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Using Interdisciplinary Teams to Develop an Assessment System and Change Organizational Culture*

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The approach taken by the College of Business and Technology at East Tennessee State University uses multidisciplinary teams to develop an assessment process that unifies the organization's culture to focus on assurance of learning. The theoretical literatures in change management processes and organizational culture are the foundations for the design of the assessment process that spans seven diverse departments and satisfies the requirements of multiple disciplinary accreditors. Lessons learned and recommendations for others are shared.

Keywords: multidisciplinary teams; change management; culture change; overcoming resistance; continuous improvement

INTRODUCTION

EAST TENNESSEE STATE UNIVERSITY is a large regional institution with approximately 12,000 students whose institutional mission is a balance of teaching and research. In the fall of 2003, the University's central administration announced that the College of Applied Science and Technology and the College of Business would be merged as a cost saving measure to form the College of Business and Technology (CBAT). The merger resulted in CBAT becoming the second largest college on campus with 115 faculty members, 50 staff members, 44 programs, and over 2700 students. The merger united seven diverse departments (see Fig. 1) ranging in size from seven to twenty-seven faculty members. Departments offer a diverse array of programs and majors. Programs across the College are currently accredited by five disciplinary accreditors in addition to the University's accreditation by the Southern Association of Colleges and Schools (SACS) (see Fig. 1). Additional accreditation will be sought over the next several years in several departments.

The diversity of faculty, programs, and departments created by the merger was likewise reflected in a diversity of cultures within departments, between departments, and overall between the Business and Technology Divisions. The College of Applied Science and Technology historically had a decentralized culture and a rather heterogeneous faculty whereas the College of Business historically was more homogeneous with a centralized culture. There were, perhaps, only three commonalities between the faculty and departments before the merger:

1) the faculty, as a whole, were focused on teaching excellence as the cornerstone of faculty performance (with research activity supporting the teaching mission),
2) all programs had been presented with a directive from the Provost that where disciplinary accreditation could be gained, it should be sought, and
3) that all disciplinary accreditors had recently updated accreditation standards to require assessment of student learning.

Coupling assessment with culture change

The Dean of the newly merged College recognized that all departments were going to be faced with gaining or maintaining accreditation in the face of new requirements for the assurance of learning and assessment (hereafter collectively referred to as AOL). So, one year after the merger, a new position was created for a Director of Assessment (The position was upgraded within two years to become the Assistant Dean for Assurance of Learning and Assessment hereafter referred to as the ADA). The charge to the ADA was a broad one focusing on supporting the departments in their assessment efforts and creating an AOL process for the College. It quickly became apparent that the faculty's dedication to students and teaching coupled with the requirement to assess students' learning could serve as excellent mechanisms around which the two diverse cultures of the Divisions could be merged. Simply put, faculty cared about students and were all faced with figuring out how to assess how well students were learning. Thus, the ADA decided to

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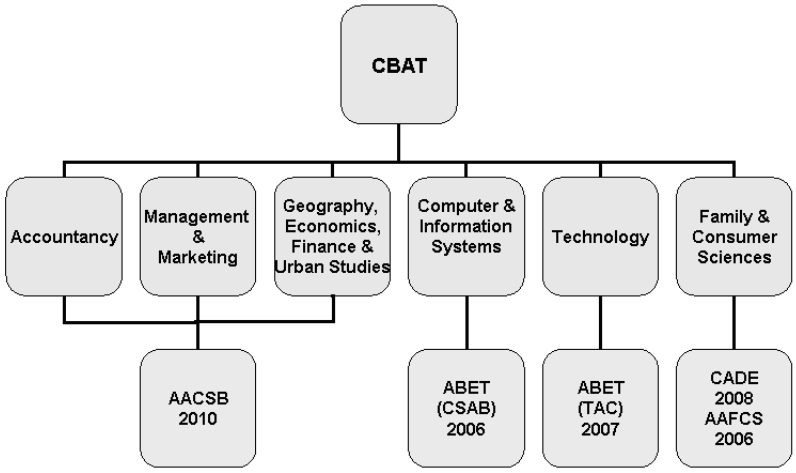

Fig. 1. ETSU's College of Business and Technology.

approach AOL not only as a matter of assessing student learning, but also as a mechanism by which the cultural divide between the Divisions could be spanned. As such, the ultimate goals of any AOL system designed became:

1) to help merge and unify the culture of CBAT, and
2) to determine what areas of student learning were important to the faculty and to determine how well our students were performing therein so that continuous improvement could be undertaken.

