THE WICKED PROBLEM OF ASSESSMENT

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ABSTRACT: Wicked problems are those problems that do not lend themselves to solution through the application of scientific or linear problem solving approaches. This paper introduces the concept of wicked problems as another approach to understanding the challenges faced in the implementation of assurance of learning processes. A leadership approach to assurance of learning is proposed.

THE PROBLEM OF ASSESSMENT

It would surely not be an understatement to suggest that assessment has not been fully embraced by the professoriate across the university campus. At least some faculty have been open in their assessment of assessment. One professor of fine arts describes current assessment practices as grotesque, unintentional parodies of both social science and accountability; scams run by bloodless bureaucrats who do not understand the holistic nature of a good college education (Fendrich, 2007). Bernard Fryshman (2007), NYIT physics professor, suggests that many are opposed to the imposed measurement of student learning because it risks leading universities to distort the teaching/learning process in order to excel in those areas that are easily measured.

At the most basic level, the assessment process is simply the use of information for institutional improvement (Astin, 1990). In the university this process has the goal of demonstrating that students are achieving learning goals specified for their program of study. Assessment arrived at most universities in the early 1990s as a range of stakeholders began to question the quality of students who graduated from these universities. These stakeholders included parents reacting to the incessant increases in the cost of a university education, employers who were less than satisfied with the skills and knowledge of recent graduates and legislators responding to the questions raised by parents and employers.

Upon arrival at the university, assessment was to a large extent viewed with disdain. Minimal assessment programs were implemented, often using direct measures such as standardized exams or indirect measures such as satisfaction surveys, which were sufficient to satisfy the state-mandated reporting requirements. Colleges of business were initially slow to embrace assurance of learning. There are a variety of reasons why assurance of learning received such a cool welcome. It was seen by many faculty as a passing fad which if ignored

would go away. Some faculty viewed assessment as an artificial and intrusive requirement that intruded on their freedom to teach their subject matter as they wish (Fendrich, 2007). Other faculty feared that it was a stealth faculty evaluation tool and that the data collected as part of a process that would be used against them in the promotion and tenure process.

Assessment, now more commonly referred to as Assurance of Learning (AOL), became elevated in colleges of business in 2003 when the accreditation standards of AACSB were revised to include AOL as an accreditation standard (Martell, 2007) and are reflected in current accreditation criteria (AACSB, 2010). Similar updates by other business accrediting bodies such as ACBSP followed in short order (ACBSP, 2009). The terms assessment and assurance of learning (AOL) are used interchangeably in this discussion. Increasing emphasis on assurance of learning across the university is also being seen in the regional accrediting bodies. Weinstein (2006) asserts that "assessment is here to stay" and stresses the importance of gaining faculty buy in to the process. It is widely acknowledged that failing to demonstrate an effective AOL program is one of the more serious issues faced in both gaining initial accreditation and achieving maintenance of accreditation. Why then, in the face of these realities, did Pringle and Michel (2007) find in a study of AACSB schools that most schools did not have AOL programs in place adequate to meet standards? Why do colleges of business find it so difficult to design and maintain good AOL programs?

TACKLING THE WRONG PROBLEM

The difficulty some colleges of business have faced in implementing an effective AOL plan seems somewhat surprising since the importance of setting quality standards, measuring against these standards and taking action to improve business process is taught across the business curriculum. We might expect that assurance of learning would find a greater success in colleges of business. After all, the roots of assessment and AOL can be traced directly to the quality work in industry most notably by Deming (1982) as well as a number of others in the field and it fits with what is taught across the business curriculum. Operations management professors focus in part on quality management and process planning and improvement. Marketers discuss the importance of delivering quality products and services to provide high levels of customer satisfaction. Accounting students learn the importance of auditing as a tool to ensure performance is reported accurately. In strategy classes, students are taught to set measurable goals and objectives and to collect and analyze data to determine progress toward achieving these goals and objectives. Each of these requires assessing business performance and acting to make improvements.

This linear approach to problem solving is one that faculty in colleges of business are quite comfortable with and is often referred to as the "waterfall" approach to problem solving (Figure 1). There is a presumption that the problem is known and well defined before starting the problem solving process. The initial step is to *Gather Data*. This may require collection of either quantitative

or qualitative data. Data might consist of measurements, surveys or a review of how similar problems have been addressed in the past or by others faced with the same problem. Next is to *Analyze the Data.* Analysis may be accomplished by statistical means, extensive discussions or other methodologies. Following the analysis stage it is appropriate to *Formulate a Solution*. Once the solution has been identified all that is necessary is to *Implement the Solution*.

