than five years, slight differences were observed. Employees who have been in their role, department or division or at the institution for more than five years had higher scaled scores overall. When grouped by tenure, no group has a scaled mean higher than the benchmark median score. For those scores below the median benchmark, none had a variance of nine or more points below the median benchmark. Tenure does appear to have an impact on the perception of a learning organization; however, tenure does not explain the institution's mean scaled score variance from the median benchmark scores.

Table 4. Comparison of Means for Tenure in the Department or Division to Benchmark Scales Scores

Building Blocks and Their Subcomponents	Mean Scale Scores	Median Benchmark Score	Less than 5 Years Tenure	5 or More Years Tenure
Supportive Learning Environment				
Learning Environment Composite	65.2	71	63.9	67.0
Concrete Learning Processes and Practices				
Learning Processes Composite	66.8	74	65.4	68.5
Leadership that Reinforces Learning				
Composite for this Block	73.4	76	72.6	74.5

*This scale is not statistically significant (alpha=0.66)

Table 5. Comparison of Means for Tenure in that Role to Benchmark Scales Scores

Building Blocks and Their Subcomponents	Mean Scale Scores	Median Benchmark Score	Less than 5 Years Tenure	5 or More Years Tenure
Supportive Learning Environment				
Learning Environment Composite	65.2	71	64.3	67.2
Concrete Learning Processes and Practices				
Learning Processes Composite	66.8	74	65.7	69.0
Leadership that Reinforces Learning				
Composite for this Block	73.4	76	73.5	73.3

Table 6. Comparison of Means for Tenure at the Institution to Benchmark Scales Scores

Building Blocks and Their Subcomponents	Mean Scale Scores	Median Benchmark Score	Less than 5 Years Tenure	5 or More Years Tenure
Supportive Learning Environment				
Learning Environment Composite	65.2	71	64.0	65.9
Concrete Learning Processes and Practices				
Learning Processes Composite	66.8	74	65.7	67.4
Leadership that Reinforces Learning				
Composite for this Block	73.4	76	72.2	74.1

Table 7 compares the mean scaled scores from this study with the benchmark score by sex. With higher scaled means on nine of 12 scales, female respondents were more likely to see the institution as a learning organization; however, like tenure and department type, scores are very similar, and, when reduced, are tightly configured. In comparing the scores by gender, some scale scores are quite close, such as Education and Training with a difference of 0.3; however, the variation is more pronounced in other scales. Female respondents scored 6.9 points higher on the Information Collection scale than males and 6.2 points higher than males on the Leadership that Reinforces Learning

Table 7. Comparison of Means for Gender to Benchmark Scales Scores

Building Blocks and Their Subcomponents	Mean Scale Scores	Median Benchmark Score	Female	Male
Supportive Learning Environment				
Psychological Safety	74.0	76	74.7	70.0
Appreciation of Differences*	50.0	64	50.1	53.5
Openness to New Ideas	74.7	90	75.1	72.3
Time for Reflection	60.6	50	61.2	57.2
Learning Environment Composite	65.2	71	65.6	63.3
Concrete Learning Processes and Practices				
Experimentation	57.1	71	56.4	60.9
Information Collection	65.4	80	66.5	59.6
Analysis	65.6	71	66.3	62.2
Education and Training	72.9	80	72.9	73.1
Information Transfer	68.5	71	68.9	66.7
Learning Processes Composite	66.8	74	67.1	65.0
Leadership that Reinforces Learning				
Composite for this Block	73.4	76	74.4	68.2

*This scale is not statistically significant (alpha=0.66)

scale. In comparing the mean scaled score by gender to the benchmark scores, only the Time for Reflection scale is above the median, with females 11.2 points above the median and males 7.2 points below the median. Mean scaled scores for males were well below the median on the Information Collection (-20.4) and Openness to New Ideas (-17.7). Although there are differences between the males and females, these differences do little to explain the overall mean scaled scores and their relationship to the median benchmark scores.

Discussion & Conclusion

This study utilized an existing tool designed to measure the extent to which an organization has the characteristics of a learning organization. The tool has been used across business sectors, and was adapted for this study in a large, private academic medical center and, more specifically, to the role of the research administrator in that setting. Results suggest that the academic medical center is an LO, but not a very strong one when compared to the benchmark set by the original Garvin, Edmondson, and Gino (2008) study. This paper discusses many areas where adjustments should be made, especially in the areas of information collection and the cultivation of a supportive learning environment to strengthen this LO; however, conversations should be held to address ways by which the institution can increase scores across all three building blocks and the 12 scaled scores.

This study is not without shortcomings and limitations; it did not use a random sample, but instead contains individuals who were known to the researcher and who self-selected to complete the survey; however, respondents' answers were anonymous. It is also a single-site study with no existing similar institution benchmark; however, as more institutions complete the survey, benchmarks will evolve to enable relative comparisons. Although the response rate for the survey was approximately 50 percent and was representative, these results were not compared against institutional employment records. The data presented in this study do provide a good indication of respondents' perception of the LO at their institution.

In his call for university-wide organizational reform, Tierney (1999) writes that "all too often, faculty, staff, and administrators in a college or university have no sense of whom they serve or what they do, other than meeting demands that someone else has placed on them" (p. 124). To overcome this, he suggests a top-down communication of the norms, rules and values of the organization as well as engagement in knowledge building "and applying it in culturally-specific ways for the organization" (p. 127). The tool used in this study revealed that, although this academic medical center is an LO, key leaders may still benefit from a dialogue within the institution to discuss ways that it can foster knowledge sharing, collecting information, appreciating differences of opinion, making time for education and training activities, and reducing stress levels. It is a starting place for institutional improvement.

The LO instrument and benchmark scales are not only helpful to assess the extent to which an institution is a learning organization, but also to identify opportunities

for improvement and to allow leaders to address problems or areas where their institutions lag behind. In the large, private academic medical center in this study, nearly every scale fell below the median benchmark score, thus there are likely areas for improvement in the development and maintenance of the research enterprise of this organization as an LO. Garvin, Edmondson, and Gino (2008) identified four principles organizations can use to foster organizational learning, all of which may be relevant to the research enterprise in an academic medical center:

1. Install "formal learning processes" (p. 116) and cultivate a learning climate, which goes beyond the academic medical center's leadership modeling the learning behaviors.
2. A "one-size-fits-all strategy for building a learning organization is unlikely to be successful" (p. 116).
3. The value of the scores is in their comparisons to other similar institutions or the benchmark scores. On their own, they are just scores.
4. There are many paths to becoming an LO and maintaining the learning community, and not every organization is the same. Institutions should "be thoughtful when selecting the levers of change and should think broadly about the available options" (p.116).

The results of this exploratory study may be helpful in examining the perceptions of research administrators on the academic medical center as LO. This study and others like it will likely become more helpful as additional institutions complete the survey and begin to compare results. The core recommendation is to continue research on academic medical centers as LOs by first collecting more data from public and private academic medical centers, and then to look to non-academic medical centers, and non-medical academic research centers to see what distinctions can be made and what can be learned about these organizations as additional comparisons and contrasts are made.

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