With those goals set, a very functional issue came to the forefront. Would the AOL system be designed as a single system to span all departments and accreditors or would separate systems be designed for each department and its accreditors in keeping with the traditional approach? After receiving AOL training from the College's major accreditors (e.g. Accreditation Board for Engineering Technology (ABET) and the Association to Advance Collegiate Schools of Business (AACSB)), the ADA realized that, regardless of accreditor, good assessment is good assessment. This became a cornerstone of the CBAT AOL process as the tenets for sound AOL were held in common. Thus, the ADA began to attack the functional goal of developing a single AOL process that would also facilitate the desired culture change.

Furthermore, as the ADA received training in AOL from the accrediting bodies, each session reinforced the notion that assessment should not be driven primarily by the need to accumulate data to satisfy accreditors' requirements. Rather, the true spirit of the mandate to assess was to create a culture of AOL that was student-focused. Angelo [1] put it best "Accountability matters, but learning still matters most". Thus, the notion of culture rang true in two regards: merging the culture of the College and creating a unified culture of AOL.

Building a new culture requires understanding the current culture

In order to build a culture focused on AOL, it was first necessary to characterize the current culture with respect to assessment. Martell [2] presented a developmental or evolutionary model by which a program can determine its level of assessment maturity. Specifically, the model details three levels of assessment implementation: awareness, initial implementation, and mature implementation. The awareness stage is characterized by:

- a recognized need for assessment;
- the mission, goals, objectives/outcomes and methods having been identified;
- an initial assessment plan and infrastructure are in the process of being created;
- the language of assessment being relatively unknown to faculty; and
- the need for accreditation serving as the primary driver behind the assessment process.

Thus, programs at the awareness stage have neither developed a student-centered culture of AOL nor engaged in closing the loop. The second stage, initial implementation, is characterized by:

- completion of the first assessment plan;
- completion of parts of the infrastructure required for assessment;
- implementation of processes for data collection, storage, retrieval, and reporting;
- recognition that direct data are necessary in addition to indirect data;
- faculty recognizing the language of assessment; and
- emergence of a dialogue about assessment among faculty members.

While having made strides in assessment, programs at the initial implementation stage have also yet to close the loop and make continuous improvements based on data although they are

progressing in that direction. Programs at the third and final stage, mature implementation, have:

- a culture of student learning and continuous improvement in which assessment is a significant priority;
- students who understand their role in the assessment process;
- seamless access to data;
- regular discussion and inclusion of data in curricula decisions;
- funding in the budget designated specifically for assessment; and
- an individual designated to be responsible for the assessment process.

Schools at the mature implementation stage have successfully closed the loop, likely several times over [2].

As was generally the case among colleges and universities in 2004, the departments and programs in CBAT were at the awareness stage with a few moving toward the initial implementation stage. Not surprisingly, those moving actively toward initial implementation were largely those facing immanent maintenance of accreditation visits. However, most departments and programs in CBAT had identified the need for assessment driven by accreditation and had moved to address the challenge by identifying an individual or forming a small committee charged with learning about and implementing assessment. As is commonly the case with programs in the awareness stage, many were struggling to clearly understand what was required and how to design an efficient and effective assessment process.

Building a culture of AOL

There is a significant literature focusing on change processes and change management that can inform the process of changing a program's culture to one of AOL. Change management, or the manner in which changes are introduced and administered, largely determines how successful a change process ultimately is [3]. The process of shifting to a student-centered AOL culture should be one of managed-planned change, although many programs fail to approach the shift in such a manner. A managed-planned change process is characterized by proactive and purposeful change that is executed in a coordinated fashion. The goals of such a change process are twofold:

1) to improve the ability of the organization to adapt to changes in the environment, and
2) to change employee behavior [4].

Both of these goals are applicable to the change toward AOL. The shift to an AOL culture will surely aid programs in adapting to the changes occurring in both the educational and accreditation arenas. Furthermore, the shift to an AOL culture absolutely requires changing faculty behavior.

Many programs struggling with the shift have not yet addressed the identification of a change agent responsible for stewarding the culture change process. That is why, in fact, one of the hallmarks of a mature implementation is the identification of an individual responsible for the AOL process. Someone must serve as a change agent in order to design and implement the AOL process consistently. Some schools, including ETSU, have recognized the need for a change agent early in the design process and most that do so identify either a faculty member or an administrator to assume the mantle of assessment steward or change agent.

With a change agent identified, designing the change process becomes key. Lewin [5] proposed the quintessential model of organizational change that, while simple, is parsimonious and applicable to AOL. Lewin views change as a three step process that includes unfreezing the status quo, moving to the desired state, and refreezing the change so that it becomes permanent. The application of this model to AOL is seamless.

