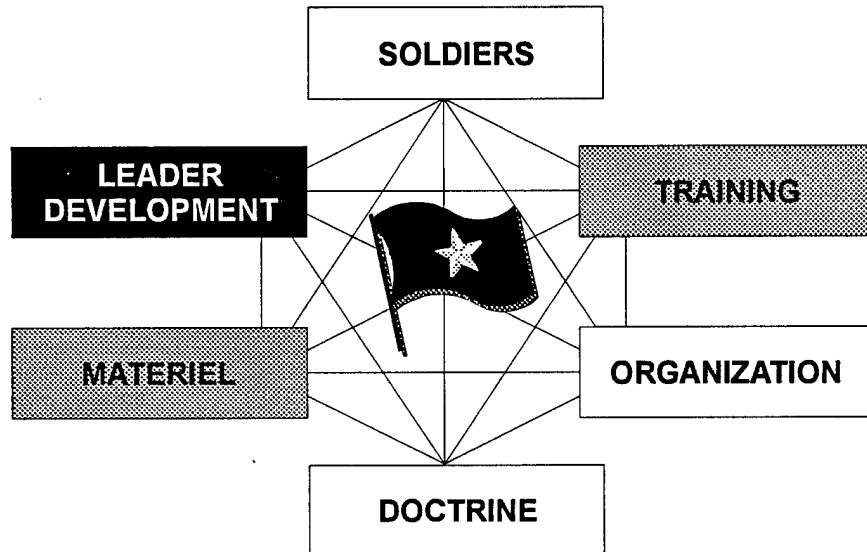


Leader Competencies: Implications for Force XXI



**FY 95 Mobile Strike Force
Battle Command Experiment**

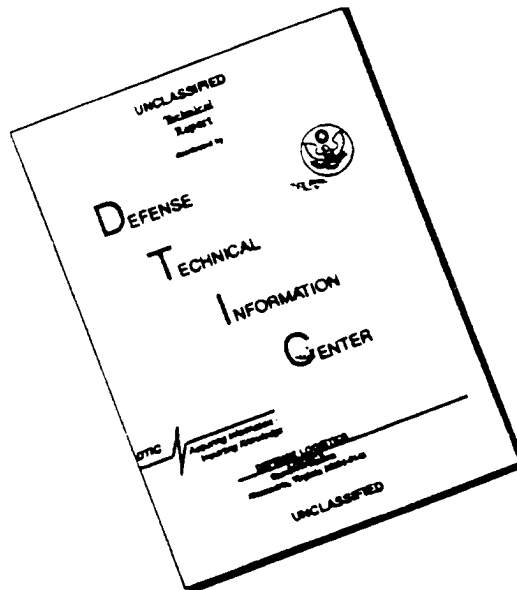


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Introduction

The unprecedented challenges of transitioning to the fighting force of the 21st Century are reflected in the Army's comprehensive focus on the Force XXI axes: the Table of Organization and Equipment (TOE) Army (usually designated as the Joint Venture axis); the Institutional Army; and digitization, the principal enabler of change. Identifying requirements to achieve Force XXI objectives will enable the Army to meet the challenges it will face ahead. As with the past 100 years, technological advances are key to the Army's ability to field and maintain a superpower force. However, an intangible but critical part of the future "digitized" and "technology-based" force is the leadership that will make the force of the future work. No matter what great technological advances are made, the Army will need leaders who understand the capabilities of advanced systems and can employ them effectively within the unit context. The competencies or skills, knowledge, and behaviors that leaders exhibit will be equally, if not more important than future technology. But how do we define requirements for leader competencies and set an azimuth for future leader development?

Objectives

In support of the Battle Command Battle Laboratory (BCBL) and the Prairie Warrior Mobile Strike Force 1995 Advanced Warfighting Experiment (PW/MSF 95 AWE), leader development requirements for Information Operations (IO) were examined by the Training and Doctrine Command (TRADOC) Analysis Center (TRAC). The investigation was conducted during the Fiscal Year (FY) 95 Mobile Strike Force Battle Command Experiment (MSF/BC 95), a subordinate component of the PW/MSF 95 AWE. Two types of requirements were examined - those which are related to the leader competencies and those related to leadership development pillars. The specific study issue and essential elements of analysis (EEA) are shown below.

What are the observed leader development requirements for Information Operations?

- ♦ *EEA: What are the observed and perceived changes in the importance of current leader development competencies with the implementation of IO?*
- ♦ *EEA: What shifts in institutional, operational assignment, and self development activities - the pillars of leader development - may be required to fulfill IO-oriented requirements for leader development?*
- ♦ *EEA: What are the potential significant changes in leader development requirements as a result of employing envisioned IO concepts and capabilities?*

The paper describes the methodology, analysis results, conclusions and recommendations for Force XXI leader development as shown here.

Methodology

The methodology used in this investigation consisted of literature search, written surveys and interviews. These approaches are explained below.

Literature Search. In addressing the leader development requirements for IO, the study team researched past and current doctrine, future concepts, and leader development studies, and throughout these sources found strong ties to the set of nine competencies shown here.

These nine leadership competencies, developed in 1976 following a study of leaders from corporal to general, were specifically listed in Field Manual (FM) 22-100, *Military Leadership*.

While it is possible this set might actually change in the future, it is more likely some of the competencies will shift in importance or become more difficult to acquire, or be affected positively or negatively with the onset of digitization. The team speculated that some competencies, such as professional ethics, would not be affected by digitization. Given an expectation of continuity in the competencies to the future by Army concept developers, the analysis was then structured to determine if shifts in the importance or difficulty of acquiring any of the nine competencies might be expected in an IO environment.