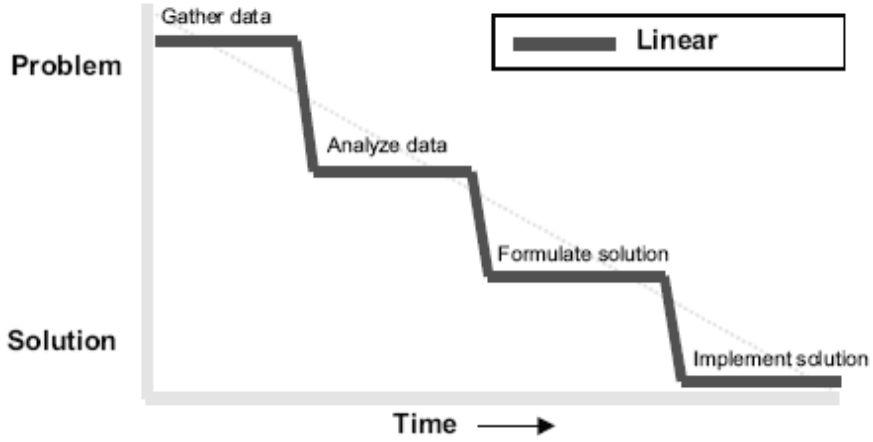

Figure 1: Waterfall Problem Solving Approach
(Conklin 2006)

This "natural" approach to problem solving is the model that most college of business assessment committees adopt as they begin the process of preparing and implementing their Assurance of Learning program. This is essentially the approach that is presented in most assessment seminars. A recent article (Gardiner, Corbitt and Stevens 2010) describes a "practical how-to model" for program assessment. This article provides the assessment model in Figure 2.

In this type of problem the problem is known with a high degree of certainty. Data is available to be collected and analyzed. Given enough data and thorough analysis there is an optimal solution that can be identified and implemented. This approach to problem solving works quite well for the manufacturing arena from which it is drawn. This type, or family, of problems may be difficult and challenging (think Apollo 13, the recent oil spill in the Gulf of Mexico or the mine rescue in Chile) but they do have an optimal solution and as such can be considered relatively "tame" (Rittel and Webber, 1973) problems. As we shall see in the following discussion, assessment may belong to another family of problems altogether. Assessment may well present a "wicked" problem.

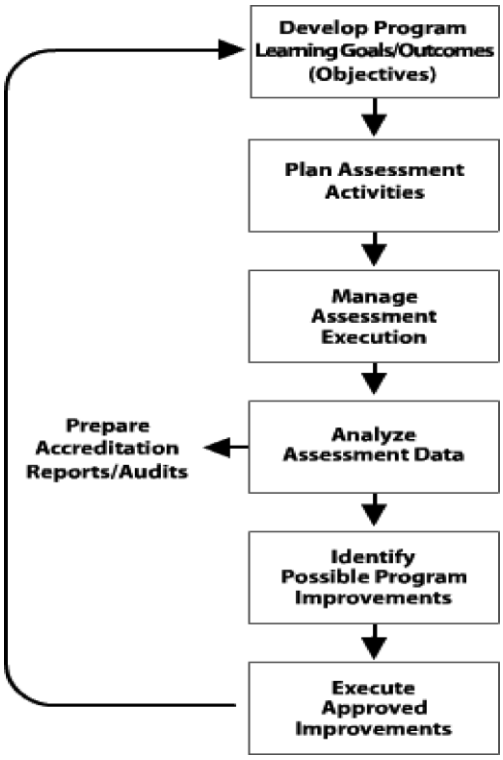

Figure 2. Program Assessment Model
(Gardiner, Corbitt & Stevens 2010)

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WICKED PROBLEMS AND ASSESSMENT

The term "wicked problem" was coined by Horst Rittel and Melvin Webber (1973) to describe problems related to social and urban planning that do not lend themselves to solution using the scientific or linear model described previously. They describe "tame" problems as those that can be clearly defined.

