

How Well Do Programs Fulfill Their Role in Management Development? An Analysis of
Competency Assessments Using CAHME Accreditation Outcomes.

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Abstract

We use Transaction Cost Economics and Agency Theory as theoretical frameworks to characterize the changing relationship between graduate programs in healthcare management and their industry stakeholders within the health industry. With competency-based education (CBE), the relationship has evolved from a transactional relationship to an implied contractual relationship. Within this new contractual framework, we analyze how well graduate programs in healthcare management education measure and assess competencies for the future health executive workforce. Using Commission on Accreditation of Healthcare Management Education (CAHME) accreditation data covering 96 site visits from 2007-2015, we find that the academic community still has much work to do in fulfilling its implicit contract with industry stakeholders. Over 70% of all healthcare management programs had adverse criterion-related findings on their ability to assess the attainment of competencies in their students and graduates. Major problems identified were a) not measuring competency attainment within courses, b) not measuring competency attainment across courses, c) a significant reliance on student self-assessments and d) failure to use assessment data for overall program improvement.

INTRODUCTION

The health industry and institutions of higher education in North America have a long-standing relationship regarding the management development of the future leaders within the health industry. Higher education fulfills the traditional role of providing a formal education that prepares graduates to assume a wide variety of management roles within the health industry. Meanwhile, for-profit, not-for-profit, and governmental organizations within the health industry build upon that formal education by selecting employees with relevant management capabilities, and then tailoring and expanding those management capabilities to meet their organizations' specific needs (often with additional assistance from academic institutions).

Beginning with the 1934 creation of the first healthcare management graduate program in North America (Haddock, McLean, & Chapman, 2002), and continuing until 2007, formal healthcare management education occurred primarily in colleges and universities. Those programs focused on attaining foundational management knowledge and the building of managerial skills. In recent years, the nature of this relationship evolved due to the implementation of competency-based education (CBE). The Commission on Accreditation of Healthcare Management Education (CAHME) mandated CBE for all accredited programs beginning in 2008. CAHME is a specialized accrediting organization that serves the public by promoting, evaluating, and improving the quality of graduate healthcare management education in the United States and Canada. CAHME, which is recognized by the Council on Higher Education Accreditation, is the only organization that grants accreditation to academic programs offering a professional master's degree in healthcare management education (CAHME, 2016).

CBE moved graduate programs away from teaching students about the management knowledge and skills they would need in the workforce, and towards what they need to be able to

accomplish with that management knowledge and those skills. Tom Royer, MD, the former President and CEO of CHRISTUS Health (a not-for-profit health system in the United States), provided a great analogy when he said, “Anatomy and Physiology is a class, but performing a surgery is a competency.” Having knowledge of anatomy and physiology is necessary, but is not sufficient, to be a competent surgeon. To extend his analogy further, anatomy and physiology represents knowledge. Making incisions, extracting a tissue mass and closing an incision with sutures are all skills. However, putting them all together in a complex surgical case, and achieving a positive surgical outcome, is demonstration of a competency. CBE takes the same approach in management education where academic institutions develop instructional methodology to take students beyond learning knowledge and acquiring skills. CBE builds further upon the knowledge and skills through application in complex scenarios as a means of acquiring and demonstrating competencies.

This paper addresses the evolving nature of this industry-academia relationship, with a specific emphasis on management development within the health industry. We focus our analysis on

how effectively the ability of graduate program measures to measure student attainment of the how effectively they assess student attainment of relevant management competencies required in the future health industry leaders within the health industry. As a proxy for effective program measurement of competencies, we use program adherence to the CAHME accreditation criterion on competency assessments. Using this proxy, we analyze how well academia has implemented CBE, thereby fulfilling its role in the evolving industry-academia relationship.