Survey and Analysis Approach. To support this investigation, TRAC focused on the Command and General Staff Officer Course (CGSOC) class of 1995 and specifically the 73 individuals in the A308, Battle Command Elective (BCE) comprising the command and staff elements of the Mobile Strike Force (MSF), a notional unit used for Force XXI experimentation. The BCE program of instruction included tactics, fire support, intelligence, reasoning skills, and guest lectures, as well as three simulation exercises (SIMEXs) and the Prairie Warrior Exercise. The MSF utilized several information technologies during the SIMEXs including the Phoenix system, a planning and situational awareness tool used to investigate future decision support requirements and capabilities.

- Introduction
- Objectives
- Methodology
 - Literature Search
 - Survey and Analysis Approach
 - Interviews
- Results
 - Pre-exercise Survey
 - Post-exercise Survey
 - Implications for Future Leader Competencies
- Conclusions
- Recommendations

Nine Leader Competencies

- Communications
- Supervision
- Teaching and Counseling
- Soldier Team Development
- Technical and Tactical Proficiency
- Decisionmaking
- Planning
- Use of Available Systems
- Professional Ethics

Surveys were administered both to the MSF students in the A308 course and to a control group in CGSOC, at the beginning and end of the Battle Command Elective. Students

Competencies Survey	Pre-exercise survey	Post-exercise survey
MSF students	<ul style="list-style-type: none"> ◆ Importance ◆ Difficulty of acquisition 	
CGSOC control group	<ul style="list-style-type: none"> ◆ Contributing pillars 	

conducted pairwise comparisons to rank the importance of each of the competencies and the difficulty future officers would have acquiring them. The MSF students, through their exposure to advanced information technologies during A308, served as the experimental group to gauge the effects of experiences in a digitized environment on these judgments. The control group was taken from the CGSOC student body at large and with the same branch structure as the experimental group. The purpose of the control group was to confirm whether BCE students' skills, knowledge and behaviors are representative of the CGSOC student body at large, and whether the judgments of the control group were influenced by the more traditional CGSOC curriculum.

Supplemental instructions asked students to block out any forced rankings based solely on Army professional standards when developing their judgments. For example, professional ethics did not necessarily have to be placed first due to its nature and placing it last does not mean it is not important as a competency. The rankings only express individuals' unique experiences with the competencies and their effect on individual performance.

Prior to conducting the pairwise comparison process, students completed a simple ordinal (1 through 9) ranking of competencies by importance and by difficulty of acquisition. These rankings simply provided a means to maintain a degree of consistency in the more detailed pairwise comparisons and are not discussed in the findings. The responses to the pairwise comparisons were evaluated using the Analytic Hierarchy Process, a structured approach to problem solving which leads to a mathematical expression of the relationship among the examined variables. The result is a ratio scale ranking which illustrates meaningful differences from one competency to the next.

The post-exercise survey responses of the BCE class regarding importance of the competencies were also examined using cluster analysis to establish distinct sub-groupings based on the closeness of the comparison components, and discriminant analysis to determine if any other characteristics could distinguish the groups from each other. Sub-groups were established, but a discriminator for the groups did not exist among the variables analyzed.

Students were also asked to indicate the leadership development pillars that contributed most to each competency's development. The three leadership development pillars are:

- ♦ **Institutional Training** -- Formal education and training all officers receive in preparation for service as leaders with operational units (e.g., Basic and Advanced Courses, CGSOC, Pre-Command Course, War College).

- ♦ **Operational Assignments** -- Actual leadership positions to build upon the skills learned during formal education (e.g., basic branch assignments, company/battery command, field grade positions).

- ♦ **Self-Development** -- Self-improvement aimed at filling the professional gaps left from the institutional training and operational assignments (e.g., reading program, self-assessment, informal discussions, correspondence courses, off-duty civil schooling).

An analysis of the responses to the leader development pillars addressed frequency and value of contribution.

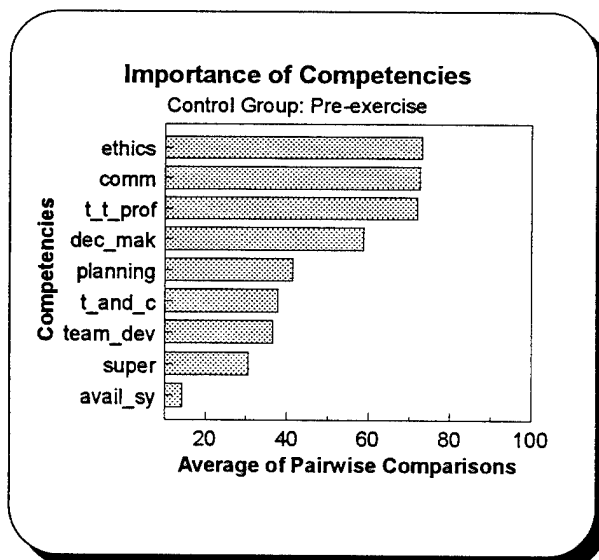
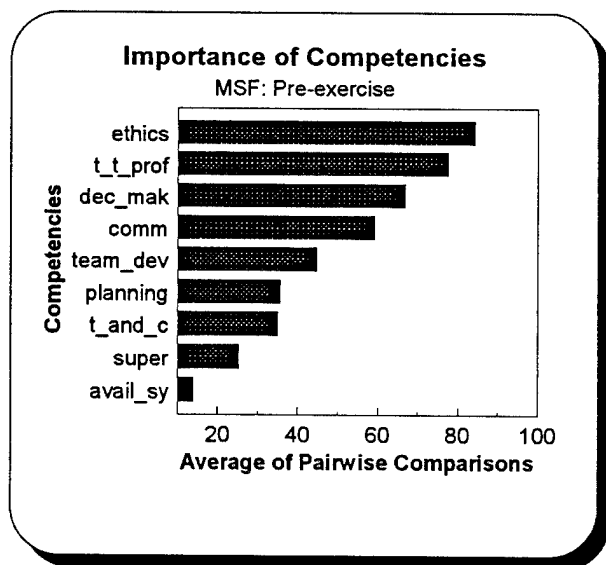
Interviews. Subsequent to a graphical analysis of survey results, MSF, control group, and CGSOC students at large were interviewed during Prairie Warrior to gain further insight into the rationale for changes seen in rankings of the competencies.