The objective in addressing tame problems is to find *the solution*. It is clear when the problem has been solved at which time no further work is required. (The space capsule is returned safely to Earth. The oil well no longer spews oil into the Gulf of Mexico. The Chilean miners were rescued.) Wicked problems on the other hand possess few, if any, of these characteristics. Their choice of the term wicked does not imply any moral or ethical dimensionality. Rather it is used to indicate the refusal of these problems to lend themselves to straightforward solution processes. Rittel and Webber (1973) identify at least ten properties that may be used to identify potentially wicked problems. Some problems may not exhibit all these characteristics yet still be wicked in nature; however, the more of these properties your problem has, the more likely it is to be wicked.

Jeff Conklin, founder of CogNexus Institute has extended the discussion of wicked problems and suggests their difficulty is compounded further by the impact of social complexity. This interaction of wickedness and social complexity leads to fragmentation of the problem solving process. He describes fragmentation as, "…a condition in which the people involved see themselves as more separate than united, and in which information and knowledge are chaotic and scattered." (Conklin 2006). He further suggests (Christensen 2009, Conklin 2006) that the ten properties of wicked problems proposed by Rittel and Webber (1973) can be reduced to six essential ones (Figure 3.) In the following discussion of assessment as a wicked problem in terms of wickedness and social complexity we retain the original Rittel/Webber structure with acknowledgement to Conklin's reduction as well.

Ten Properties of Wicked Problems as identified by Rittel and Webber	**Six Essential Characteristics of Wicked problems as identified by Conklin**
1. There is no definitive formulation of a wicked problem.	1. You don't understand the problem until you have developed a solution
2. Wicked problems have no stopping rule	2. Wicked problems have no stopping rule.
3. Solutions to wicked problems are not true-or-false, but good-or-bad.	3. Solutions to wicked problems are not right or wrong.
4. There is no immediate and no ultimate test of a solution to a wicked problem.	
5. Every solution to a wicked problem is a "one-shot operation"; because there is no opportunity to learn by trial-and-error, every attempt counts significantly.	5. Every solution to a wicked problem is a 'one-shot operation.'
6. Wicked problems do not have an enumerable (or an exhaustively describable) set of potential solutions,	6. Wicked problems have no given alternative solutions.

nor is there a well-described set of permissible operations that may be incorporated into the plan.	
7. Every wicked problem is essentially unique.	4. Every wicked problem is essentially unique and novel.
8. Every wicked problem can be considered to be a symptom of another problem.	
9. The existence of a discrepancy representing a wicked problem can be explained in numerous ways. The choice of explanation determines the nature of the problem's resolution.	
10. The planner has no right to be wrong.	

Figure 3.
Characteristics of Wicked Problems
(Rittel and Webber 1973, Conklin 2006)

1. *There is no definitive formulation of a wicked problem. (Rittel/Webber – R/W)*
   You don't understand the problem until you have developed a solution. (Conklin – C)

Central to our notion of problem solving is that we understand what the problem is we are tasked to solve. This is not the case with wicked problems. How a wicked problem is framed and identified frequently is driven by our understanding of the solution we already have in mind for it. In the arena of social planning for example, how you define the problem of poverty will be driven by how you think it might be addressed – employment, education, better housing. As described by Conklin (Christensen 2009) these problems are ill-structured and feature an evolving set of interlocking issues and constraints. Pacanowsky (1995) notes that the definition and understanding of these problems is often made more difficult by reliance on cross-functional teams which produce too many meetings, too little action and poor solutions.

Virtually no guidance is given to colleges in the accreditation standards (AACSB 2010, ACBSP 2009) regarding AOL beyond the requirement that a plan must be in place and executed. It is left to individual colleges to define their learning goals (read define the problem) and how they will be measured. No organization is more committed to cross-functional teams (committees) than the academy. This additional dimension of social complexity slows the process of defining the goals and measures of the AOL plan even further. Meeting the standard has been challenging enough that AACSB published a white paper

(2007) providing definitions, explanations and examples to assist colleges of business in their AOL efforts. An entire industry of workshops, seminars, conferences and travelling consultants has grown up to help colleges meet their AOL responsibilities. Clearly AOL satisfies this criterion of wickedness.

2. *Wicked Problems have no stopping rule. (R/W, C)*

Tame problems have a solution. Work on the problem stops once the solution is identified and implemented. These problems may require management for the long term but once they are defined and solved they are no longer problems. This is not the case with wicked problems. Frequently work on wicked problems ends for reasons not inherently related to the problem or its solution. The process may end simply because resources such as time, money or interest run out.