The remainder of the paper is structured as follows. In Section One, we present the theoretical frameworks that motivate our study and provide a brief literature review of CBE in healthcare management education. Section Two provides details on our data and methodology. Section

Three presents our findings that assess how well CAHME-accredited programs assess competency attainment. Section Four provides perspectives to assist programs with avoiding similar problems on future accreditation site visits. Section Five provides a brief discussion and conclusion.

THEORETICAL FRAMEWORK AND LITERATURE REVIEW

Theoretical Framework

Until the implementation of CBE in 2007, the most appropriate theoretical framework to view the industry-academia relationship regarding management development in the health industry was transaction cost economics (TCE). This framework is a lens through which scholars could define the boundaries of the firm (Coase, 1937; Williamson, 1989). The firm is viewed as a nexus of transactions, where organizations internalize those transactions where they have a cost advantage, and they externalize those transactions where they do not have a cost advantage. Internalization means the organization creates the good or service inside of the organization, whereas externalization means the organization purchases the good or service in the marketplace.

When viewing management development as a service, organizations within the health industry could either internalize the management development of their own workforce (by creating their own development programs), or they could purchase that management development on the open marketplace. If fully internalized, the health organization must believe that they can either develop the competencies of their personnel most effectively, at a cost advantage, or an optimal combination of the two. Examples of in-house management development program were the

Mayo Clinic (Tangalos, Blomberg, Hicks & Bender, 1998), the Cleveland Clinic Foundation (Stoller, Berkowitz, & Bailin, 2006) and Maimonides Medical Center (Feldman, 2008).

Conversely, the transaction could be direct, where health organizations pay a specific academic institution directly to develop the management skills of their employees. An example would be the relationship between BJC HealthCare and Webster University (both in the St. Louis metropolitan area), or between Holy Cross Hospital and Marymount University (both in the Washington, DC metropolitan area). The transaction could also be indirect, where the health organization hires employees who have already completed their graduate education (to include incurring the cost of that education) and have attained a desired set of competencies. When the health organizations compensate that employee at a level appropriate to attract their talents, the employee is essentially reimbursed over time for the costs of their education through their compensation.

A number of hybrid forms also exist where health organizations work together. In these cases, health organizations and academic institutes both contribute resources to reach an optimal cost-benefit tradeoff for each. Specific examples of these hybrid relationships include the Army-Baylor University Graduate Program in Health Administration and the Mercy Health System-Saint Louis University Leadership Certificate Program. In the case of the Army-Baylor partnership, the U.S. Department of Defense provides faculty, students, and facility infrastructure to develop the management skills of the professional military officers and government employees (who will manage the Military Health System). Baylor University provides the institutional oversight of the Program leadership, faculty and student participants, approves all curriculum, tracks student progress towards completing the degree requirements, and confers the academic degrees. In the case of the Mercy-Saint Louis Program, executives from Mercy partner

with faculty from Saint Louis University to co-teach management content to future executives pulled from within the Mercy Health System.

CBE brings a new perspective to the industry-academia relationship. A more appropriate framework, although not a mutually exclusive framework, is agency theory (Jensen and Meckling, 1976). In agency theory, the firm is viewed as a nexus of contracts. While the firm may have a formal organizational structure that defines its boundaries, the contracting mechanism moves external relationships into the notional boundaries of the firm. Thus, when a health organization's suppliers have a contract with the formal organization, the contracting mechanism brings the suppliers into the broader informal structure of the organization (i.e. into the nexus). Moreover, sometimes that contract can be explicit through a formal contract, or it can be implicit through an informal contract that is built on cooperation and mutual benefit.

CBE, as outlined in the CAHME accreditation standards, creates an informal contract between healthcare management graduate programs and their partners within the health industry. The academic programs are required to periodically scan their external environment (market analysis), engage with health industry partners, seek their input on the types of competencies that industry needs (an "educational needs assessment"), and use that input to develop a competency model that meets industry needs (for a graduate to be an effective manager within the health industry). The program is then responsible for developing a curriculum that builds, assesses and verifies that students have attained that set of competencies upon graduation. If the program meets its industry partners' needs, the graduates should be quickly hired and begin a successful career in healthcare management, and the industry partners would hire graduates who have the relevant competencies necessary for success in today's complex health industry.