Results

This section discusses separate results of the pre-exercise and post-exercise surveys, followed by an integrated analysis of survey results and interviews addressing implications for future leader competencies.

Pre-Exercise Survey. This section addresses overall results of importance and difficulty rankings of leader competencies and contribution of pillars from the initial survey of MSF and control group students.

Importance of Competencies. Relative rankings of competencies by the MSF and control group are illustrated below. Higher values mean higher importance.



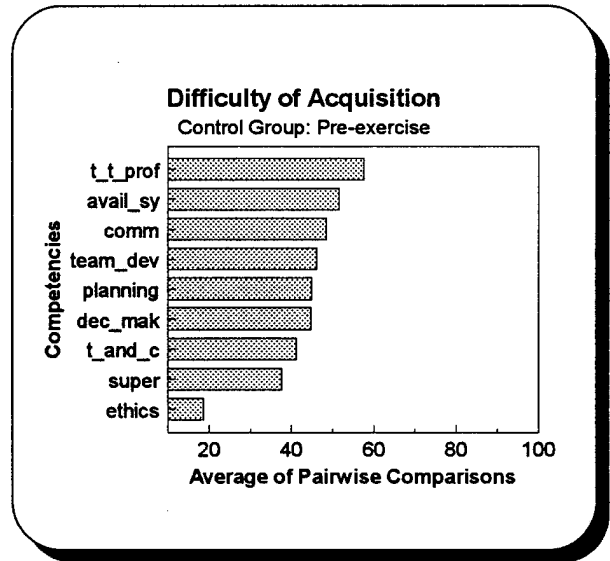
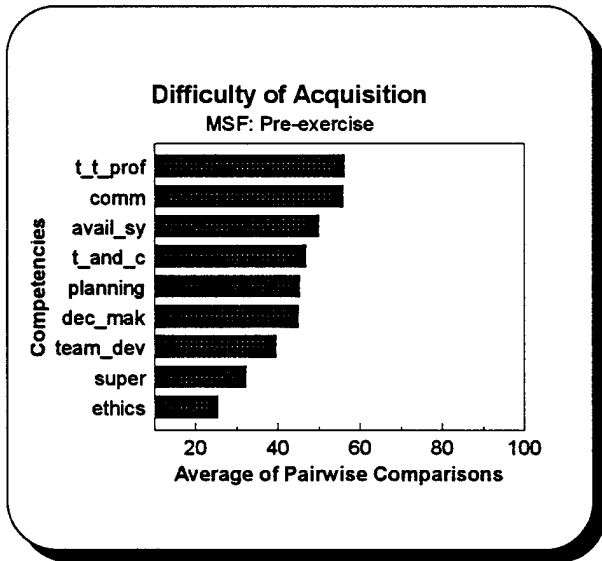
While there are some small differences in individual rankings made by the MSF versus the control group, both sets of students seemed to split the competencies into two distinct groups. The four competencies that comprise the upper, or more important, competencies are professional ethics, communications, technical and tactical proficiency, and decisionmaking.

- High Importance**
- Professional Ethics
 - Communications
 - Technical and Tactical Proficiency
 - Decisionmaking

- Lower Importance**
- Supervision
 - Teaching and Counseling
 - Soldier Team Development
 - Planning
 - Use of Available Systems

The remaining competencies, supervision, teaching and counseling, soldier team development, planning, and use of available systems fell in the lower importance grouping. It is of interest that **use of available systems** is found in this lower grouping; a hypothesis was formulated that a shift upwards in this competency might result from the BCE experience and the use of the Phoenix system.

Difficulty of Acquiring Competencies. The rankings obtained from pairwise comparisons of difficulty to acquire competencies are shown below for the MSF and control group.



- High Difficulty**
- Technical and Tactical Proficiency
 - Communications
 - Use of Available Systems

Again, while there were some individual differences in ranks between the two sets of respondents, the competencies generally fell into three groups. Students indicated technical and tactical

proficiency, communications, and use of available systems were the most difficult competencies to acquire. In the middle were decisionmaking, soldier