Work on AOL never stops. The guidance provided by the corps of AOL experts advises that in the event you become satisfied with performance on one of the identified learning goals (solution) that goal should be dropped and replaced by a new goal (solution). Stopping is exacerbated by the committee structure adopted by most colleges of business to manage the AOL process. Committee members rotate off and are replaced by new members who bring differing viewpoints on exactly what the problem is (see #1 above) and want to reopen the discussion of defining what the learning goals should be and how they should be measured. AOL is a wicked problem that never stops.

3. *Solutions to wicked problems are not true-or-false, but good-or-bad. (R/W)*
   Solutions to wicked problems are not right or wrong. (C)

Tame problems have solutions that can be agreed upon and verified as correct. The most complex problems in mathematics or science may take years of work before they are finally solved. However, once the solution is identified it can be subjected to review and validation by others and ratified as the correct solution. This is not the case with wicked problems. Since the problem definition is dependent on the solution being considered there can be no *right* answer. Solutions to wicked problems are rarely right/wrong or even good/bad. They are more likely to be better/worse, satisfactory or good enough.

Assessment committees are taught in every seminar or workshop that there is no one way to do assessment. Settling for a solution that is good enough is generally unsatisfactory for research trained college faculty. Having been trained to generate and accept or reject hypotheses in search of the right answer, they try to apply this approach to the assessment process. This process is further complicated by the social complexity that exists in a committee of five to nine researchers each of which is trained in a different discipline and research methodology! This interaction helps produce too many meetings, too little action and solutions that do not and cannot lead them to the “right” answer. Irrespective

of what a local assessment committee may determine is good enough; their judgment may be overruled by a visiting accreditation team who declares that the plan that has been put in place after great effort is *not* good enough.

4. *There is no immediate and no ultimate test of a solution to a wicked problem. (R/W)*
   Not included as an essential characteristic by Conklin (2006).

This property is arguably a corollary to or an extension of the previous one and may not be entirely correct. In the case of tame problems it is often possible to know immediately whether or not it is the right solution. After further testing, the correctness of any tame problem solution can ultimately be determined. If we accept that wicked problem solutions are not right/wrong but simply good/bad then immediate evaluation is difficult if not impossible. Ultimately, however, proposed solutions to wicked problems originally believed to be "good" may be determined to be bad.

In the context of assessment, immediate evaluation of a proposed good solution is difficult and there may be no ultimate way of testing whether it is the best solution. On the other hand, a solution thought to be good may ultimately be reevaluated as bad or simply "not good enough." This reevaluation and determination may be the result of continued observation of the problem or the judgment of external evaluators.

5. *Every solution to a wicked problem is a "one-shot operation"; because there is no opportunity to learn by trial-and-error, every attempt counts significantly. (R/W)*
   Every solution to a wicked problem is a "one-shot operation." (C)

Tame problems exist and are solved in the present. They lend themselves to trial and error. If the first proposed solution is wrong (see 4 above) other solutions can be tried sequentially until the right solution is found. Multiple attempts to stem the flow of oil in the Gulf were made in rapid succession until one was successful at which time the problem was declared solved. Wicked problems are observed in the present but solved over time. The proposed solution to a societal problem may begin to be implemented today but a generation's worth of data may be required before a judgment can be made regarding how good the solution really is.

Implementing an assessment plan faces the same issue. Defining the problem and selecting the method by which it will be addressed is in many ways a high stakes decision. This decision is multiplied by the fact that the decision is made five to seven times in the typical assessment plan as learning goals are defined and solutions regarding measurement and improvement are made. As each decision is made and implemented we are faced with the fact that it will be multiple semesters before sufficient data can be gathered to determine whether our solution is good, bad or not quite good enough.

6. *Wicked problems do not have an enumerable (or an exhaustively describable) set of potential solutions, nor is there a well-described set of permissible operations that may be incorporated into the plan. (R/W)*
   Wicked problems have no given alternative solutions. (C)

Classic tame problems fall into one of two (and sometimes both) categories. The first category has a finite and identifiable set of possible solutions. The second category has an established methodology that can be followed which will produce the correct solution. The set of possible solutions may be large or the methodology may be tedious but ultimately the solution can be known. This is not the case with wicked problems. The problem definition may be open to debate (1 above) and given the range of problem definitions possible the range of proposed solutions is virtually unlimited. Rittel and Webber (1973) suggest that solutions can range from the logically inconsistent conclusion of no answer (both A and not-A should happen) to a host of solutions which still does not include all possibilities.