Unfreezing is an often overlooked step in change processes and failure to prepare the organization for change, as is required in the unfreezing phase, is often the primary cause of many failed change processes [3]. Unfreezing is essentially a process of introducing the change to those who will be involved and affected. Unfreezing the status quo would require the types of activities that are representative of being in the awareness phase:

- need for the change to AOL is recognized;
- rudimentary elements are being addressed (i.e. mission, goals, objectives, outcomes and methods);
- an initial effort has been made to address planning and infrastructure [2].

Movement or change is facilitated by individuals understanding why change is necessary as well as understanding the details of the required change [3]. Movement would involve the system design issues that would be characteristic of the initial implementation stage including: completion of the first assessment plan and portions of the infrastructure, implementation of data management processes (i.e. collection, storage, retrieval, and reporting), understanding of the necessity for direct data, and faculty using the vocabulary of assessment in dialogue [2].

Refreezing is characterized by individuals regularly applying what they have learned [3]. Refreezing would involve those activities that would help the change to AOL take root, which would be those characteristics of mature implementation including:

- an evident student-centered culture that is built upon continuous improvement where assessment is a significant priority;
- student awareness and understanding of assessment;
- seamless access to and use of data, consistent funding of assessment activities; and
- identification of an assessment steward.

Of course, the ultimate sign of a mature system where the culture change has been refrozen as the new status quo is closing the proverbial loop—repeatedly [2].

Building a culture requires overcoming resistance

There is also an ample literature regarding building and changing organizational culture that indicates that one of the essential facets of culture change, especially the unfreezing phase of culture change, must be the recognition of sources of resistance to change and implementation of activities to decrease or overcome that resistance [3] [4]. Simply put, individuals must be willing to unfreeze or alter their thoughts and activities in order for significant and meaningful change to occur [3]. Typical types of factors that obstruct change include:

- individual attitudes,
- training,
- the environment,
- financial concerns,
- alteration of routines,
- habit,
- lack of recognition of need for the change,
- fear of uncertainty or of change in general,
- lack of trust, and
- myths [3].

Although this list of factors that commonly obstruct change is generic, the factors are easily applicable to assessment in a university setting. Commonly cited sources of resistance to assessment include examples of each of the typical sources of resistance. At their root, reasons for faculty resistance can be reduced to a concise set of concerns including: "I can't do assessment" (i.e. "I don't know how", or "I don't have time."), "I've already done assessment" (i.e. "Remember the last time we tried this? It didn't work then, why should it work now?"), "I shouldn't have to do assessment" (i.e. "You're not paying me enough as it is . . .what will I get for doing this extra work?"), or "I won't do assessment" (i.e. "I'm tenured, you can't make me." or "This flies in the face of academic freedom.") [2].

Lewin [5] again provides a parsimonious, but extremely useful model when attempting to identify and overcome sources of resistance (see Fig. 2). Lewin's model recognizes both the forces that drive change as well as those that muster resistance against it. Driving forces, thus, are forces that push the shift away from the status quo. Restraining forces are those that encapsulate resistance to the change and propagate the status quo. Both the driving and restraining forces regarding AOL are common across programs and universities (see Fig. 2). Driving forces commonly include accreditation requirements, concern for students' learning, and strategic continuous improvement while restraining factors include faculty concerns especially those centering on resources, rewards and workload.

Based on Lewin's three step model, Kotter [6] introduced an eight step approach for implementing change that is applicable to shifting a college's culture toward one of AOL as well as merging the cultures of the Business and Technology Divisions in CBAT. Specifically, Kotter's approach is designed to avoid common failures that inhibit change such as:

- inability to instill a sense of urgency driving the change;
- failure to build a coalition to manage the change process;
- lack of a vision for the change process and inability to communicate that vision;
- failure to remove obstacles that could impede achievement;
- lack of achievable, short-term goals; and
- failure to anchor the change into the organization's culture.

Kotter's eight steps to implement change are as follows:

1) build urgency for the change by communicating compelling reasons necessitating change (e.g. changing accreditation standards

