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Using Action Research to Improve a College Admissions Process

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## Abstract

By using the Cummings and Worley action research model, a community college's admissions process is examined to discover ways of improving the process by increasing student understandability while yielding higher quality data for institutional decision making. Action research is the methodology chosen because the exact deterrents along with the best solutions are uncertain, and would be discovered collaboratively. As part of the research process, the college's history, mission, and outside influences are examined, as well as the components of quality data. The project's data gathering methods included student and staff questionnaires, observations, and secondary data. In response to the results, the collaborative team identified interventions to address the issues, such as increasing the process knowledge of staff and developing standard data matrices for student programs. Techniques and methods for evaluation to continue the learning process were also identified.

## Using Action Research to Improve a College Admissions Process

Higher education is facing new challenges throughout the nation, and particularly in the state of Colorado. Many of these challenges stem from state and national recessions, lower state revenues, and steadily growing enrollments. Higher education is one of many state institutions having to do much more with much less. With a volatile fiscal environment throughout, it is ever more crucial for institutions of higher education to be both efficient and effective. With greater accountability demands from the general public and local, state, and national governments, measurement of student success, namely rates of student retention, completion, and graduation, is gravely important for survival. Not surprisingly then, is that the methodologies to increase these measurements of success are at the forefront of every college and university administrator's strategic plan. The Community College of Aurora (CCA), a small community college in a metropolitan Denver suburb, is really no different. This action research project examines the admissions process at CCA as a possible path leading to increased efficiency and effectiveness within, thereby increasing student enrollment and retention rates.

### *History of the College*

The college's creation was the result of the collaborative efforts of a group of Aurora citizens who envisioned a college within their eastern suburb of Denver. They wanted to bring higher education to their community to enhance the quality of life and create opportunities. In its infancy, CCA was really

just an eastern satellite campus of the Community College of Denver holding evening classes at an Aurora high school.

In 1979, the Aurora Education Center was established with help from the mayor and city council, but it remained part of the Community College of Denver. In May 1983, the Colorado General Assembly created the Community College of Aurora; some 30 years after Aurora's citizens first began their collaborative efforts to strengthen their community. CCA is now one of five community colleges within the Denver metropolitan area, and is one of thirteen Colorado Community College System (CCCS) colleges within the state.

Through the years, CCA has matured with steadily growing enrollment for most of its history. Today, the college has two campuses in Aurora, one of which was acquired from a nationally recognized redevelopment project during the closing of the former Lowry Air force Base. Currently, more than 9,000 students attend classes at CCA each year (Community College of Aurora, 2004-05).

#### *The College Mission and Culture*

CCA really has two mission statements. One was assigned by the legislature, and one was collaboratively crafted by its employees. Upon its creation, the Colorado General Assembly assigned CCA its college mission to offer quality programs and services to students wishing to transfer to baccalaureate degree-granting schools, to students seeking job preparation, mobility, and/or retraining, to provide personal enrichment, and

to be diverse and responsive to the needs and interests of the community (Community College of Aurora, 2004-05).

Collaboratively, CCA employees crafted a related mission statement of their own: to provide lifelong educational opportunities, prepare the current and future workforce, and promote excellence in teaching, learning and service to our diverse community. Like the collaborative efforts of Aurora citizens that led to the college's creation, CCA maintains a collaborative culture. Employees often work together interdepartmentally to solve problems, create new programs, and increase student success. Although there is a traditional organizational chart, employees are encouraged by the administration to discuss problems and ideas with other departments. The college president demonstrates this culture by having an open-door policy for all employees. This collaborative culture proved to be an asset to this research project.

### *Opportunities*

The college is located in Colorado's third largest city which has the second largest population in the metro-Denver area. The city of Aurora's population is highly educated with 39% having bachelor's degrees, and 89% having high school diplomas (Aurora Economic Development Council, 2004). While at first glance, these figures seem to be a challenge for a two-year college such as CCA, in reality, lifelong learning is essential to employees in the workforce today (Merry, 2004), and community colleges are where much of that learning takes place. Since much of the college's focus is on adult learning, many of

their classes are offered evenings, weekends, online, or in a hybrid format, which is a combination of classroom and online learning. In fact, CCA is known for its exceptional responsiveness to the business needs (Aurora Economic Development Council, 2004).

The area around the college is booming. CCA is close to the new Buckley air Force Base, where \$90 million in development is planned over the next five years. The ground-breaking redevelopment project at the decommissioned Fitzsimons Army Medical Center, transforming it into a bioscience park, with new tenants such as the University of Colorado at Denver Health Sciences Center and Children's Hospital is currently underway. The future "Bioscience Center of the West" as it is already being called is undergoing a \$4.3 billion renovation and is expected to bring 32,000 jobs to the city (Aurora Economic Development Council, 2004). Conveniently, CCA is the only two-year college in the western states to have a biotechnology program and will help train these employees.

CCA is also the closest college in the metro area to Denver International Airport, the largest airport in the United States (Aurora Economic Development Council, 2004). This makes CCA an opportune choice for international students, enriching both the educational environment and the revenue pool as these students pay much higher non-resident tuition rates.