Our paper contributes to the literature by providing the first measurement of how well, in aggregate, graduate programs in North America assess competency attainment among their students, thus fulfilling their part of an implied contract with their health industry partners. It should be noted that from an empirical perspective, our study looks at how well programs are attempting to assess competency attainment. We do not evaluate whether their assessments are reliable, and we do not evaluate whether their assessments are valid. Those determinations (reliability and validity) must come through future research efforts. From an operations management “quality control” perspective, we evaluate whether or not they have a complete process. We do not evaluate whether their process is reliable or valid.

Literature Review

Previous research on CBE within the healthcare management domain focused initially on understanding and justifying the move to CBE (Chyung, Stepich, & Cox, 2006; Calhoun, Vincent, Calhoun, & Branson, 2008). Subsequently, the research moved towards developing competency models (Clement, Hall, O’Connor, Qu, Stefl, & White, 2010; Holmboe, Sherbino, Long, Swing, & Frank, 2010), as well as implementing and assessing competency attainment (e.g. Beauvais et al, 2011; Perlin, 2011; Hawkins & Holmboe, 2008; Friedman & Frogner, 2010). More recently, competency-based research focused on developing specific types of competencies (Isouard, Martins, & Leonard, 2015; Broom & Turner, 2015; Carlton, Powell, Edwards, Dismuke, & Levy, 2015) or developing competencies for specific populations of health managers, such as physicians (Broom, Counte, & Turner, 2016).

However, no research has addressed, in aggregate, how well the overall population of graduate healthcare management programs in North America assesses competency attainment. To date, the most comprehensive review occurred within a study of the current state of CAHME

accreditation, showing which criteria caused healthcare management programs the most trouble in the accreditation process (Broom, Wood, & Sampson, 2013). While the study demonstrated that competency assessments were a problem across the population, the study did not identify the specific types of problems programs were having. We use a unique database of accreditation outcomes to fill this void in the literature. Using more detailed accreditation findings, we discover that many programs simply fail to establish adequate plans to assess competency attainment. We show where those assessment plans have gaps, and provide insight on how to avoid the issues. Additionally, we find that some programs fail to use information on competency assessments for continued program improvement.

DATA AND METHODOLOGY

Our dataset consists of accreditation findings on competency assessments provided by the Commission on Accreditation of Healthcare Management Education (CAHME). The findings were drawn from all accreditation site visits conducted by CAHME from the Fall of 2008 through the spring of 2015 (note: our sample does include one test site visit in the 2007-2008 academic year when the competency-based criteria were being tested). In total, the data were drawn from all 96 site visits over this period. The findings were pulled from legacy hardcopy files and electronic files obtained in the e-accreditation system.

We focused specifically on criterion-related findings under Criterion II.A.3 (for the 2008-2012 standards) and Criterion III.C.3 (for the 2013-2015 standards). CAHME adjusted the accreditation criteria starting in 2013, but the new criteria did not alter the wording of the criterion addressing competency assessments. The criterion remained the same, but was given a

new number. These two criteria (II.A.3 and III.C.3) specifically state “The Program will regularly evaluate the extent to which students and graduates attain the competencies and use the evaluation for continuous improvement.”

During the site visit, the CAHME site visit teams review how the Program plans to assess competency attainment, reviews all documentation at both the course and program levels, and discusses the competency assessment process with faculty, students, and alumni. From this discovery process, the site visit team determines whether or not the Program has fulfilled the requirements of this criterion. To reach a conclusion, the site visit teams look for evidence to answer four questions:

- a. Does the Program measure student progress towards mastery of the competencies at the **course** level?
- b. Does the Program measure student progress towards mastery of the competencies at the **program** level?
- c. Are there efforts for **direct and indirect** measurements for competency attainment?
- d. Is there evidence of use of the results for **Program improvement**?