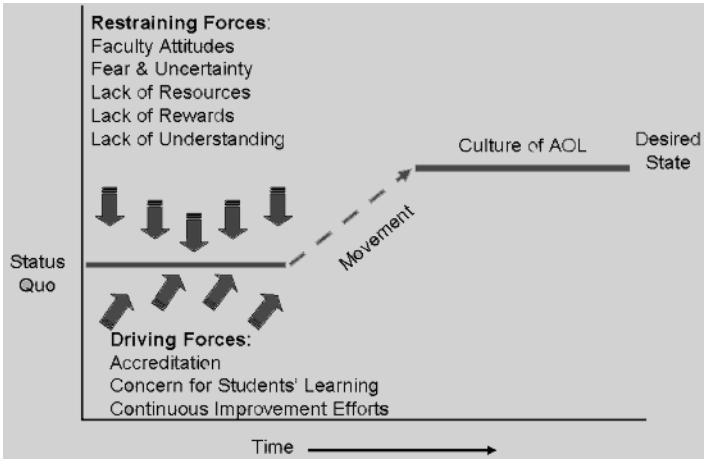

Fig. 2. Overcoming resistance to AOL.

or pending Federal mandates for accountability in higher education [7];
2) build a coalition with sufficient power to lead the change process (e.g. an assessment committee);
3) create a vision for the change and strategies for its achievement (e.g. an assessment plan);
4) communicate the vision clearly throughout the organization (e.g. through an assessment plan, faculty meetings or retreats etc.);
5) empower individuals to pursue the vision including removing barriers, encouraging risk taking, and promoting creative problem solving (e.g. encouraging faculty to make changes in courses, empanelling task forces and empowering them to review data and take action);
6) ensure short-term achievements occur and reward those achievements (e.g. publicize positive student outcomes revealed by baseline data);
7) subject plans, improvements, and changes to continuous improvement (e.g. improve both students' learning opportunities as well as the assessment process itself); and
8) reinforce the change by highlighting the connection between new actions and organizational success (e.g. using data, illustrate how continuous improvement efforts have improved student learning and performance).

While all of Kotter's steps are directly applicable to building an assessment system and closing the loop, one in particular proved to be especially beneficial for bringing about the two-pronged culture change in CBAT-building a coalition to lead the change process.

Building a unified AOL culture using multidisciplinary teams

The literature is rife with articles outlining the benefits of teams. In particular, benefits widely attributed to teams include increasing buy-in to decisions, decreasing resistance, and having diversity of input that improves the quality of output. Furthermore, teams are cited as bringing together complementary skills and experiences that exceed those of any individual and which allow the team to deal with multifaceted challenges (such as those facing CBAT). The process of teamwork is also advantageous in that it allows for timely problem solving. Teams are also flexible and responsive to changing environments and thus, are able to adjust their approach. They perform with greater speed and accuracy as well as effectiveness than do individuals working alone. As a function of their process in facing challenging problems, teams build trust and confidence in members' capabilities that proves invaluable in pursuing the team's purpose and implementing its solutions. Finally, teams have fun working together on tasks that would be quite monotonous if approached individually (such as assessment). The fun aspect of the team's interaction has been noted to sustain team performance by aiding members in dealing with stress that accompanies their challenging work [8].

Katzenbach and Smith [8] state that trying to bring about organizational change by working with individuals is simply ineffective. They argue that a team is in a much better position not only to design an effective organizational change, but also to communicate the vision underlying it. Furthermore, they argue that teams are in a much better position to carry out the change process. They go so far as to state, "Teams outperform individual acting alone or in larger organizational groupings, especially when performance requires multiple skills, judgments, and experiences" [8]. The crux of their argument in support of teams is simply that individuals acting alone are much less likely to be influential in creating and communicating solutions than individuals working together. Hence, their logic, while simple, is quite powerful. This logic is clearly applicable to the challenge facing CBAT to create a unifying culture of AOL. Furthermore, Katzenbach and Smith [8] maintain that organizations that utilize teams effectively are far more open to change since individuals are allowed, within team structures, to have meaningful input into their work. A team approach, likewise, encourages members to listening actively to the input of others and, thereby, will likely increase the quality of the team's output. Thus, the use of teams to create a unified culture of AOL should readily perpetuate the process of continuous improvement.

The most comprehensive literature regarding the effectiveness of teams exists in the arena of total quality management. Given that the central focus of the TQM approach is continuous improvement, many of its tenets are directly applicable to building a culture of AOL. Specifically, the TQM literature reinforces the utility of teams indicating that teams are effective when they a comprised of a cross-section of individuals working within a particular process or on a particular problem [9]. Jablonski [10] directly addresses the use of teams in universities indicating that they should be comprised of individuals such as administrators, professors, or staff, who are involved enough in processes to recognize opportunities for their improvement. Teams are particularly well-suited to solving interdepartmental problems that are often difficult to solve. In such instances, TQM suggests that interdepartmental divisions should be dissolved so that problems can be addressed without regard to departmental barriers that often prevent progress [11].