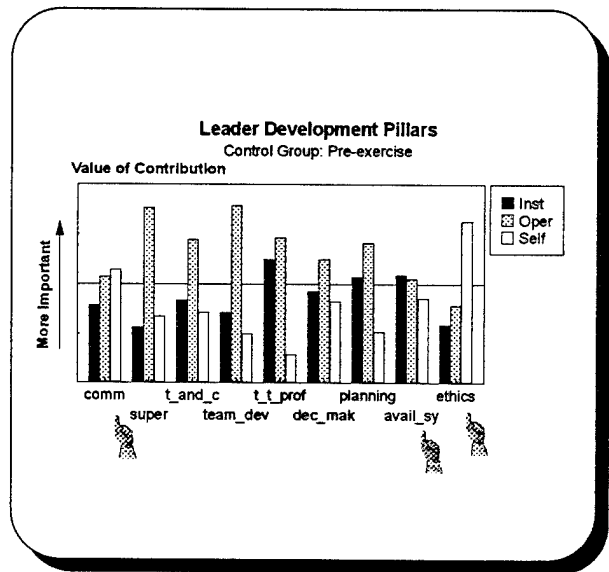
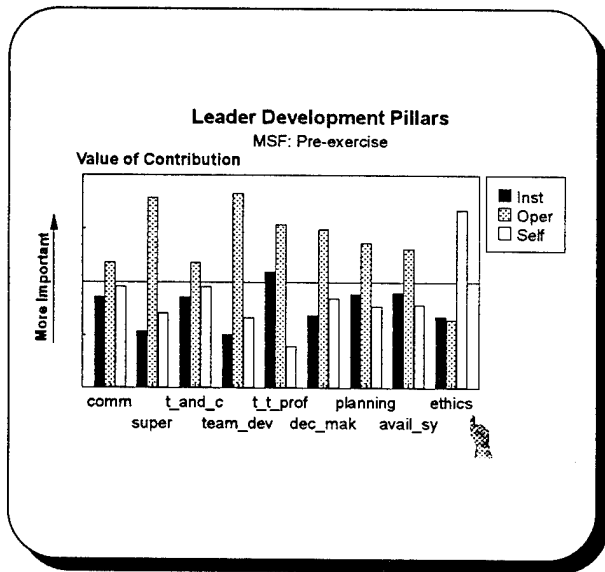
- Medium Difficulty**
- Decisionmaking
 - Soldier Team Development
 - Planning
 - Teaching and Counseling

team development, planning, and teaching and counseling. Finally, two competencies were identified as being the easiest to acquire, supervision and professional ethics.

Low Difficulty

- Supervision
- Professional Ethics

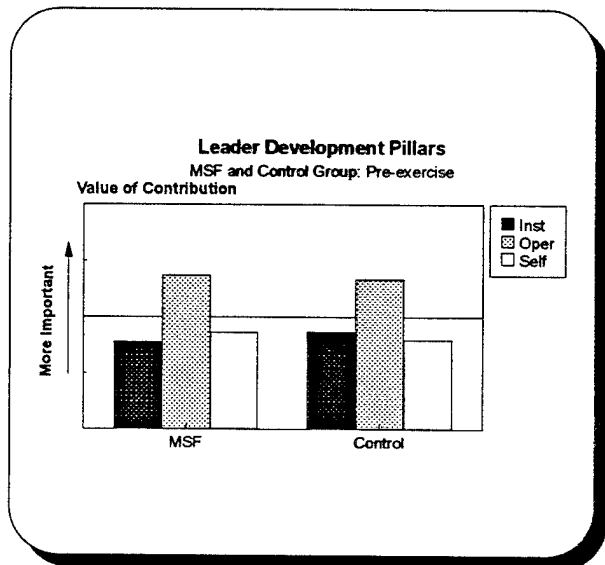
Contribution of Pillars. Operational assignments contributed the most to competency development in both the MSF and control groups as depicted in the following graphs. It follows that since officers and soldiers spend most of their time in operational assignments they would



acquire the majority of leadership skills while in these assignments. For the MSF, operational assignments were the most important pillar in 8 of the 9 competencies. For the control group, operational assignments were the greatest contributor in 6 of the 9 competencies.

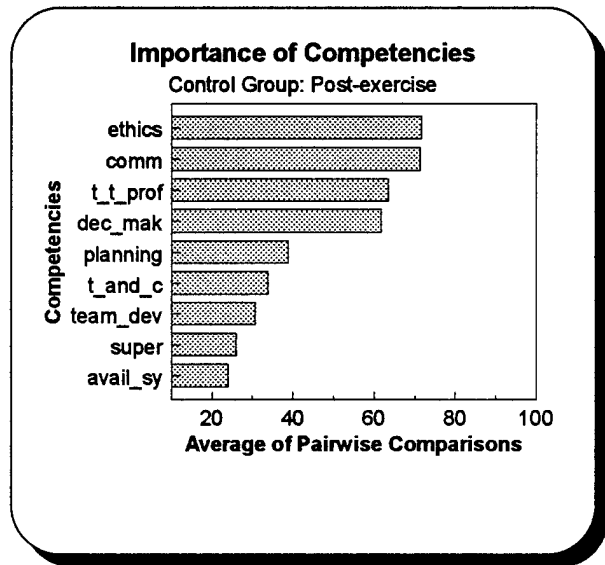
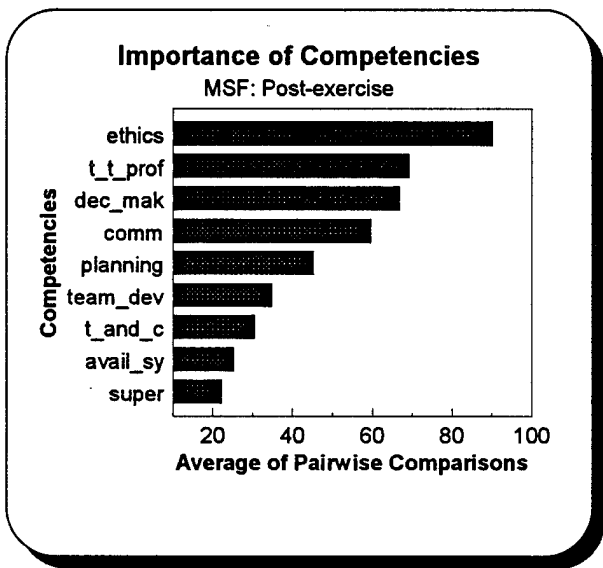
Communications, use of available systems, and professional ethics were the only competencies that went against this trend in the control group. Both groups felt professional ethics was a self-developed trait. In the control group, the self-development pillar was the top contributor to communication skills and the institutional pillar supported use of available systems.