The site visit team has multiple options when determining their ultimate criterion-related finding. The criterion-related finding could be deemed as Met, Partially Met, or Not Met. Additionally, if a criterion were found to have been Met, the site visit team could identify a Strength (if the competency assessments were particularly robust) or provide a Consultative Recommendation (if the competency assessments were minimally adequate under the criterion standards, but showed room for improvement). In the cases of a Strength, Partially Met, Not Met, or Consultative

Recommendation, a narrative accompanied the finding that elaborated on the reasons justifying the finding.

We carefully reviewed the narrative discussions to identify the types of problems the diverse group of healthcare management graduate programs had with adequately assessing student and graduate competency attainment. From these findings, we conducted a descriptive analysis of the aggregate criterion-related findings to help identify where programs fall short in their implied contractual relationship with the health industry.

FINDINGS

Over the sample period, CAHME conducted a total of 96 site visits for graduate programs in the United States and Canada. In the 2007-2008 academic year, the first site visit occurred using new accreditation standards assessing CBE. In the 2008-2009 academic year, the new accreditation standards were fully implemented across North America. Once fully implemented, an average of 14 programs per year had site visits. Table One provides an overall summary and a year-by-year breakdown of the site visits, as well as the criterion-related findings.

<Insert Table 1 Here>

As Table 1 shows, the vast majority of programs had significant problems with measuring competency attainment. Over the full sample period, over 70% of the programs received a partially met or a not met finding for measuring competency attainment. That percent increases to over 75% if you include the consultative recommendations, which normally signal a program having problems that may result in future criterion-related findings if left unaddressed by

program leadership. Moreover, only three (3) programs were deemed as having strengths with their competency assessment processes.

Figure 1 and Figure 2 present the same results in graphical form. The most obvious finding when viewed graphically is that programs do not appear to be improving over time. Even in more recent years, a significant percentage of healthcare management programs still have problems with measuring competency attainment. Part of this result may be due to the length of accreditation. Depending on when a program went through the accreditation process, the reaccreditation timeframe can be a maximum of 6 or 7 years (depending on the year they went through accreditation, as CAHME extended the maximum length in 2013). Thus, many programs may have only gone through the reaccreditation process one time under CBE during the sample period.

<Insert Figure 1 Here>

However, of the programs that did go through accreditation twice during the sample period, the problems with measuring competency attainment persist. Four programs had two site visits during our sample period. Three of those programs had criterion-related findings on competency assessments during both site visits, therefore showing no improvement. The fourth program actually regressed between site visits, having met the criterion on their first site visit, but having partially met the criterion on their second site visit. Two other programs lost their accreditation after their only site visit during our sample period, and both had criterion-related findings on competency assessments.

<Insert Figure 2 Here>

Moreover, programs have not been effective in learning from each other. The programs that underwent an accreditation site visit later in the sample period exhibited the same difficulties with measuring competencies as those programs that went through early in the sample period. The results indicate that opportunities to share best practices and foster collaboration among programs, in order to further the field of competency-based healthcare management education, may not be effectively fostering programs learning from each other (at least specifically on measuring competency attainment). In aggregate, these results indicate that much work remains with the full implementation of CBE.

Table 2 provides a breakdown of the major reasons site visit teams identified deficiencies in the competency assessment process, and Figure 3 provides a graphical representation of the same data. The reasons were broken down into 6 major categories. Programs did not a) assess competencies at the course level, b) assess competencies at the program level, c) record competency attainment on a student-by-student basis, d) assess all students and/or all competencies, e) consistently assess competencies in the same manner, or f) demonstrate evidence of using the results of the competency assessments for programmatic improvement.

<Insert Table 2 Here>

It should be noted that these categories are not mutually exclusive. If a program had not conducted any competency assessments, they would not have course-level, program-level, or student-specific assessments. The only programs identified for not using feedback for continuous quality improvement were those who had adequate assessments, but had not used that information to initiate any efforts to improve the program (to include course-level improvement).