While the city of Aurora provides many opportunities for CCA, recent legislation may as well. Starting fall semester 2005, colleges and universities in Colorado will be funded

differently, thanks to the new College Opportunity Fund (COF). Presently, the state funds public colleges and universities based upon full-time equivalent (FTE) student enrollment. Now, instead of the state funding the institution directly, it will fund the state resident student and will pay the institution on the student's behalf. Students may use their stipend from the state at any approved Colorado public or private institution of higher education for undergraduate classes (College Opportunity Fund, n.d.) How COF will affect CCA remains to be seen, however students will begin to realize the value of spending their stipend amount at a community college as opposed to an institution that charges higher tuition.

### *Challenges*

While COF is seen as an opportunity, it is also a threat. Students may only use their COF stipend for classes leading toward an undergraduate degree. Once they have reached their lifetime limit of 145 credit hours (120 credit hours or more are required for a bachelor's degree) there is little remaining to pay for lifelong learning. Adults who have reached their limit will have a difficult time going to school to retrain for a new career or keep up with changing technologies. Without the state stipend, even courses at a community college could be considered unaffordable since without the COF stipend, tuition per credit hour is almost double.

Another potential threat to CCA is that COF eligible courses must be college-level. Remedial or developmental courses for students needing to build up their skills in English, math, or

reading are currently not applicable. This is up for review for the 2006 academic year. Over a quarter of CCA's students (29%) require remedial education before they can take college-level classes (Jackson, 2005).

In addition to COF, other state legislation threatens the college even though CCA, plus the other 12 System community colleges, enrolls over 117,000 students, the largest number of students annually in the state (Colorado Community College System, 2004). In fact, the Colorado Community College System is facing serious budgetary challenges. Due to current fiscal crises in the state, funding for higher education has been cut significantly. Even in the boom years of the mid- to late 1990s, Colorado was one of the few states that cut higher education (Center on Budget and Policy Priorities, 2004).

These budget cuts are being caused in large part to the Taxpayer Bill of Rights (TABOR) which passed in 1992. TABOR mandates voter approval for certain changes in tax policy and imposes limits on the amount of revenue that the state can collect and spend, based on population growth and the rate of inflation (Colorado Fiscal Policy Institute, 2004). Because TABOR was passed during good economic times, the effects of a downturn in the economy were not foreseen. Even though the recession is lifting, TABOR has a ratcheting effect on state budgets because mandated state spending formulas cannot keep pace with rising costs. The severe drop in state revenue, coupled with the affects of TABOR (Colorado Fiscal Policy Institute, 2004), caused substantial budget cuts even though

enrollment at public colleges and universities increased by 24% (Center on Budget and Policy Priorities, 2004).

TABOR is not higher education's only legislative threat, however. Amendment 23, which ensures annual budget increases to K-12 education, and the Gallagher amendment, which limits the tax local governments can collect from property, results in a smaller slice of the budgetary pie for higher education, and the piece is getting smaller every year (Center on Budget and Policy Priorities, 2004). Because of Colorado constitutional requirements, such as health care, higher education is one of the few pieces to which the legislature can allocate budget increases or decreases. With the many mandatory increases dictated by amendments like 23, there is little choice but to decrease the budget for higher education. Colorado now ranks 47<sup>th</sup> in its level of taxpayer support of higher education, down from 32<sup>nd</sup> in 1992 (Center on Budget and Policy Priorities, 2004).

As a result, CCA's budget was cut 35% in 2003 (Aurora Sentinel, 2004). These budget cuts resulted in elimination of more than 100 positions through lay-offs, retirements, and resignations (Burns, 2004), forcing reassignment of the remaining job duties to current positions. When duties were reassigned to existing job descriptions, few salary adjustments were made. As a result, college employees are doing more and more with less and less each year. One CCA instructor, who has been voted Faculty of the Year twice by his student, equates his job to "third world missionary work" (Burns, 2004, p. E3) because jobs have been hit so hard there. To add to the strain

of already heavy employee workloads, enrollment growth continues to climb. Fall 2004 enrollment at CCA increased 5% (Community College of Aurora, 2004). While the number of students has increased steadily, CCA's 2004 state funding matches that from 1983, without factoring in increases for inflation (Colorado Fiscal Policy Institute, 2004). Every state higher education institution's challenge, therefore, is to be lean and efficient in order to survive. Using action research is a good way to identify a problem, study the organization, and discover answers while learning throughout the process.

#### *Statement and Importance of the Problem*

CCA is not different from any other state higher education institution in that it must be efficient and effective to survive. CCA is an open-admissions college, which means, with very few exceptions, everyone is admitted who applies. While this makes for a rich, diverse student body, it also poses its own challenges. Because of its open-admission status, mandated by state law, retention and graduation rates appear lower than at admission-controlled colleges and universities (Gabriel et al. n.d.).

Because of open enrollment policies, coupled with low tuition rates, community colleges enroll a high percentage of "at-risk" students who are from minority groups, have disabilities, come from low-income families, or are first-generation college students and have above-average risk of not completing college. In addition, CCA enrolls large numbers of non-traditional students whose retention rates also tend to be

lower than that of traditional students (Gabriel et al. n.d.). A nontraditional student is one who is not coming directly from high school; instead he/she is re-entering the post secondary environment, or perhaps is entering it for the first time at an older age. It is not surprising then that CCA's retention and completion rates, which are required by the Colorado Commission on Higher Education and used as an accountability measure, have appeared low in the past. Although community college rates in general are lower by the very nature and purpose of these institutions, CCA must work to increase these important rates of institutional success.