Although both groups were equally convinced that operational assignments were most influential in developing leader competencies, neither group could convincingly point to any one of the other two pillars, **institutional training** or **self-development**, as a strong secondary contributor. In fact, an average across all the competencies shows graphically the equality of the secondary pillars.



Post-Exercise Survey. The competency rankings in importance and difficulty of acquisition for future officers from the post-exercise survey are provided here, along with end-of-term assessments of the contribution of the leader development pillars.

Importance of Competencies. Relative rankings of competencies by the MSF and control group for the post-exercise survey are illustrated below. Higher values once again mean higher importance.



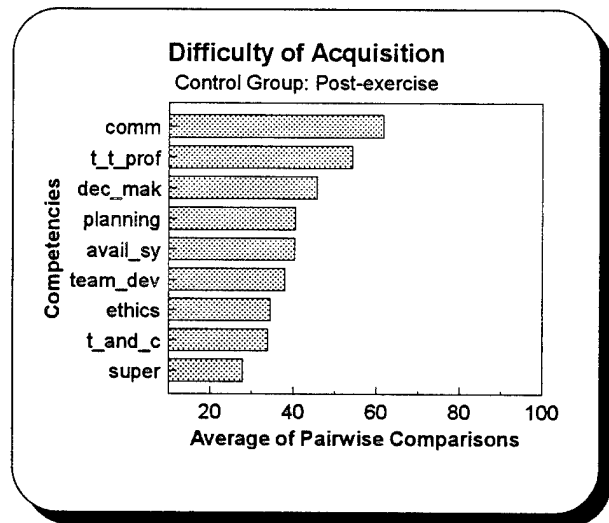
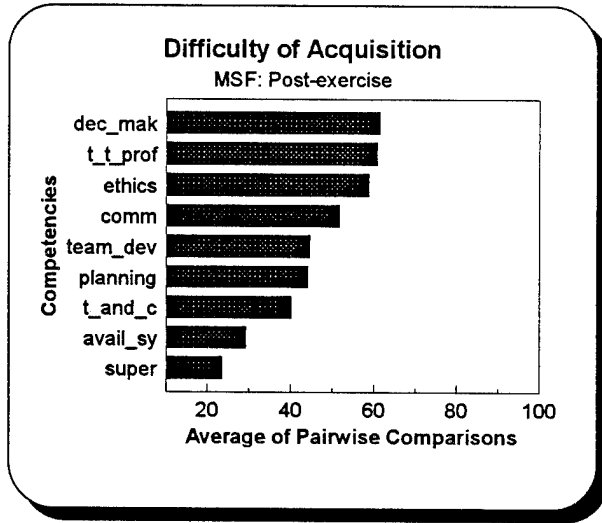
While there are some small differences in individual rankings made by the MSF versus the control group, both sets of students continued to split the competencies into the same two distinct groups. The four competencies that continued to comprise the upper, or more important, competencies are professional ethics, communications, technical and tactical proficiency and decisionmaking.

- High Importance**
- Professional Ethics
 - Communications
 - Technical and Tactical Proficiency
 - Decisionmaking

- Lower Importance**
- Supervision
 - Teaching and Counseling
 - Soldier Team Development
 - Planning
 - Use of Available Systems

The other competencies, supervision, teaching and counseling, soldier team development, planning, and use of available systems again fell in the lower importance grouping. Use of available systems did shift upwards in the MSF as hypothesized, however it still remained in the lower two of all competencies.

Difficulty of Acquiring Competencies. The rankings obtained from pairwise comparisons of difficulty to acquire competencies for future officers are shown for the MSF and control group on the top of the next page. In these results, some significant changes in relative rankings occurred within the MSF and control groups.



The MSF students shifted difficulty of acquisition judgments significantly for three of the competencies. Professional ethics rose from easiest to third most difficult competency in the post-exercise survey, perhaps contradicting a pre-exercise notion digitization would not affect professional ethics. Decisionmaking rose from fifth to most difficult, and use of available systems dropped from third to eighth position as MSF students became more familiar with technologies. The resulting MSF grouping of difficulties placed decisionmaking, technical and tactical proficiency, professional ethics, and communications in the more difficult class; soldier team development, planning, and teaching and counseling in the medium difficulty group; and available systems and supervision in the lower difficulty set.

It is also critical to note in the MSF post-exercise survey, the four most important competencies are now identified as the four most difficult to acquire, thereby raising the stakes for all the leader development pillars to make significant, valuable contributions.

- High Difficulty--MSF**
- Decisionmaking
 - Technical and Tactical Proficiency
 - Communications
 - Professional Ethics

- Medium Difficulty--MSF**
- Soldier Team Development
 - Planning
 - Teaching and Counseling