Informed by the literature in change management and the literature regarding teams, the ADA, with support of the Administrative Council (i.e., deans and department chairs) in CBAT, formed an assessment team to steward and manage the change process to create a unified culture of AOL for the College. It is useful to note that many different types of teams can be created. However, the specific type of team formed

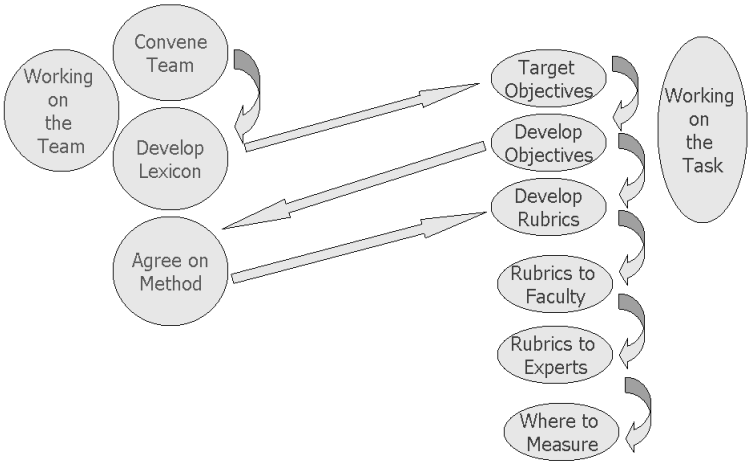

Fig. 3. Team process.

should be selected relative to the type of problem or process to be addressed. In the case of culture change in CBAT, a cross-functional special-issue team, the Assessment Team, was formed. This approach was appropriate given the variety of human resources that needed to be brought together to begin designing and implementing the change process [12]. Dyer [12] notes that special-issue teams are well suited to address matters of quality, cross-functional problems and strategic planning. Thus, a special-issue team was very well suited to address the process of developing a unified AOL culture because the task at hand was a matter of quality (i.e. improving quality of student learning as well as continuous improvement of the AOL process itself), cross-functional by design in that it had to span seven diverse departments, and strategic in that the process designed would become a part of CBAT's strategic plan and culture.

Dyer [12] correctly notes, however, that the major impediment to effective functioning of special-issue teams is that little time is generally devoted to preparing members to function as a team before work on the task begins. Furthermore, he notes that the team leader needs to be prepared to spend time building a team mentality and some team skills in preparation for work on the task.

BUILDING THE INTERDISCIPLINARY TEAM

Armed with these theoretical perspectives, the ADA, serving as the Assessment Team leader, began the process of both building the team and having the team attack the task (see Fig. 3). The ADA first sought to convene the team and requested that each Department Chair identify at least one individual to serve on the team. In addition to having the chairs identify team members, a general call went out to faculty members as they were identifying their desired "committee" assignments for the year. Only those who volunteered or readily agreed to serve when asked ultimately became team members. This has been the primary principle that has guided the membership of the team for the three years it has been in existence. Simply put, if an individual is resistant to serving, after the ADA identifies the nature of the resistance (e.g. resistance to working in a team, resistance toward assessment, etc.), the member is released from serving and a replacement is sought. The keys to the composition of the team are that all individuals interesting in serving are allowed to do so and that each of the departments has to have representation. In some cases, a department had several representatives. Desire to serve is essentially the only requirement for membership on the team. No knowledge of assessment or AOL is required, although a number of members chose to serve precisely because they had knowledge or expertise in assessment in their discipline or department.

In light of Dyer's [12] cautionary note that teams should spend time in team development, the initial task given the newly formed team in its first meeting was simply to have the faculty introduce themselves to each other and share their path onto the team. Each member was asked to articulate what assessment was in his or her discipline. It immediately became apparent that members of the team were talking about the same concepts, but were using different vocabularies driven by their disciplinary accreditation. So, the next task identified by the team was to return to the following meeting with each member prepared to articulate what assessment required in his or her discipline and to articulate the terminology given to key concepts (e.g. learning goal vs. learning objective vs. learning outcome). The discussion that followed formed the basis of the team's interaction and dynamics with each member listening intently as disciplinary assessment requirements and terminology were shared. This single interaction set the

tone by which all other interactions would occur and ultimately defined the team's culture. Many members asked thoughtful and probing questions as all members struggled to find the common denominators between their discipline and others'. This process took several meetings and ultimately resulted in the team adopting a common lexicon for use in its work.