Programs are required to assess competency attainment at the course level. Each faculty member should assess how well their course helps build competencies in every student, with a focus specifically on the subset of competencies that their courses help build. Likewise, program directors should assess competencies at the program level, thereby ensuring that all students are assessed on the full model, rather than simply relying on the courses to collectively cover the full model. Moreover, every student deserves to know how he or she stands on attaining all of the competencies, thereby necessitating student-by-student assessment (both on subsets of the competencies within courses and across the full competency model at the program level).

The biggest problems with assessing competency attainment were a) reliance solely on course-level assessments or b) relying solely on program-level assessments. In 16 programs, no competencies were assessed at all (so those programs fell into both categories). In 3 of those 16 cases, the programs had a plan to assess competencies, but had not executed the plan. In the other 13 cases, programs did not even have an assessment plan.

The category for incomplete assessments includes programs that did not assess all of the competencies in their models, or relied solely on student self-assessments of their own level of competency attainment. Inconsistent assessments included programs that assess competency attainment for some (but not all) students or they assess competency attainment in some (but not all) classes. Additionally, some programs had difficulty with establishing different definitions for the same levels of competency attainment. In these cases, the programs thought they were measuring the same competencies consistently across classes, but the faculty members had developed their own definitions that were not consistent with each other and was not consistent with the programs' definitions.

<Insert Figure 3 Here>

PERSPECTIVES FOR PROGRAM IMPROVEMENT

Programs can avoid these problems with meeting CAHME accreditation standards by putting into place a robust set of competency assessments, and then using the results of these assessments for program improvement. Three key perspectives are necessary to ensure an adequate assessment of student attainment of competencies: the Program Director, the faculty member, and the student. By addressing each of these perspectives, and then using the results for initiatives to improve the program and maintain a relevant competency model, programs will ensure their success on Criterion III.C.3 (“The Program will regularly evaluate the extent to which students and graduates attain the competencies and use the evaluation for continuous improvement.”).

For Program Directors, the timing of the assessments is the first consideration in implementing a robust process to adequately assess the full competency model. At a minimum, all students should be assessed on the full model at both the beginning and end of the program. This approach allows the program to precisely quantify how it adds value to each student’s competency development. Programs should also measure the full competency model at other points throughout the program as a means to identify where competency development problems may exist. Without checkpoints, programs only know that a problem exists somewhere within the program, but would not have the ability to isolate where the problem exists (e.g. first-year courses, second-year courses, integrative experience, capstone course, etc.).

Another consideration is the evaluator. Most programs rely on faculty members for competency assessments, but programs can utilize many other groups as potential evaluators. Two useful

frameworks for identifying evaluators are an internal/external approach and a 360-degree approach. The evaluators can be internal, such as students and faculty, but they can also be external to the program, such as alumni and/or practitioners who serve as preceptors, members of comprehensive exam boards, judges for capstone projects, etc. Use of external evaluators adds value by providing external validity to the program's own internal assessments of competency attainment.

Regarding the 360-degree approach, our results show that many programs rely on student self-assessments and faculty assessments. Likewise, programs should consider having students conduct peer competency assessments. When the competencies are properly explained to students, and are tied to course-level group projects, peer assessments may be more useful than self-assessments. For peer assessments to be most useful, faculty will need to put into place methodologies that eliminate or reduce potential student bias. Sources of bias may include a lack of anonymity, a perception that the peer assessment will impact peer grades, or students being unfamiliar with the competency model (or levels of competency attainment).

Another consideration is the unit of analysis of the assessment. Programs routinely assess competency attainment for individual students. While measuring individual students is necessary for accreditation purposes, programs may also find utility in supplementing individual student assessments through conducting student group assessments. In this case, groups of students are measured collectively (i.e. is the group competent?), rather than measuring each student individually. Since programs routinely develop group and team-related competencies, programs should consider measuring the competency of the group (as a proxy for individual effectiveness, especially on those group/team-related competencies). Likewise, programs routinely assess competency attainment on individual competencies. Programs should also

consider assessing groups/clusters of competencies. One example would be measuring a related collection of competencies at the domain level.