- Low Difficulty--MSF**
- Use of Available Systems
 - Supervision

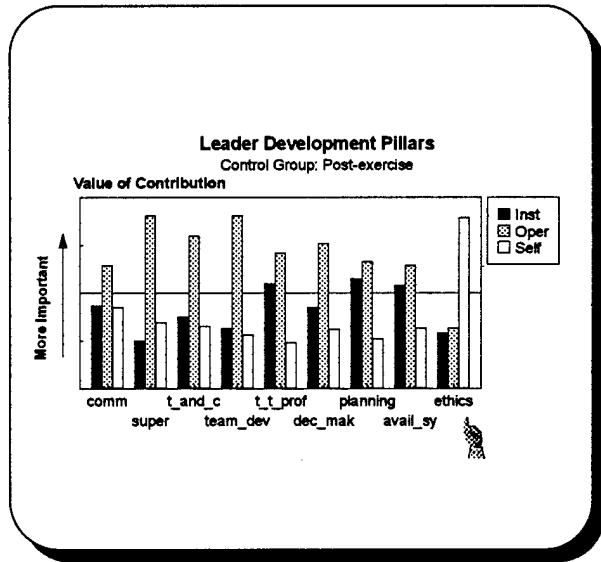
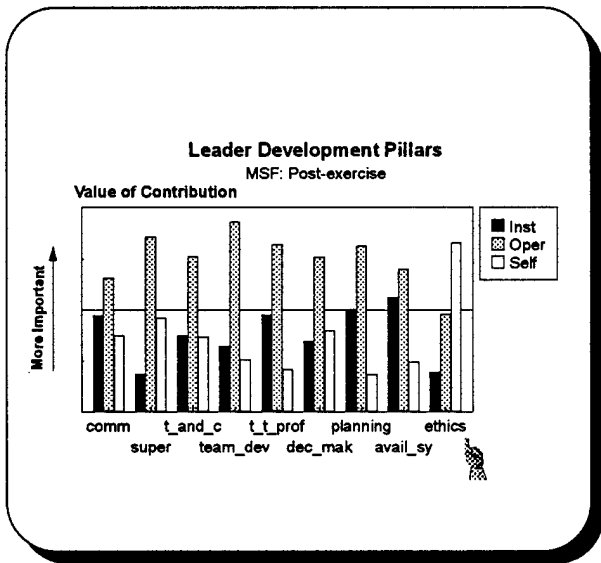
- High Difficulty--Control Group**
- Communications
 - Technical and Tactical Proficiency
 - Decisionmaking

The control group students also noted some small shifts in their judgments of difficulty to acquire certain competencies. Their assessment essentially broke into two groups during the second survey, with communications, technical and tactical proficiency, and decisionmaking in the higher difficulty category, and the other six competencies relatively close

together in the lower difficulty category. In this breakout, decisionmaking replaced use of available systems in the higher category. Reasons for these shifts, both in the control group and the MSF, are offered later in the **Implications for Future Leader Competencies** section of the results.

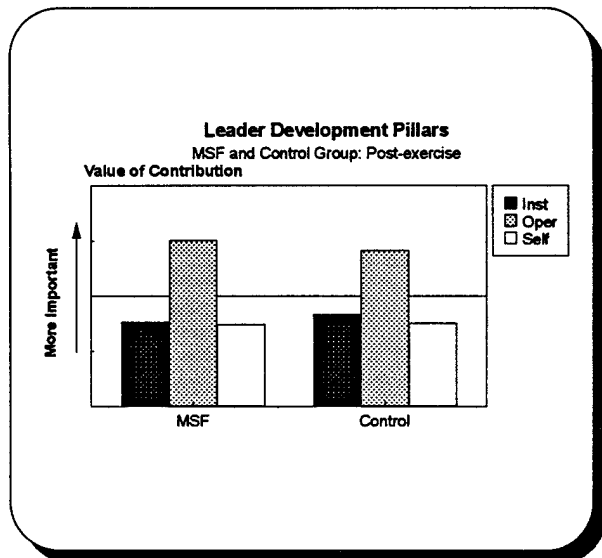
- Lower Difficulty--Control Group**
- Supervision
 - Teaching and Counseling
 - Soldier Team Development
 - Planning
 - Use of Available Systems
 - Professional Ethics

Contribution of Pillars. It is interesting to note in the following graphs that differences in pillar contributions between the groups in the first survey disappeared in the second survey and the



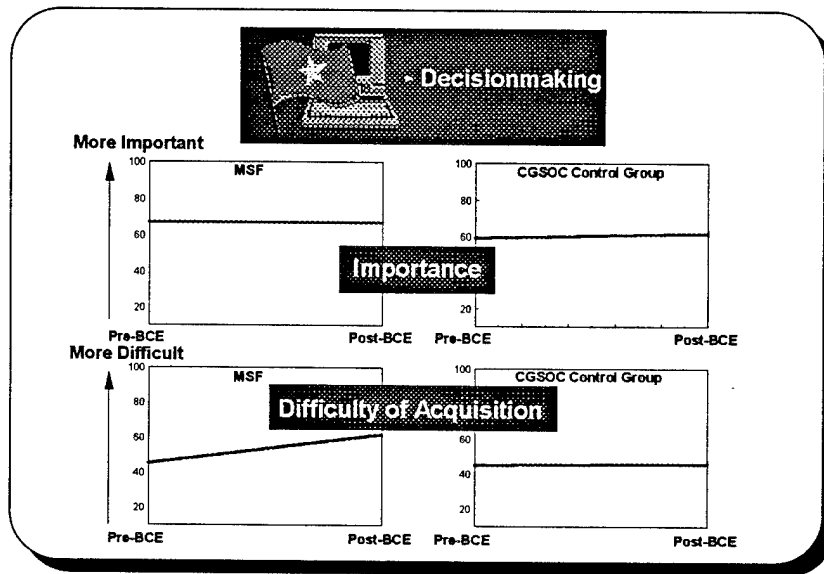
results were relatively equal for both groups. **Operational assignments** were identified as the primary contributor to development of 8 out of 9 competencies, this time in both the MSF and control group. **Professional ethics** once again was the only competency that countered this trend; the MSF students as well as the control group felt **professional ethics** was a self-developed trait.

As in the first survey, a graph of the average contribution shows the secondary pillars to be nearly equal in value.



Implications for Future Leader Competencies. Combined results of the pre-exercise and post-exercise survey are presented in this section, along with the findings of post-exercise interviews with students. Competencies which reflected the most statistically significant changes (at 95% confidence level) between the pre-exercise and post-exercise surveys are discussed first.

Decisionmaking. The **decisionmaking** competency is highly regarded in importance in both groups. The chart below reads left to right, MSF on the left, and CGSOC control group on the right.