In order to impact rates and measurements, it is important to know where the data is coming from, what it means, and what standards are trying to be met. Some of the data used for college retention programs from data collected from the initial application for admission form the student fills out when they first enter college. However, the quality of this data when collected is questionable. An anxious, inexperienced first-time student, who also may be nontraditional, could give inaccurate responses to questions on the application form due to confusing questions, or unfamiliarity with college lingo. Often students need help completing the two-sided application form and answering such questions as what is their intent in enrolling at the college; do they want to earn an associate, academic, or vocational degree or do they want a certificate; and what is their program of study. Many of these questions seem unclear or unanswerable for a first-time student. The resulting student

responses, if ambiguous, could be cause data to be incorrectly entered into the database. Therefore, the reliability of this resulting application data is questionable. Sometimes a student will ask for help if he has questions about the form, but often students will not. Coming to a college for the first time can be intimidating, especially when they do not understand part of the form or a question. According to Nadler, (1977) people often respond with what they believe is the answer being sought. So, it is likely that potential students often respond with what they think may be the right answer, or with what they feel is what the institution is looking for, without asking for assistance.

Other examples of confusing questions include one that inquires of students' transfer plans and whether they will be transferring after or before graduation, if they wish to transfer to a 2-year or 4-year school, and what is their planned length of study at CCA. Again, when students are new, they may not know the answers to these questions. When management then analyzes this collected data, the quality is questionable; therefore, the resulting decisions made by administration may not be as effective as they could have been. Action research was selected for this problem because it was a good way to study the admissions process while, at the same time, collaboratively building knowledge while discovering answers.

The admissions process, because it does not automatically offer students support or explanation of application questions unless requested by the student, seems ineffective because the

questions on the application confuse students, student answers that are ambiguous perplex staff wondering how to best record the data, and, as a result, students are often matriculated into incorrect degree programs, along with other "best-fit" data entry errors. When this resulting data is then used for college decision-making and state reporting, errors made by students' and staff's misinterpretations and inaccurate recordings cause the data and reports to be distorted. This process decreases the college's overall efficiency because it is operating on, basing decisions on, and reporting inaccurate data. Therefore, the purpose of this action research project is to determine why the process is ineffective and to determine appropriate methods for improving the process, thereby improving the quality of the resulting data, and increasing the college's overall effectiveness.

#### *Literature Review*

Any barrier to student enrollment hurts retention (Noel-Levitz, 2005). The lack of student-understandability of the application for admission form then is likely to be a barrier to student enrollment because students have a difficult time completing it accurately. By making the application more clear, concise, and understandable, it naturally becomes more student-friendly for new students to complete. As a result, CCA may remove one more barrier to enrollment. By improving the admissions process for students and by improving staff procedures for recording ambiguous data, and thereby increasing knowing-how knowledge, student enrollment should increase, the

quality of resulting data will increase, and rates of student retention, completion, and graduation should follow.

While one of the goals of this project is to improve the application for admission form itself to increase students' understanding and knowledgeable responses to questions, the other goal was is to increase the quality of data that is collected from the admission process. There are two components of quality data. One comes from having a knowledgeable respondent, and the other derives from employees who are knowledgeable not only about the process but also about the why-knowledge behind it (Lee & Strong, 2003). Research has shown that having employees with this knowledge, knowledge that allows them to understand relevant purposes of the data collected, improves quality data as well. "Data collectors with why-knowledge about the data production process contribute to producing better quality data" (Lee & Strong, 2003, p. 13). To contribute to the quality of data collection, admissions staff needs to understand the reasons they collect and store data, and how that data is later used.

#### *Entry and Collaboration*

During my 10 years as an academic advisor at CCA, I have dealt with students who were unsure of the application form many times. In offering my support, I found that often there were no clear-cut selections for some student scenarios, and instead the student and I would mark the answer that best fits his/her situation. Although I have helped many students with the application form over the years, there are many more who neither

I nor other advisors have assisted. The ineffectiveness of CCA's admissions process did not impact or even occur to me until I began my working on developing retention and student success strategies. Once I realized that the college was developing programs and making decisions based on data that resulted from the recorded application data, I began to realize how often even I ended up marking "the best fit". I also thought about how many of my advisees over my tenure had been entered into the database with the wrong program information. The admissions process, and especially interpretation of the application form by students and by staff, could be more effective. After I became director of advising, I felt that I had the appropriate positional power to research and suggest changes to the process.

In order to begin this action research project, I needed to collaborate with the director of enrollment services and the institutional research department. One possible constraint I faced was that the application form itself was used by the Colorado Community College System (CCCS), not just by CCA. This is why the director of enrollment services participation was essential to this project. As a member of the state's registrars' council, she had the authority to consult the council, and if agreed upon, make changes to the state-wide application form. I also needed buy-in from the vice president of student services who would need to see the potential value of this project. I am fortunate that, by the college's very nature, we are a collaborative work team, college-wide. There is very little, especially in the student services area, which is

"untouchable" by anyone in any other department. This environment of collaboration has developed throughout the college in two ways, by the current administration's vision and support, and from the need to function with scarce resources. In CCA's present environment of survival of the fittest, we have to be collaborative to get the job done and, if we have the help and support of other departments along the way, we can be more effective employees. I was fortunate to have their support in this project.

#### Method

Action research is a process which helps to determine the appropriate action to be taken to improve a problem or situation. It helps make action more effective and is a model for planned change (French & Bell, 1999). It also allows for greater collaboration. Through collaboration, a critical component for creating change, employee buy-in, is naturally built into the process. In addition, through team collaboration, joint diagnosis, and joint action, solutions that might not have otherwise surfaced are explored (French & Bell, 1999) and potential bias from the researcher is eliminated.