In order to assess competency attainment at the program level, programs should consider using a combination of approaches, without relying solely on one approach. Each type of competency assessment provides different information to program directors. Collectively, all of these assessments across the curriculum enable the program director to fully evaluate the level of competency attainment across the student cohort. Figure 4 illustrates this focus. The entire competency model (in this illustration, 26 competencies) is shown across the top. The entire student population is shown down the left (in this illustration, 40 students). The program director focuses on competency attainment across the cohort over the entire competency model (denoted by the cells in orange). Moreover, program directors should use the results of these competency assessments to continually improve the overall curriculum and to maintain the relevancy of the competency model.

<Insert Figure 4 Here>

Faculty members should assess competency attainment within their courses. Answering three guiding questions will help ensure that courses fully support the program's larger competency model. First, does your course adequately assess those competencies that map to your course? Failure to measure competency attainment within all required courses will place a program at risk during accreditation. Second, at the end of your course, does each student understand how your course helped to build his or her competencies? The course syllabus partially accomplishes this goal by outlining how competencies will be built within the course (such as linking the competencies to the course objectives, the class sessions, and the assessment methodologies). While not explicitly required under CAHME Criterion III.C.3, faculty should also work to ensure

that each student receives adequate feedback on their competency attainment after completing your course(s). If the information is collected and provided to the Program Director, faculty should be able to easily provide that same information to students. Third, how have you used the results of your competency assessments to improve your course for future students? Faculty members should use quality improvement techniques to continually improve their courses, just like how program directors should use quality improvement techniques to continually improve the overall curriculum. Figure 4 denotes where faculty members should focus, the green cells, which indicate student attainment of those competencies specifically mapped to their courses. Finally, program directors should keep the student's perspective in mind when designing and implementing competency assessments throughout the curriculum. Students should not view the competency model as an abstract idea, but they should understand how the model is the cornerstone for their entire graduate experience. Programs should initially familiarize students with the competency model, to include understanding the levels of competency attainment and how their full set of competencies will be built throughout the curriculum. This familiarization should include how competencies link to coursework, field-based experiences, capstone events and/or comprehensive exams. Students should receive an initial assessment that shows their starting points on each competency, and then also receive periodic assessments as they progress through the curriculum, culminating with an exit assessment. Assessment feedback should be timely, thereby giving students real-time information on their competency attainment as they progress through the program. Ultimately, the students are concerned with their own competency development, indicated by the yellow cells in Figure 4.

DISCUSSION AND CONCLUSION

Our findings indicate that many CAHME-accredited programs still have much work to do in fully implementing competency-based education. In aggregate, we find a data quality problem. Academia has poor data on competency attainment because the vast majority of programs do not completely measure attainment of their competencies. After establishing a process to fully measure competency attainment, a program can then use that information to refine those measurements into more reliable and valid proxy measures for competencies (which can then be utilized for program improvement).

Our findings are consistent with previous research indicating that the field has embraced competency-based education, developed a number of validated competency models, and clearly connected those competency models to their curricula. However, most CAHME-accredited programs have not yet developed a comprehensive method to efficiently and effectively measure competency attainment at the course level or the program level, to include giving feedback to students and graduates on their individual levels of competency attainment. The community of CAHME-accredited programs should a) continue to look for innovative ways to fully assess competencies, b) identify the best practices in competency attainment, and c) find opportunities to share these innovations and best practices in a collaborative manner to fully embrace competency-based education.