With common ground established, the team turned its attention to its task. The ADA defined the initial task for the team as determining the areas in which learning outcomes would be developed. In choosing to focus on the commonalities among the departments and CBAT students, the team decided to focus on macro-level skills needed by all graduates. The team came to refer to these fundamental and universal skills as transferable competencies. As a function of this discussion (and aided by some guidance from the CBAT Administrative Council), the team decided to formulate learning outcomes for six transferable competencies: oral communication, written communication, critical thinking/problem solving, teamwork, ethics, and using information technology. Functionally speaking, the team quickly realized that formulating learning outcomes and developing corresponding course-embedded measures for all six transferable competencies in a single year would be an overwhelming task. So the group, with the ADA's guidance, decided to focus on developing three learning objectives and embedded measures (i.e., rubrics) for each in its first year. Based on the theoretical literature outlined above, the ADA suggested that the team begin working with the three competencies for which consensus on definition and measurement would be most easily achieved (i.e. short-term goals and immediate "wins"). So, the team decided to work on oral communication, written communication, and critical thinking/problem solving.

Based on training received by the ADA, the group decided to use primary trait analysis as the method to develop course-embedded rubrics that would be implemented across all seven departments. Primary Trait Analysis (PTA) is a process by which major traits or characteristics that are expected in student work are identified. Specific criteria with corresponding performance standards are defined for each primary trait [13]. Simply put, definition of the primary traits addresses how faculty would know if the students were performing well on a specific learning outcome. Thus, in PTA, explicit criteria are created by the faculty to be used in evaluating student work [14].

In the current case, the task of conducting the PTA for the learning outcomes was clearly the province of the Assessment Team. However, the process of PTA appeared easier than it actually was when it came time to begin work on the first learning outcome, oral communication. Although the team agreed to use Primary Trait Analysis, the method by which to do the PTA was not clear. The group began the PTA process via open discussion and it became readily apparent that it would become a never-ending discussion if another method for conducting PTA was not agreed upon. Next, the group tried to capture ideas for the PTA on flip charts. This also proved too time consuming and cumbersome because consensus did not quickly emerge. After these attempts, the ADA suggested another method garnered from training [15], an affinity exercise.

An affinity exercise is a well-known, controlled brainstorming technique that is very useful to structure idea generation as well as to capture information. Affinity exercises are simple techniques that are quickly implemented and that progress rapidly. They are well suited to tasks that are unknown or unexplored (such as conducting PTA for a new learning outcome) and are easily implemented with teams where members have diverse experiences (such as CBAT's assessment team) and incomplete knowledge of the task (such as assessment). Affinity exercises are well suited to sifting through large volumes of data and are particularly useful to encourage new patterns of thinking as was the task facing the Assessment Team. The generic steps in an affinity process are:

- generate ideas,
- display ideas,
- sort ideas into groups,
- create headings for groups,
- draw a finished affinity diagram [16].

The Assessment Team agreed to try PTA via an affinity exercise. The ADA facilitated the affinity exercise and gave each team member a 2×2" Post-It Note© tablet. The ADA then asked each member to write one idea or primary trait for oral communication skills per Post-It Note©. The team was literally charged with these instructions: "You know a good oral presentation when you see one. Make a list, one idea or factor/trait per note, of each thing you want to see your students do in a presentation or each thing you don't want your students to do in a presentation." The group was given as much time as was required for every member to record all of his or her ideas. However, the group was encouraged not to belabor wording or ideas, but rather to work rapidly and silently. Once the brainstorming portion of the exercise was complete (in approximately 15–20 minutes), the team began the process of sorting the notes or primary traits and in the course of doing so, produced a rudimentary affinity diagram. This step of the process simply began with a single member sharing one note and others then volunteering similar ideas or traits they had captured on their notes. Once sets of ideas emerged, team members discussed the headings or titles to be given to each set of notes. These titles or headings ultimately became the headings for the major sections of the course-embedded rubric.

After completing the PTA, the team spent its next several meetings discussing the items identi-

fied to gain clarity across all the departments and disciplines in CBAT. While development of the first course-embedded rubric for oral communication took a number of meetings, with each successive cycle of PTA via affinity exercise, the process became more rapid given a growing consensus and shared understanding in the team. The team felt so comfortable with the process that it unanimously agreed to continuing using it for all future work. In its first year, the team developed three learning outcomes and corresponding embedded rubrics (i.e. oral communication, written communication, and critical thinking/problem solving).

Data were collected using these measures across all seven departments the following year. Of the three rubrics developed in the first year of the team's work, critical thinking/problem solving proved to be the most challenging because, while the definition of critical thinking was similar across the departments, the primary traits that characterized student learning were operationalized differently in various departments. For example, critical thinking in accounting and computer science is likely to yield correct and finite solutions to a problem whereas a uniform answer to a problem in marketing, management, or interior design is not likely to exist, but rather will reflect a significant degree of creativity. While data were being collected for the first three learning outcomes, in its second year, the team drafted three additional learning outcomes and corresponding measurement rubrics to be embedded in courses (i.e. teamwork, ethics, and using information technology).