#### *Action Research Methodology*

According to Cummins & Worley (2001), action research is a collaborative process that applies the scientific methods of fact-finding and experimentation to practical problems that require action solutions. It is an organizational tool to help determine the underlying causes of problems (Models, 2004). To improve the admissions process at CCA, action research was

chosen because exact deterrents from an effective admissions process, along with the best solutions to the problem, are uncertain. By utilizing action research in this case, the most effective and efficient ways to implement changes to the process are discovered.

#### *Action Research Model*

The Cummings and Worley model was appropriate for this action research project because planned change, not only knowledge development, was the major emphasis. This model was also appropriate because it places emphasis on collaboration, aligning with the institutional culture. Through team collaboration, learning and solution finding comes from the participants' reflection on the research process itself (Models, 2004).

Table 1

#### *Action Research Model from Cummings & Worley*

Step #	Activity
Step 1	Problem Identification
Step 2	Consultation with Behavioral Science Expert
Step 3	Data Gathering and Preliminary Diagnosis
Step 4	Feedback to Key Client or Group
Step 5	Joint Diagnosis of Problem
Step 6	Joint Action Planning
Step 7	Action
Step 8	Data Gathering after Action

*Step 1 Problem Identification*

The first step in the Cummings and Worley (2001) model involves problem identification. In order for change to occur, the problem must be clearly defined. The identification of the problem occurred to me all at once, at a retention meeting, where a report with application data was being analyzed to make program decisions. Prior to this meeting, my naïve assumptions had been that this data, although unreliable, probably did not have that much significance to the college. An "ah-ha" moment came over me as I realized that this data did matter, and I knew that efforts to clean up the quality of that data would reach institution-wide. I knew that action research would be a valuable way to learn about the institution while finding solutions to this complex problem.

*Step 2 Consultation*

My next step was that of consultation. I presented this problem to the director of the enrollment services to get her feedback. She agreed that the process should be examined and that's when I approached her with the benefits of action research, its processes and values. Together, we agreed to pursue this project and began to select members to become part of our collaborative team. By the end of our meeting, we had created project expectations to improve the application process and to learn more about our students. For final approval, I met with the vice president of instruction and student services, and he agreed that this would be a valuable project for the college.

*The Collaborative Team.* The collaborative team for this project included four members of the institution who have a vested interest in this specific problem. Members included the director of enrollment management, lead admissions specialist, director of institutional research, international student academic advisor, and project researcher. Team members were chosen based on their expertise, experience, their power to create change within the organization, as well as their previous teamwork experience. In addition to the immediate team, the admission and advising departments were also asked to participate. Because the foundation of action research is itself based upon collaborative problem solving (Coglan & Brannick, 2002), this collaborative team was an integral part of the project. The collaborative nature of the student services department at CCA assisted the team members in working well together.

The team was assembled to discuss the project, the process and value of action research, and to develop a timeline for the project. I, along with the director of enrollment services, presented the project to the team, as well as the problem, and the action research process and its value. Although the team seemed open to the project, there were several team members who expressed concerns about the time commitment involved, specifically time during an already hectic period.

### *Step 3 Data Gathering & Preliminary Diagnosis*

The team met to decide upon data gathering methods and techniques to use in this project. Although data gathering

methods had been predetermined, the final methods needed to be decided by the team.

The team discussed a time strategy for gathering data, and developed a timeline for collecting the data. It seemed logical to the team that we should utilize the first week of August, during one of the busiest times of the year, because there would be a high level of student activity. It was agreed that this would be an optimal time for data gathering because there would be high student traffic because registration was in process and there would be large numbers of students completing applications on-site. The challenge was going to be finding enough staffing resources dedicated to observing students during a busy time.

Next on the agenda was to decide upon which data gathering methods to use and to begin designing them. Predetermined methods using observations, interviews, and secondary data were changed due to time and staff concerns expressed by several members of the team. The decision was made to use student and staff questionnaires instead of interviews because they would be more effective and efficient. Moving forward as a team, we listed what we thought were the most confusing questions, and then built our observation recording forms and staff and student questionnaires around these questions (Appendices A - D).

*Questionnaires.* For this project, custom-designed questionnaires were deemed most appropriate because the issues to be addressed were narrowly defined (McClelland, 1994). Questionnaires would be used to gather data from students who had recently completed an application. In addition,

questionnaires for staff recording application data would be used to gather data about their perceptions of the application's effectiveness, as well as the procedures they used with ambiguous data. The questionnaire method was deemed most appropriate by the team because it used limited resources while reaching a large population. It was also less time intensive than other methods such as on-site interviews. The disadvantage of questionnaires over interviews is that some flexibility is compromised. It was decided by the team that the questionnaires would be distributed during the same period in August, with a two week return deadline. Then, they would be collected and tallied by the researcher in order for a preliminary diagnosis to be made, in agreement with the project model.

*Observations.* The team agreed to use observation as another method of data gathering for this project. The observer and data-collector would observe and collect data on individual students as they completed the application on-site. The method of observation was particularly valuable in this case because it removes one possible bias of the report of the responder, in this case, the report of the student. This method is most effective because the data is collected from a primary source and the particular process can be observed (McClelland, 1994).

Because the application process also leads to uncertainty for staff, staff members would also be observed as they entered application data into the student information system database. Again, observation was the best method because data could be

collected directly, leading to validity and unbiased responses from respondents.