Our study does have some limitations. First, we acknowledge that many healthcare management programs do not do not adhere to use a competency-based approach to education because they. Many programs choose not to pursue CAHME accreditation, which requires CBE. Our study does not include these programs within our sample. As a result, many graduates do not come from a program using CBE, and our analysis excludes those programs. Therefore, our sample is only representative of the CAHME-accredited programs, and is not generalizable across all

graduate programs. However, the U.S. News and World Report ~~formal~~ rankings of graduate programs in healthcare management education (~~through the U.S. News and World Report~~) require CAHME accreditation ~~in order to be considered for ranking.~~ ~~Therefore, t~~The graduates from all of the top programs ~~aeross-in~~ North America do experience CBE during their graduate education, and our sample would be representative of this subgroup of graduate programs.

Moreover, while some executives within the health industry may not come from CAHME-accredited programs, accreditation is a more important factor than institutional reputation for those executives (Broom & Hilsenrath, 2015). As CBE becomes mainstream (for instance, the Council on Education in Public Health now requires CBE in all programs within accredited schools of public health), future researchers will be able to expand this line of research into the larger population of graduate programs in healthcare management education.

The scope of our analysis is another limitation of our study. We focus on whether or not programs established a sufficient process to measure competency attainment. We do not assess whether these measures of competency attainment are actually reliable or valid. Future

researchers should focus their efforts on evaluating the reliability and validity of the competency assessment processes used across the field of healthcare management education. Participants in the field of healthcare management education should not be complacent with simply measuring competencies with any tool they can devise. Those tools must be assessed to ensure that they are effectively and precisely measuring the types of competencies that meet the health industry's needs, thereby ensuring that programs are fulfilling their contract with their health industry stakeholders.

Another interesting line of future CBE research would focus on individual, organizational, or population outcomes. For the individual, does a competency-based education result in improved

management practice and success within their career? For the organization, does a competency-based education result in improved organizational performance from cost, quality of care, and/or access to care perspectives? For the population, do organizations led by executives who were developed through a competency-based education experience improved population-based health outcomes? These research questions will extend the impact of CBE beyond the learning environment and into the realms of individual, organizational and population health improvement.

While we use the agency theory framework to characterize the modern relationship between institutions of higher education and the health industry, we acknowledge that agency conflicts exist. These conflicts may serve as potential areas of future research. For instance, many programs exist in institutions where pressure to procure external funding may outweigh the need to meet industry stakeholder needs through its teaching mission. Likewise, faculty research interests may diverge from industry stakeholder needs through their incentives for promotion and tenure. These conflicts may impact the ability to attract and retain the type of permanent faculty, in core management areas, who may be best suited to develop the competencies necessary for success the healthcare setting.

Other frameworks may also merit attention. In particular, contingency theory and a resource dependency perspective also provide useful lenses for possibly examining the relationship. Future research should use these frameworks to examine the relationship between academia and the health industry. Researchers should also explore and/or develop other theoretical frameworks as means to examine the relationships between the health industry and institutions of higher education.

Finally, from a CAHME accreditation perspective, the CAHME Standards Council should consider a number of important and potentially difficult issues for possible inclusion in the accreditation standards. Should students judged at a level below the program's targeted competency level be permitted to graduate? Currently, CAHME does not require students to meet or exceed the targeted competency levels in order to graduate. Alternatively, does some threshold exist where a program allows a student to fall below the targeted levels (for instance, on no more than 10% of the competencies), but still allows the student to graduate and enter the profession? Perhaps as competency-based education becomes more common across academia, universities will shift to competency attainment as the primary means of evaluating student success, rather than using a letter grade process. Some CAHME-accredited programs have already begun to move in this direction by having their courses grades determined, at least partly, through competency assessments.