Identifying the problem of assessment and potential solutions is accomplished, generally by committee, independently in every college of business. How the problem is defined in each college can have significant variability leading to a virtually unlimited range of proposals. As a practical matter however, the growing body of AOL literature has forged a certain degree of consensus on the range of learning goals identified and an associated typology of solutions/measures that might be deployed. The goals and measures identified by Anderson-Fletcher (2005) provide just one of many possible examples. Although identifying and implementing solutions in assessment remains challenging, this body of literature has helped make the process somewhat less wicked.

7. *Every wicked problem is essentially unique. (R/W)*
   Every wicked problem is essentially unique and novel. (C)

Various wicked problems may have similarities between them that cause them to appear similar. Despite similarities that may emerge they remain unique in the respect that no sets of solutions emerge that can ultimately be applied to all of these similar problems (Rittel and Webber 1973). Conklin (Christensen 2009) notes that experience may be gained over time that will provide guidance in how to approach wicked problems but that each new problem will still produce characteristics that distinguish it from previously seen problems and require unique solutions.

As noted in the previous section a significant body of literature on the "how to" of AOL is developing which provides guidance in the development and deployment of the assessment plan. While every college of business arguably faces the same problem of developing and implementing an assessment plan, no two will be exactly the same in terms of program structure, students or

expectations. Given that the AOL process should be faculty driven (AACSB 2010) the wickedness of the AOL problem is compounded further by the social complexity (Conklin 2006) of the committee process typically employed in academe.

8. *Every wicked problem can be considered to be a symptom of another problem. (R/W)*
   Not included as an essential characteristic by Conklin (2006).

Wicked problems can almost always be cast as only a symptom of some underlying (usually equally wicked) problem which are identified (and blamed) in the identification of solutions. An example of a genuinely wicked societal problem we are asked to solve might be crimes of property such as theft. This may be a symptom of the underlying problem of high unemployment which may be caused by poor education which may be caused by any number of other underlying causes. The same wicked problem may also be cast as the cause of other wicked problems. High theft causes more affluent community members to move out which reduces the tax base which hurts the education system which causes high unemployment.

The same types of analyses plague the discussion of assessment and AOL. Many college of business AOL plans are likely to include goals similar to the following examples from an unidentified college of business of student learning goals (problems).

> *Goal 1: Students will create effective written business documents.*
> and
> *Goal2: Students will solve business problems using appropriate qualitative analytical tools.*

In attempting to identify how to address these problems the discussion follows this scenario.

> *"Students in Strategic Management do poorly on the qualitative analysis assessment because their writing skills are so poor. They can't write a memo or a business plan. Why aren't they learning this in the Business Communication class?"*
> Followed by,
> *"Students in Business Communication cannot produce business documents because they didn't learn to write in Freshman English. Is it our job to teach them to write?"*

The result of this analysis is "your problem is not my problem and my problem is the fault of someone else." These discussions tend more toward problem avoidance or deflection rather than determining how we can address the real problem of assuring student learning and only serve to make an already wicked problem even more so.

9. *The existence of a discrepancy representing a wicked problem can be explained in numerous ways. The choice of explanation determines the nature of the problem's resolution. (R/W)*
   Not included as an essential characteristic by Conklin (2006).

Because wicked problems are difficult to formulate and define (property 1), unique (property 7) and do not lend themselves to iterative solution strategies (property 5) the range of explanations for disagreements regarding their formulation and the effectiveness of solutions is virtually limitless. The problem definition is a function of *both* assumed underlying (sometimes wicked) causes and already conceived solutions either or both of which may be largely arbitrary. As we have seen in the preceding discussion, AOL planning exhibits many of the same characteristics. It is frequently difficult to reach consensus on exactly what should be assessed when working through a committee driven process. How each goal should be measured is a function of what the committee believes will be the underlying causes that produce any deficiency in performance. And, ultimately, the range of corrective actions that might be taken to "close the loop" is almost unlimited.

10. *The planner has no right to be wrong. (R/W)*
    Not included as an essential characteristic by Conklin (2006).