Since applications could also be completed on the web, it was impossible to observe these students as they completed the application, so an alternative method of data collecting needed to be utilized to eliminate a potential element of bias by gathering data from only one modality of submitting applications.

By using both the observation and questionnaire data gathering methods, source triangulation and validity were ensured (Triangulation, 2004) because project data resulted from a variety of gathering methods. Qualitative research is strengthened by using triangulation, a technique where multiple methods are used to research the same problem (Gill & Johnson, 2002). Content validity can be established by asking the subject matter experts if the instrument represents the traits that are intended to be measured (Fink & Kosecoff, 1998). Therefore, content validity of each method was achieved by collaborative design by the team, eliminating potential bias. Questions on each data gathering instrument were selected by the team as being the most misunderstood by students, and matched the wording of questions on the admissions application.

Disadvantages of the observation method included observer difficulty in accurately recording data, and effects that the observer might have had upon the student or staff's behavior.

*Secondary data.* For the final method of data gathering, the team agreed to use secondary data. Secondary data, retrieved

both from the institutional database and from hard-copy application forms, the primary document source, were tallied and analyzed to see how accurately the two data sources paralleled each other. This analysis could uncover inconsistencies in data reporting that were occurring, and offered another aspect of triangulation by using two data sources.

For the secondary data gathering method, the sampling period was the same time period as used for the observation and questionnaire methods. Since much of the data reporting and gathering would be expensive in terms of time spent, the shortest period of time that could result in a valid result was most appropriate. By using a collaborative team to determine the time period, biases from one researcher were less likely to alter this method of data gathering.

Almost immediately after the data was compiled, a preliminary diagnosis was formed. It was made by simply leafing through the questionnaires and observation forms collected. The students' responses to the student questionnaire were shocking. Surprisingly, students had responded that the application for admissions form was easy to complete. This response did not match previous anecdotal evidence at all. Interestingly and somewhat reassuringly however, upon review of the student observation forms, observers had identified the same questions that the collaborative team had chosen as being unclear to students. However, from preliminary diagnosis, the validity of the project was in question, along with the worthiness of taking

team members' valuable time, especially when they had expressed concerns already.

### Results

As previously discussed, the collaborative team agreed upon five methods of gathering data for this project: questionnaires of students and staff, observations of students and staff, and secondary data. The data was collected and tallied and a preliminary diagnosis was made (Step 3), and the summarized data was presented to the collaborative team for a joint diagnosis (Step 4 & 5). Here, the results of each data gathering method are revealed in more detail below.

#### *Findings from questionnaire of students*

The purpose of this questionnaire was to ask students about completion of the overall application form as well as about six questions in particular, asking them to rate the clearness or difficulty of each on a 5-point scale, with 5 being very difficult to complete or very unclear. The survey questions were decided upon collaboratively by the team, and included: (1) what is your educational intent: academic or vocational, (2) what is your program of interest: a degree, a certificate or neither, (3) do you consider yourself economically disadvantaged, (4) do you consider yourself academically disadvantaged, (5) do you intent to transfer and if so, before or after graduation, and (6) what is your planned length of study at CCA: a semester, a year, 2 years or more? For consistency, the same questions were used in the project's student observation data gathering method as well.

The results tabulated from this questionnaire gave the team the biggest surprise with 100% responding that the application form was from very easy to somewhat easy to complete, with only 10% responding that it was somewhat easy and 90% responding that it was very easy or easy. When asked about the six particular questions on the application form, only 20% identified two of the questions as unclear or very unclear (do you consider yourself academically or economically disadvantaged), and 10% identified two of the questions as unclear (do you intend to transfer, and if so, before or after graduation, and what is your program of interest: a degree, a certificate or neither) .

#### *Findings from observation of students*

The purpose of student observations was to study first-hand the behavior of students while completing the application form. Students were observed while they completed the form on-site, during registration for the fall semester. Again, for consistency, validation and triangulation of results, the observer recorded observations about the same items that student questionnaires addressed, including the overall ease of completing the application form, and clearness of the six identified questions on the same 5-point scale.

The observation summary revealed results that were expected by the team, although still somewhat surprising overall. This time, 40% of the students were observed as having a difficult time completing the application form, with 30% having a somewhat easy time, and 30% reported as having an easy time. Still, the

majority of students (60%) were having a somewhat easy to easy time.

In response to the six particular questions on the application form, a majority of students (60%) were unclear about two of the questions, whether students considered themselves academically or economically disadvantaged, and 50% were unclear about their planned length of study at the college. Observers reported that the other questions seemed clear to students.

#### *Findings from questionnaire of staff*

The purpose of the questionnaire of staff was to collect data from staff about their experiences with students when completing the application form. Staff members who regularly assisted students and entered the resulting data into the student database system were asked to complete the questionnaire. The questionnaire asked about helping students with the application form, and, specifically, to identify questions on the form that they thought students had the most difficulty with, what made those questions difficult, and if there was an appropriate selection or response in most student scenarios. The second part of the questionnaire asked staff about entering application data, and specifically what they do if a student's response is unclear or blank, and if they had an understanding of how the data was used by the organization.

Results of the questionnaire did not identify any one question that most students needed help with, nor reasons why. When entering data into the database, the majority of staff

responded that they contact the student when a question is blank or unclear, and that there is usually a selected response that fits most student situations. However, only 14% of staff responded that they understood how the institution used application data.