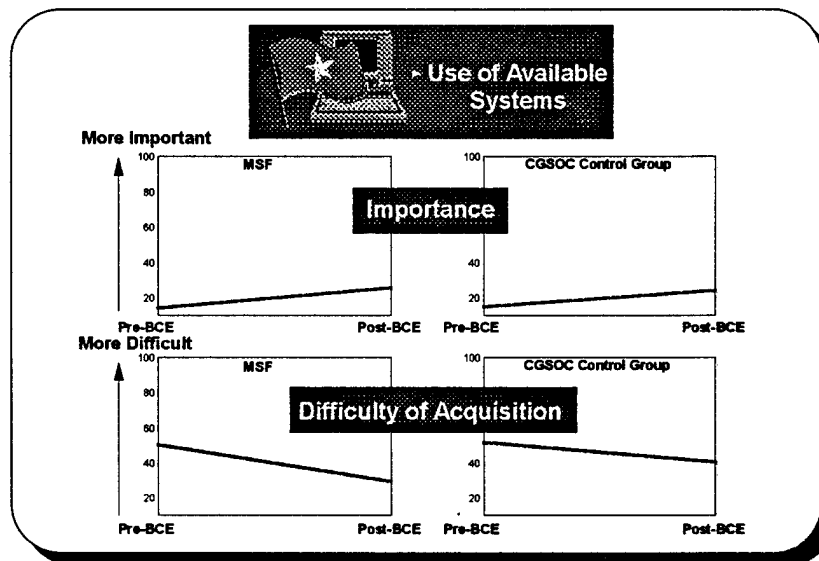
The surveys indicated neither the MSF students nor the students from the control group changed their opinions about the relatively high importance of decisionmaking during this period. However, while the control group also did not waiver in their assessments of the difficulty of acquiring the skill, the MSF students indicated acquiring competency in decisionmaking will be more difficult for officers of the future than they initially thought. There are several factors that could contribute to this result.

First, information overload, or "too much data," was frequently cited as an element that can complicate decisionmaking. This information, increased in volume and perhaps complexity, may be compacted into a much shorter time window, possibly without proper filtering. The commander may have problems deciphering what is important and what is not. Commanders could also delay the operation to wait on that last piece of information before making decisions. Data may also be compartmentalized due to the nature of individual computer workstations, creating a situation where efforts are fragmented and disjointed. Future digitization must allow staffs to pull all elements of information together into one packet.

Another factor may be related to a different intensity in the MSF versus CGSOC training environment. The MSF students received time-sensitive, consequence-related feedback on their decisions through the simulation environment - and through interactions with the MSF commander, an active duty general officer. The students in the control group practiced the deliberate decisionmaking process and combat decisionmaking just as often as the MSF students

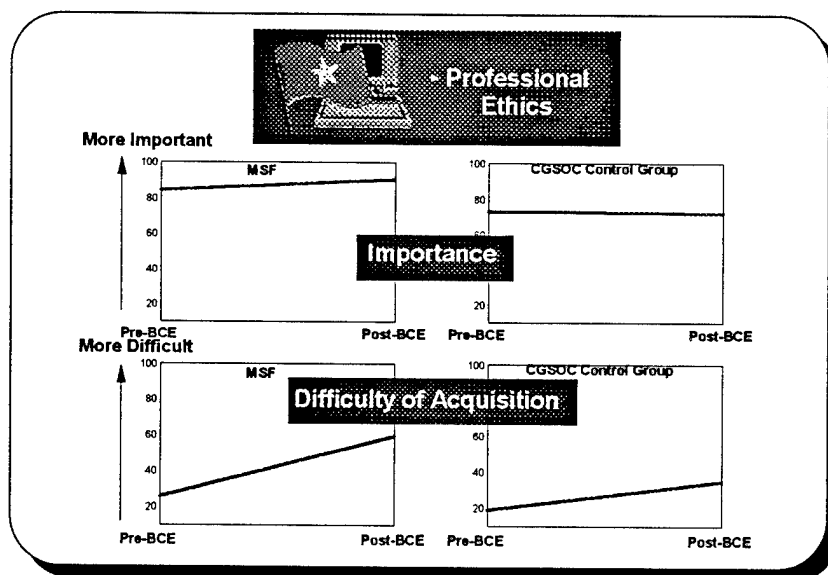
in their respective CGSOC courses, but the curriculum (up until the Prairie Warrior exercise) did not provide the opportunity for the control group to experience this immediate feedback on complex decisions at brigade and division level through simulated battle. Their decisions were also not as time constrained as the MSF. This feedback was reinforced by similar comments from one of the FY 94 MSF students, who noted last year he had participated in at least seven decisionmaking process exercises during the first term, but the January 1994 simulation exercise provided the first battle results feedback on the quality and impact of his decisions as a student.

Use of Available Systems. Regarding use of available systems, specifically information technologies, the CGSOC experience apparently affected perceptions in both groups through familiarization lectures and hands-on requirements. Both groups acknowledged a small increase in importance of the competency. In the MSF, perceptions of difficulty declined significantly, most likely because of additional exposure to the system. The pre- and post-exercise difference in difficulty for the control group, although visually discernible on the chart below, was not statistically significant.



Initial apprehensions about using Phoenix declined through the SIMEXs; however, this change does not imply the user interface for the software is adequate. Students did note an improvement with Phoenix capabilities from the initial exercise, but still identified a multitude of improvement suggestions, as anticipated during planning for the BCE. Augmentees to the MSF experienced severe problems with system familiarity at the onset of Prairie Warrior; some were able to gradually overcome those difficulties as the exercise progressed.