The team's discussions proved invaluable to its development and served to provide a great deal of information that was carried back to each individual's home department. Many communication barriers were broken down as a function of these discussions and many disciplinary prejudices dispelled as the team members came to know each other and sought to understand each other. Essentially, the team formed a multidisciplinary culture focusing on AOL that the members then diffused to other colleagues in their departments and throughout the College. As this occurred, the implicit cultural barriers that existed between departments and between the Business Division and the Technology Division began to erode. This was the case not because the members of the team or members across departments agreed with each other, but because members of the team had opened a path for dialogue and debate that was spread to the departments.

The multidisciplinary Assessment Team was so effective a mechanism that its use has been extended. After developing six learning outcomes and six embedded rubrics, the Team's role evolved into its members serving as the coalition that is unifying the efforts of each department to develop or revise disciplinary and cross-disciplinary learning objectives. The Team has become the de facto pool of expertise regarding assessment throughout CBAT. Many of its members have become stewards of their department's disciplinary accreditation efforts. Each member has emerged into a role in his or her home department of helping the faculty there understand what AOL truly is as well as how the College's efforts can contribute data and analysis for disciplinary accreditation or re-accreditation efforts (thereby reducing the workload for the department's faculty).

The multidisciplinary team approach has been so successful in the College that additional multidisciplinary teams have been created to review data and formulate action plans for continuous improvement. Specifically, after the first year of baseline data was drawn, five task forces (i.e. temporary multidisciplinary teams) were formed to review the data from the oral communication rubric, the written communication rubric, the critical thinking/problem solving rubric, the Educational Testing Services Major Field Tests, and the wealth of demographic data that was amassed as a function of other measurement processes.

These task forces/teams are truly multidisciplinary in that three have sought the input of faculty who are experts in other colleges on the campus. The written communication task force invited a representative from the Department of English to help analyze and review the data as well as make suggestions regarding how to improve student writing skills. The task force's suggestions for improvement are truly innovative and cooperative involving both departments within the College as well as the Department of English and the campus Writing Center. The oral communication task force invited a representative from the Department of Communications to help analyze and review the data. And, the critical thinking/problem solving task force, having reviewed CBAT students' performance on the California Critical Thinking Inventory (administered by the University) and students' feedback about opportunity to exercise critical thinking skills in courses (collected each semester via student assessment of instruction) along with the data from the course-embedded rubric, sought to identify the department on campus whose students performed best on metrics of critical thinking. Having identified the Department of Philosophy as campus leaders in developing students' critical thinking skills, the task force invited participation of a faculty member from that department.

Additional indicators of the effectiveness of the multidisciplinary approach in these task forces is that the members of all task forces participate voluntarily, membership is largely comprised of individuals who had not yet participated in assessment activities, and that all five task forces requested additional data for consideration in understanding where students need improvement and making suggestions therein. Simply put, the task forces have taken their tasks seriously and created more work for themselves.

EVIDENCE OF A SHIFT TOWARD A UNIFIED CULTURE OF AOL: SIGNS OF SUCCESS

A shift in culture such as was desired in CBAT (one that requires not only shifting of a culture, but unifying two diverse cultures) is not likely to occur quickly. Nor is it likely to be signaled by a major event. Rather, the success of this type of culture shift is likely to be marked by a number of signs. Martell [17] suggests that an effective shift towards a culture of AOL is predicated upon the increasing involvement of faculty. Martell [18] suggests a phased and targeted approach to gaining faculty involvement (see Fig. 4). In the first year of assessment activity, the assessment steward should set the target of involving 15% of the faculty who are likely to be innovative in their teaching practices and willing to take risks. These early adopters are likely to be open to AOL and will easily see its utility for improving learning and, thus, will lead the way for others. In the second year, a target of an additional 35% of faculty should be set. These faculty will follow the innovations of the early adopters readily once their success is visible. Once on board, this 35% coupled with the 15% who are early adopters will comprise the early majority with 50% of the faculty engaged in AOL. In the third year of assessment efforts, according to this approach, a target should be set to gain of an additional 35% of faculty participating. This proportion would constitute the late majority of adopters, those faculty who are unwilling to be left behind when the change toward a culture of AOL has taken root. The remaining 15% of the faculty who have resisted participation in assessment should simply not be targeted for inclusion in the process. This group, aptly called cave dwellers (a.k.a. colleagues against virtually everything) by Rogers [15] would more likely engender the resistance of other faculty against assessment if they were targeted for participation. Thus, rather than raise their ire, they should simply be politely told they will not need participate since they do not want to, but that they should allow others who want to participate to do so. Additionally, it should be made clear that the "price" for their freedom (i.e. from participating in AOL) is their willingness to allow others to proceed. Generally, this is a price willingly paid by those who do not wish to be involved. Ultimately, once marginalized, many cave dwellers do not like being excluded and decide to come back into the fold and participate in assessment activities at least minimally.