*Findings from observations of staff*

The purpose of staff observations was to observe the ease of data-entry, on which questions students asked for assistance, on which questions staff asked students for further information, and what staff did if they seemed unsure about a response or procedure.

Results of staff observations showed that the majority of students (85%) did not ask questions of staff about the application questions, but that the majority of staff (57%) asked students questions to clarify their application response. The observation did not identify any particular question that was troublesome for either staff or students, and verified that most staff (67%) asked students for clarification when unclear about a student's response.

*Findings from secondary data*

The purpose of gathering secondary data was to compare student responses to the information that was entered into the student database system. A tally of instances when the application and the database differed was recorded. Again, for consistency, the same questions on the application form were examined using this method.

Tallied results showed that data regarding the students program of interest varied from application to database 40% of the time. Data regarding the question about academic disadvantage ness differed 10% of the time. In all other areas examined, the data in the student information system database matched the student's application copy.

#### Discussion

##### *Step 4 Feedback to the Collaborative Team*

Even though the preliminary diagnosis created doubts concerning the value of this project, the summarized data from each data gathering instrument was distributed to the collaborative team for joint diagnosis (Cummings & Worley, 2001). Although my devotion to the project was, at best, shaky at this point, I knew the team must make a joint diagnosis to eliminate my potential bias while at the same time opening the project up to new ideas and theories. Joint diagnosis would also create employee buy-in through collaborative teamwork, complementing CCA's culture.

##### *Step 5 Joint Diagnosis*

In quite another surprise, after examining the data results, the team decided to continue with the project. Since we had chosen a short period in which to collect the data, the team was disappointed with the low numbers of data collected. During the week-long collection period, 10 students responded to questionnaire forms and 10 student observations were completed. During this same period, seven staff responded to questionnaires and seven staff observations were made. In secondary data

gathering, 10 student application forms were compared with the student information system database. While the numbers were lower than expected, the real purpose action research was re-examined. Action research, according to Coglán & Brannick (2002), is not to be able to necessarily replicate the results, but to reveal a story. What was important was that the team needed to be comfortable that there was enough data to tell that story. In considering the time constraints of extending the data collection period coupled with the consistency of existing data, the team decided that the project would continue.

Several members were intrigued that students had answered questionnaires generating these results, after having assisted students many times before with the application form. The form's questions confused students, the group agreed from personal experiences, but perhaps their puzzlement did not bother them as much as we had anticipated. Our joint diagnosis after looking at the resulting data was that students were not affected, or hampered from applying by the form itself, but that the process could still be improved to result in higher quality and consistency of data.

#### *Step 6 Joint Action Planning*

The team's joint diagnosis led to step six of this model which is joint action planning. The collaborative team met again to review the results of the data gathering methods and to agree upon further actions to take. Three possible interventions arose and included: (1) not changing the application form or the process, (2) changing the application form as well as the

process, or (3) not changing the application form but changing the process. The assumed outcome before data gathering began was that the application questions themselves would be reworded somehow to become clearer to first-time students. However, the team agreed that, in light of data results, the application form should not be changed at this time because 100% of students found it easy to complete, and only four questions were identified unclear by a small minority of students.

Other actions planned by the team centered on the remaining significant data findings resulting from the staff questionnaire and the tally of secondary data. The staff questionnaire showed that 50% of staff was unaware of how application data was used by the organization and that 40% of the programs of interest indicated by students on their application form differed from the program entered into the student information database. These results led the team to conclude that the best intervention for the organization would be to not make changes to the application form, but to make changes the process.

The team decided the best changes to make to the process would be to increase staff's why-knowledge by offering specialized training complete with examples of how the college uses the application data. By offering further staff training, the team felt that it could easily enhance workers' why-knowledge of the application data-entry process, and that this would increase the quality of data collection.

As a team, interventions were quickly identified. It was decided to: (1) not make changes to questions on the application

form, (2) offer further staff training raising levels of why-knowledge, and (3) create a program matrix for consistency of data entry. The team worked well together and came up with resolutions quickly. This is likely attributed to CCA's collaborative organizational culture, the previous teamwork experiences of the team, and in addition, the limited amount of resources needed for the actions planned. In fact, according to Cummings and Worley, often the action decided upon depends upon the culture, environment, and resources available to the organization.

#### *Step 7 Action*

To increase staff's why-knowledge, the team decided to offer staff trainings on this topic. To train admissions staff quickly and effectively, the director of enrollment services suggested that mini-training sessions be incorporated into several of her bi-weekly staff meetings, covering one example of how the organization uses application data each meeting. By training staff in this way, she could manage who receives the training, answer staff questions immediately, and emphasize the importance of this data by revisiting it periodically. As a result, staff would be able to assist the organization in capturing the highest quality data possible. The team agreed that this was an appropriate action that would bring immediate improvement in data quality.

To create consistency in program data, the team decided to create a program matrix for staff to use for ambiguous programs, programs not offered by CCA. The lead admissions specialist

wanted to take on this task to maintain a spreadsheet listing commonly encountered programs with the corresponding data-entry response, adding new programs as they were encountered by staff. The team agreed that this was an appropriate action that would also bring immediate improvement in data quality.

#### *Step 8 Data Gathering After Action*

The final step in the Cummings & Worley model continues the cyclical process of action research, with the data gathering in step eight resulting in measurement and evaluation. The team discussed plans for this step which may include further secondary data gathering to see if indeed the quality of data has improved, and further staff questionnaires to see if their why-knowledge has increased. It is quite possible that this step could result in re-diagnosis and new action (Cummings & Worley).