Recall that the concept of wicked problems was formulated by Rittel and Webber (1973) in a discussion of public policy and city planning. These are endeavors that have multiple stakeholders serving constituencies that often have widely disparate outcomes as their goal. In these situations the cost of being wrong can be quite high in terms of human, societal as well as financial cost. Fortunately, AOL does not face this issue to any large degree. While defining the problem and formulating solutions may be somewhat wicked, there are fewer competing interests and the ultimate goal is the same: To ensure that our students are in fact leaving our colleges with the body of knowledge and set of skills that we believe they need to be successful. The question now is how do we solve this wicked problem of assessment?

SOLUTION STRATEGIES

Conklin (2006) identifies two common strategies for coping with wicked problems. Neither of which is likely to be successful. Not surprisingly, the typical assessment committee employs elements of both strategies which only serve to make their task more difficult and frustrating. The first of these is *studying* the problem. In most assessment committees, studying becomes synonymous with procrastination. Faced with the requirement of implementing a process (AOL) to which they are not fully committed, their meetings are spent debating exactly what the problem is and debating which measurement method is the absolute best. While this approach can succeed in avoiding the problem for a

time, it also has the effect of generating even more committee meetings resulting in greater frustration for the members. At some point the committee will be directed to produce results and they will move to the second strategy.

The second strategy involves *taming* the problem so that it is no longer wicked and can be easily solved. The six taming strategies identified by Conklin (2006) read much like the course outline of a typical AOL seminar.

- *Lock down the problem definition*: The committee through a brainstorming exercise comes to agreement on what the goals are.

- *Assert the problem is solved*: Much like the previous strategy, the problem definition is agreed upon never to be discussed again.

- *Specify the measurement parameters*: Establish a measurement and an objective goal that will measure the success of our solution.

- *Define the problem as similar to another previously solved problem*: Find out how another college has addressed the problem and adopt their solution completely disregarding the fact their students, faculty and environmental factors are different.

- *Give up on finding a good solution and move on*: This allows the focus to shift from real AOL to generating a report that will satisfy the dean or accrediting body.

- *Declare that only a limited number of solutions are available*: By constraining the set of solutions the committee can get something in place and move on.

These strategies may appear to work in the short term but typically do not really address the problem and ultimately another committee will find itself tasked to revisit it.

THE LEADERSHIP SOLUTION

As noted earlier, one of the challenges in successful AOL implementation is the social complexity introduced by the committee process commonly employed in the academic environment. The classic model consists of faculty members representing all departments who rotate on and off the committee with one of the members elected or designated as the chairperson. One solution to this would be to eliminate the assessment committee and designate one individual as the assessment "czar" who will simply design and implement an AOL plan. This would make taming the problem much simpler, lead to generation of appropriate reports and perhaps satisfy institutional requirements. It does not, however, foster the necessary faculty participation in

making program or course changes required to really assure that students are learning. Further, this approach is contrary to the expectation by most accrediting bodies of faculty governance and participation. A better model is perhaps a hybrid of these two approaches, encompassing characteristics of both management and leadership.

Management is defined by Griffin (2011) as *a set of functions directed at the efficient and effective utilization of resources in the pursuit of organizational goals*. This definition directly correlates to the aforementioned taming strategies identified by Conklin. By nature, managers should be task driven and strive to efficiently and effectively accomplish the institutional goal of an effective AOL plan. The manager of the AOL process must possess the position power granted through the hierarchical structure of the institution, indicating that the dean, assistant/associate dean, or a high ranking faculty member of the business unit would be at an appropriate level of power to lead the committee. In addition, the manager must have the power to give or withhold rewards with respect to the committee outcomes. However, this reward power is often negated by the tenure structure of higher education, whereby committee involvement may not hold as high reward as scholarly and research activities. Expert power in the form of knowledge of AOL plans is also essential for the manager of the committee, which consequently is one of the roots of this *Wicked Problem*. However, management without leadership to inspire the committee will not affect the desired outcome of developing and implementing an AOL plan.