Using these targets for participation in each of three successive years, the ADA tracked faculty participation in AOL including activities such as participation on committees (such as the Assessment Team and task forces reviewing data), in assessment workshops, in the annual faculty assessment seminar, etc. In the first year of the CBAT assessment program, over 20% of faculty participated in at least one assessment activity and many participated in multiple activities. By the end of the second year of the AOL program, total faculty participation approached 60%. Since the third year of the College-wide AOL process is currently underway and is not yet complete, it is not possible to report on the acquisition of the additional 35% of faculty targeted. However, membership on the task forces created in this year to review baseline data (as described above) includes many individuals who had not yet participated in the AOL program which is a positive indicator of the success of the culture change process.

RECOMMENDATIONS

Key recommendations for other colleges or programs based on the process described herein include:

1) Team members should be volunteers or those who readily agree to serve when asked. No one should be forced to participate.
2) While the team should immediately receive its charge, it should be given time to coalesce and develop its own culture before it begins to work.

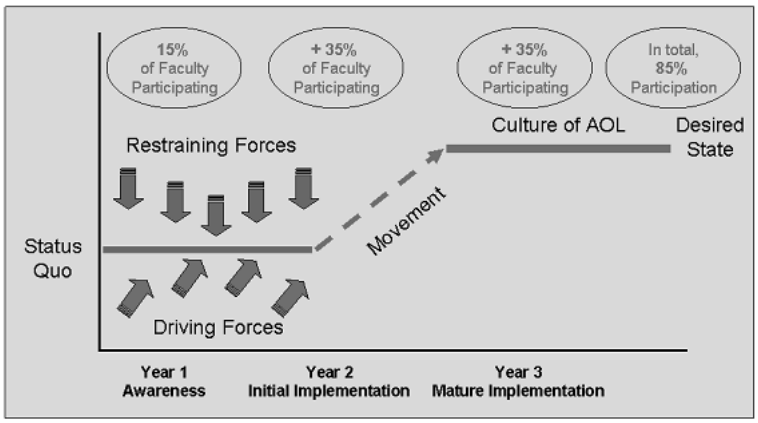

Fig. 4. Overcoming resistance and gaining commitment.

3) At least a few of the members of the team should receive training regarding what is required to assess student learning.
4) The team should be provided with an approach (such as an affinity exercise) to facilitate its work. Otherwise, consensus will be slow coming and frustration will rise within the team.
5) Members of multidisciplinary teams should be encouraged to take information back to their colleagues and seek input from them to return to the team.
6) Don't try to persuade everyone to participate immediately. Set targets for participation each year.
7) Don't try to convince everyone to be involved in every assessment activity. Invite faculty to participate based on their individual interests (e.g. invite those who are primarily researchers to work with the data collected).
8) Identify the primary sources of faculty resistance to assessment and work to find solutions that will minimize that resistance.
9) Communicate clearly with faculty regarding the factors that are driving the shift toward assessment. Communicate frequently sharing both opportunities for improvement and strengths identified based on the data.
10) Appeal to faculty as researchers trained to ask questions and collect data to answer them. Frame assessment as a research question, "What do we expect our students to learn? How well are our students learning?".
11) Appeal to faculty as educators. Frame assessment as a mechanism by which to help our students learn and improve and by which to document their performance.
12) Be sure to take on early tasks that are likely to be successfully accomplished and save the difficult challenges for the team to tackle after it has become functional and successful.
13) Give the team and faculty in general permission to fail—as long as they conscientiously are trying to continuously improve.
14) View assurance of learning and assessment as a developmental and evolutionary process instead of as a finite goal to be achieved (i.e. to just get the data collected for accreditation) and, therein, recognize that understanding of what is required and development of expertise will come over time.

CONCLUSIONS

The use of multidisciplinary teams can be a very effective mechanism for creating an assessment process, unifying diverse cultures, and creating a student-centered AOL culture. Developing a managed and planned approach to such culture change is highly beneficial and does not necessarily have to be complicated. Using such an approach, a sound AOL process that spans diverse departments, programs, and accreditors can be successfully developed.

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