Continued research could also result in re-diagnosis and new action. It would be valuable to meet with colleagues within CCCS, including directors of institutional research, and recruiting to elicit their feedback, to see if in fact, their responses vary from that of the directors of admissions and advising on this issue.

#### *Project Review*

There were two goals of this action research project. One was to determine whether improvements were necessary to the application of admission form itself, increasing its understandability by students. The other was to increase the quality of resulting data entered into the student information system database. The first goal is a project success. The team's

decision not to change the application form itself was a result of careful data gathering that included triangulation along with collaborative teamwork to eliminate bias. Without this action research project, resources would have been spent on blindly changing the form without data to guide those changes. The other goal of the project, to increase the quality of application data, is believed to have been met and will be verified by data gathering after action. The increase in quality data will result in higher success measures for the college.

For future action research projects, I would allow more time for data gathering. Originally, the timeline called for data gathering during January; however, our data gathering materials were not complete. To select another period of high student traffic on-site meant postponing data gathering until August. During the delay, enthusiasm for the project waned for the team. In addition, I would also pay more attention to the period of time used for data gathering. In selecting the project's time period, consideration was given only to the amount of student activity, not to the demands placed on students and staff. Students and staff felt they had little spare time to devote to a survey or observation, while observers spent much of their time assisting students with registration instead of dedicated observation.

In addition, data gathering instruments would be designed more carefully and rigorously tested for content validity through pilot testing, leaving less room for assumption. In this project, application questions were identified by the team as

being unclear to students and staff, however, what was not measured was if this uncertainty resulted from a lack of understanding of the question itself, or an uncertainty of the answer at that point in time.

Lack of primary research is an area of weakness in this project. If the methods of research had been expanded in step 2, consulting with experts, the resulting steps including preliminary diagnosis, feedback to the client, and data gathering and joint diagnosis could have been much different. During conversations with peers following this project, I have discovered that a doctoral thesis is the source of some of the team's identified questions. Although the author of the thesis, a former CCCS director of institutional research and planning, his questions on the application remain, and it would be useful to learn more about his thesis, including what is being done with the data it still collects.

Another method of research would be to examine other community college application forms to note their similarities and differences. While adding these methods of primary research to my project would have added value, perhaps it is part of the action research process that brings clarity to the best next steps, continued learning, and problem resolution.

#### *Unforeseen Benefits of Action Research*

The knowledge gained from an action research project can be far-reaching into future projects. On July 1, 2006, the college will be moving to a new student information system called Banner. In fact, Banner will be used by all of the colleges

within the Colorado Community College System. An Enterprise Resource Planning (ERP) team, consisting of one or two representatives from several member colleges, is currently meeting to build the new database system to meet current community college data needs. I was selected by the CCCS vice presidents to represent CCA, and to work on an admissions sub-team. The sub-team's tasks have included reviewing all System college processes, and suggesting new procedures, as well as creation of a new application for admission form. The knowledge and experiences gained from this action research project are invaluable in this endeavor, and I am able to present issues brought forward from this project to our ERP team. The sub-team's actions will affect the admissions processes for the CCCS system for the next twenty years or more.

Action research is a good way to build knowledge, and discover answers, while eliminating bias. Action research can also help leaders become agents for change to help higher education navigate the rough waters ahead. The need for colleges and universities to be strong, efficient, and effective is evident, and the cry for creating even greater student success will never end. Opportunities and challenges will always remain, but the final prize at the end of the struggle is clear to see. It is the student.

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## Appendix A

## Observation Recording Form for Students Completing the Application for Admission Form at CCA

The purpose of this observation session is to discover new ways to make our admissions process easier for students and more effective for our college. Students will be observed while they complete the Application for Admissions form on-site. Your thoughtful recordings are vital to this project. The more detailed your observations are, the more helpful they will be. Student confidentiality will be maintained and will only be reported in a group format.

1. Overall, rate how easy the form seems for students to complete.

1	2	3	4	5
Very Easy	Easy	Somewhat Easy	Difficult	Very Difficult

2. Which of the questions below seem difficult for students to answer?

a. What is your educational intent: academic or vocational?

1	2	3	4	5
Very Clear	Clear	Somewhat Clear	Unclear	Very Unclear

b. What is your program of interest: a degree, a certificate or neither?

1	2	3	4	5
Very Clear	Clear	Somewhat Clear	Unclear	Very Unclear

c. Do you consider yourself economically disadvantaged?

1	2	3	4	5
Very Clear	Clear	Somewhat Clear	Unclear	Very Unclear

d. Do you consider yourself academically disadvantaged?

1	2	3	4	5
Very Clear	Clear	Somewhat Clear	Unclear	Very Unclear

e. Do you plan to transfer and if so, before or after graduation?

1	2	3	4	5
Very Clear	Clear	Somewhat Clear	Unclear	Very Unclear

f. What is your planned length of study at CCA; a semester, a year, 2 years, or more?

1	2	3	4	5
Very Clear	Clear	Somewhat Clear	Unclear	Very Unclear

3. If they asked you for assistance, were you able to find an acceptable selection on the form that fits their situation?

4. Approximately how long did students take to complete the form?

5. Is there anything else you observed?

Thank you for your assistance! Please return this form to Libby, C108.