From the manager's standpoint, trying to motivate people is an attempt to influence their behavior. In many ways, leadership, too, is an attempt to influence the behavior of others, not from the power of position, reward or expertise, but by the ability of the leader to create a cohesive and unified group. Leadership is identified by the authors as *motivating individuals and groups to work together to achieve a common goal which may sometimes be externally introduced and may be contrary to their self-interest*. Faculty members come to the assessment committee with competing interests which may be departmentally driven or driven by individual faculty concerns. A leader must motivate or inspire the committee to move past these self-interests and align to the common goal of ensuring that students graduating from our colleges of business have achieved the skills that will allow them to be successful post-graduation. To be effective, the manager must be an organizational leader and a champion for the process. The leader is one who is well-respected not because of the position held within the business unit but the ability of the individual to lead by example to support, develop and defend the AOL plan to those within and outside of the committee.

Thus the hybrid approach to developing the AOL plan would encompass both the "czar" and the committee leadership. Despite the social complexity it introduces, a committee structure with faculty who rotate off periodically is necessary for the reasons identified previously: faculty governance, participation and buy-in. AOL cannot be something that someone else does. To be effective it has to be something that the faculty collective recognizes as benefitting and

improving student learning. This committee should be chaired by a designated leader who can manage the process. This individual should possess the skills to lead the committee to consensus and the authority to set timelines and deadlines and therefore must possess characteristics of both the leader and the manager. Leadership and management are no doubt related, but distinctive in the development and execution of desired outcomes. Leadership is necessary to creatively develop the desired AOL plan, and management is necessary to develop the plan in an orderly fashion.

REFERENCES

Association to Advance Collegiate Schools of Business (AACSB) International (2010). *Eligibility Procedures and Accreditation Standards for Business Accreditation* [Electronic Version]. Retrieved October 12, 2010, from http://www.aacsb.edu/ accreditation/ business_ standards.pdf

Association to Advance Collegiate Schools of Business (AACSB) International (2007). *AACSB Assurance of Learning Standards: An Interpretation* [Electronic Version]. Retrieved October 12, 2010, from http://www.aacsb.edu/publications/papers/accreditation/assurance-of-learning.pdf

ACBSP. (2009). *ACBSP Standards and Criteria for Demonstrating Excellence in Baccalaureate/Graduate Degree Schools and Programs.* Overland Park, KS: ACBSP.

Anderson-Fletcher, Elizabeth A. (2005). *Going from Zero to Sixty in Twelve Months: Implementing Assessment at the Bauer College of Business*. In Kathryn Martell and Thomas Calderon (Eds.) *Assessment of Learning in Business Schools,* Volume 1, No. 2 (pp. 64-83). Tallahassee, FL: Association for Institutional Research.

Astin, A. (1990). *Assessment for Excellence.* New York: MacMillan.

Christensen, Karen (2009). Building Shared Understanding of Wicked Problems. *Rotman Magazine,* Winter, 17-20.

Conklin, Jeff (2006). *Dialogue Mapping: Building Shared Understanding of Wicked Problems. Chichester, England: John Wiley & Sons.*

Deming, W. E. (1982). *Out of the Crisis.* Cambridge, MA: Massachusetts Institute of Technology.

Fendrich, L. (2007, June 8). A Pedagogical Straitjacket. *The Chronicle of Higher Education* , p. B6.

Fryshman, B. (2007). Have I Been Watching This Movie Backwards? *Inside Higher Ed (insidehighered.com).*

Gardiner, L. R., G. Corbitt, & S. J. Adams (2010). Program Assessment: Getting to a Practical How-To Model. *Journal of Education for Business*, 85: 139-144.

Griffin, R.W. (2011). *Fundamentals of Management. Southwestern.*

Martell, K. (2007, March/April). Assessing Student Learning: Are Business Schools Making the Grade? *Journal of Education for Business* , 189-195.

Pacanowsky, Michael (1995). Team Tools for Wicked Problems. *Organizational Dynamics*, Vol. 23-3, 36-51.

Pringle, C., & Michel, M. (2007). Assessment Practices in AACSB-Accredited Schools. *Journal of Education for Business*, 202-211.

Rittel, Horst W. J. and Melvin M. Webber (1973). Dilemmas in a General Theory of Planning. *Policy Sciences*, 4, 155-169.

U.S. Department of Education. (2006). *A Test of Leadership: Charting the Future of U.S. Higher Education.* Washington, D.C.: U.S. Department of Education.

Weinstein, D. (2006). Outcomes Assessment Is Here to Stay, Get Faculty Buy In. *Academic Leader* , pp. 1-2.