REFERENCES

- Beauvais, B., Wood, S. J., Brezinski, P., Brooks, M., Kim, F., & Mangelsdorff, A. D. (2011). Adoption and Implementation of Competency Based Education: The Army-Baylor Approach. *Journal of Health Administration Education*, 28(4), 299-313.
- Broom, K., Counte, M., Turner, J., (2016) "Research on Physician Management Education: A Focused Review and an Agenda for the Future." Forthcoming at the *International Journal of Health Research and Innovation*.
- Broom, K., & Hilsenrath, P. (2015). "ACHE Member Survey: Perspectives on Graduate Health Management Education. *Journal of Health Administration Education*, 32(3), 341-358.
- Broom, K., Turner, J. (2015) "A Competency-Based Approach to Functional Area Expertise: Extending Competency-Based Education to a Healthcare Finance Area of Concentration." *Journal of Health Administration Education*, 32(1), p. 25-46.
- Broom, K. D., Wood, S. J., & Sampson, C. J. (2013). Current Trends in Graduate-Level Healthcare Management Education: An Examination of Accreditation Outcomes. *Journal of Health Administration Education*, 30(3), 159-179.
- Calhoun, J.G., Vincent, E.T, Calhoun, G.L., & Branson, L.E. (2008). Why competencies in health management and policy education? *Journal of Health Administration Education*, 25(1), 17-35.
- Carlton, E. L., Powell, M. P., Dismuke, S. E., & Levy, M. C. (2015). Our Future's Brightest: Developing Interprofessional Competencies Through an Interdisciplinary Graduate Student Case Competition. *Journal of Health Administration Education*, 32(1), 47-57.
- Chyung, S. Y., Stepich, D., & Cox, D. (2006). Building a competency-based curriculum architecture to educate 21st-century business practitioners. *The Journal of Education for Business*, 81(6), 307-314.
- Clement, D.G., Hall, R.S., O'Connor, S.J., Qu, H., Stefl, M.E., & White, A.W. (2010). Competency development and validation: A collaborative approach among four graduate programs. *Journal of Health Administration Education*, 27(3), 151-173.
- Coase, R. H. (1937). The nature of the firm. *Economica*, 4(16), 386-405.
- Commission on Accreditation of Healthcare Management Education (2016), Retrieved January 12, 2016, from <http://cahme.org/>
- Feldman, D. L. (2008). Realizing the value of in-house physician leadership development. *Physician Executive*, 34(5), 40.

- Friedman, L.H., & Frogner, B.K. (2010). Are our graduates being provided with the right competencies? Findings from an early careerist skill survey. *Journal of Health Administration Education*, 27(1), 75-98.
- Haddock, C. C., McLean, R. A., & Chapman, R. C. (2002). "Careers in healthcare management: how to find your path and follow it." Health Administration Press.
- Hawkins, R.E., & Holmboe, E.S. (2008). Constructing an evaluation system for an educational program. In: Holmboe ES, Hawkins RE, editors. "Practical Guide to the Evaluation of Clinical Competence." Philadelphia, PA: Mosby/Elsevier. pp 216–238.
- Holmboe, E. S., Sherbino, J., Long, D. M., Swing, S. R., & Frank, J. R. (2010). The role of assessment in competency-based medical education. *Medical Teacher*, 32(8), 676-682.
- Isouard, G., Martins, J. M., & Friedman, L. H. (2015). Competency in innovation, creative and innovative thinking: challenges within the Health Management course curriculum. *Journal of Health Administration Education*, 32(3), 257-269.
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305-360.
- Perlin, M. S. (2011). Curriculum Mapping for Program Evaluation and CAHME Accreditation. *Journal of Health Administration Education*, 28(1), 33-53.
- Stoller, J. K., Berkowitz, E., & Bailin, P. L. (2006). Physician management and leadership education at the Cleveland Clinic Foundation: program impact and experience over 14 years. *The Journal of Medical Practice Management: MPM*, 22(4), 237-242.
- Tangalos, E. G., Blomberg, R. A., Hicks, S. S., & Bender, C. E. (1998, March). Mayo leadership programs for physicians. *Mayo Clinic Proceedings* (Vol. 73, No. 3, pp. 279-284). Elsevier.
- Williamson, Oliver E. (1989), "Transaction cost economics." *Handbook of industrial organization* 1, no. 135-182.