## Appendix B

**Observation Recording Form for Staff Entering Data  
from the Application for Admission Form at CCA**

The purpose of this observation session is to discover new ways to make our admissions process easier for students and more effective for our college. Staff will be observed while they enter the data from the Application for Admissions form on-site. Your thoughtful recordings are vital to this project. The more detailed your observations are, the more helpful they will be. Staff confidentiality will be maintained and will only be reported in a group format.

1. Was the data-entry process efficient for the staff member?
  
  
  
  
  
  
  
  
  
  
2. Did the staff member ask the student any clarifying questions about the application?  Yes  NO  
If Yes, were the questions regarding the questions below?
  - a. What is your educational intent?  Yes  No
  - b. What is your program of interest?  Yes  No
  - c. Do you consider yourself economically disadvantaged?  Yes  No
  - d. Do you consider yourself academically disadvantaged?  Yes  No
  - e. Do you intend to transfer and when?  Yes  No
  - f. What is your planned length of study at CCA?  Yes  No
  
  
  
  
  
  
  
  
  
  
3. Did the student ask staff any questions about the following questions while it was being entered?  Yes  No  
If Yes, were they about the questions below?
  - a. What is your educational intent?  Yes  No
  - b. What is your program of interest?  Yes  No
  - g. Do you consider yourself economically disadvantaged?  Yes  No

- h. Do you consider yourself academically disadvantaged? \_\_\_\_Yes \_\_\_\_No
- i. Do you intend to transfer and when? \_\_\_\_Yes \_\_\_\_No
- j. What is your planned length of study at CCA? \_\_\_\_Yes \_\_\_\_No

4. Did the staff member seem unsure about any of the student's responses on the application? \_\_\_\_Yes \_\_\_\_No

If Yes, what did they do?

- a. ask the student for clarification
- b. ask another staff member for instructions
- c. ask the supervisor what to do
- d. enter what they thought fit best

5. Is there anything else you observed?

Thank you for your assistance! Please return this form to Libby, C108.

## Appendix C

## Survey Questions for Students Completing the Application for Admission Form for CCA

The purpose of this survey is to discover new ways to make our admissions process easier for students and more effective for our college. Your input in this project is vital. Individual answers will be kept confidential and will only be reported in a group format.

### Completing the Application for Admissions form

1. How easy was the form to complete?
 

1	2	3	4	5
Very Easy	Easy	Somewhat Easy	Difficult	Very Difficult
  
2. Were the questions on the form clear to you?
  - a. What is your educational intent: academic or vocational?
 

1	2	3	4	5
Very Clear	Clear	Somewhat Clear	Unclear	Very Unclear
  
  - b. What is your program of interest: a degree, a certificate or neither?
 

1	2	3	4	5
Very Clear	Clear	Somewhat Clear	Unclear	Very Unclear
  
  - c. Do you consider yourself economically disadvantaged?
 

1	2	3	4	5
Very Clear	Clear	Somewhat Clear	Unclear	Very Unclear
  
  - d. Do you consider yourself academically disadvantaged?
 

1	2	3	4	5
Very Clear	Clear	Somewhat Clear	Unclear	Very Unclear
  
  - e. Do you intend to transfer and if so, before or after graduation?
 

1	2	3	4	5
Very Clear	Clear	Somewhat Clear	Unclear	Very Unclear
  
  - f. What is your planned length of study at CCA: a semester, a year, 2 years or more?
 

1	2	3	4	5
Very Clear	Clear	Somewhat Clear	Unclear	Very Unclear

3. If you asked for assistance in completing the application form, please rate the assistance you received.
- |            |       |                |         |              |
|------------|-------|----------------|---------|--------------|
| 1          | 2     | 3              | 4       | 5            |
| Very Clear | Clear | Somewhat Clear | Unclear | Very Unclear |
4. For those questions that were unclear to you, which answer below best describes what you did next?
- Choose the selection that best fit
  - Left it blank
  - Asked for help
  - Guessed
  - Looked for more information
5. If you left any questions unanswered, was it because:
- you chose not to answer
  - you couldn't get help
  - you didn't understand the question
  - there wasn't an answer that fit
  - you needed more information before you could answer

Thank you for your time and information! Please return to Libby, C108.

## **Survey Questions for Admissions and One-Stop Office Staff**

The purpose of this survey is to discover new ways to make our admissions process easier for students and more effective for our college. Surveys should be completed by staff that regularly help students with the application for admission form and record the data into the student information system database. Their input in this project is vital. Individual responses will be kept confidential and will only be reported in a group format.

### **Helping students with the application for admission form**

1. Which questions on the application do you regularly need to help students complete?
2. For each section you mentioned, what do you think makes these areas difficult for students?
3. When you help students with these areas, does it seem that there is always a clear-cut selection on the application, or do you pick the closest one to their situation? If possible, list some examples that you have run into.

### **Entering the application for admission data into the SIS database**

4. When a student has put down information that isn't correct (i.e. a program that we don't offer), how do you decide which information to enter into the computer?
5. Can a student leave an answer blank if they don't know, or their situation doesn't fit? If not, what do you do then?
6. Is there agreed upon default data to use in instances where students' answers are unclear (i.e. programs that we don't have, they are unclear about their intent, etc.)? If so, what?

7. Do you know how data collected from the application form is used by the institution?

That concludes our questionnaire. Thank you for your time and information, and mostly, for your dedication to our students.

(Please return this form to Libby, C108)