Professional Ethics. Both the MSF and the control group ranked professional ethics very high in importance among the nine competencies. Both groups also moved from an initial belief that acquiring professional ethics was less difficult than other competencies, to a recognition of potential difficulties. The MSF students moved sharply up the difficulty scale, and during post-survey interviews, offered several explanations for this result.



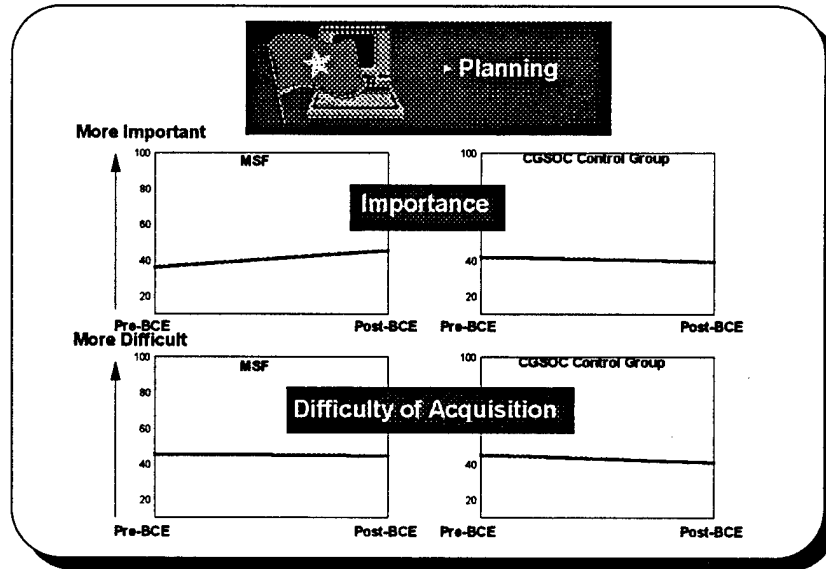
Digitization will bring increased access to data, or potentially more knowledge, which will bring a corresponding increase in responsibility to apply that additional knowledge according to ethical standards. For example, information about civilians in the battlespace may be more widely available than in the past. Increased data availability also provides greater opportunities or temptations for exploitation. The computer may make it easier to communicate incorrect information and blame it on automation.

Students also noted baseline values in society may be changing, which could affect the Army through personnel recruitment. The perspective is that an erosion of family values is taking place in the society at large (e.g., discipline problems in school, drug use, pervasive guns, gangs, internal terrorism) and this erosion will eventually affect the Army.

Last, but not least, the Army is changing. The downsizing is beginning to affect the way we view each other. Promotions have become more difficult to attain and jobs are becoming available to only a few chosen people. Selfless service may give way to selfish service through self-preservation. This is especially troublesome when viewed in the context of a smaller staffed Army with wider dispersed units. People will need to rely on each other more under these changing and stressful conditions.

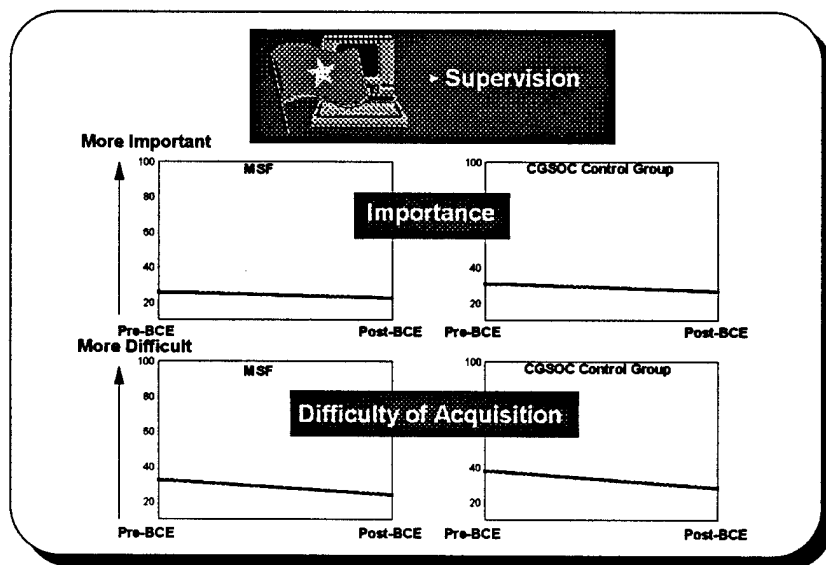
Planning. The MSF and the control group ranked **planning** about midway in importance among the nine competencies. The MSF however, perceived the importance of planning as a competency would slightly increase. The MSF students' move to the upside in importance was unique and they offered several explanations for this result.

On the battlefields of the future, improved technology will require more detailed planning to harness and control the greater lethality of weapons systems. Precision planning will ensure synchronization of effort and massing of combat power. Future digitization should speed up the process and make it easier, but such tools as the synchronization matrix and wargaming support must be functional and usable. This was not the case in the MSF.



During the first two SIMEXs, the MSF students were given plans that were already completed. They were not integrated into the planning process and felt no ownership of the plan. This hurt student understanding of process and the operation. When a combination of the intermittent problems with Phoenix and the plan hindered performance (lost plans, bad communication, no E-mail, screen lock ups), the students became frustrated and often found ways to work around the technologies (e.g., personal computers with working software, printers, paper maps, chart paper, sticky notes). SIMEX 3 and Prairie Warrior saw an increase in student participation in the planning process and subsequent interest and recognition of the importance of doing it right.

Supervision. Both the MSF and control group ranked **supervision** low among the nine competencies in importance. Both groups moved slightly from their original rankings of difficulty to the downside. The MSF students and control group offered several explanations for the low overall ranking of supervision as a competency.

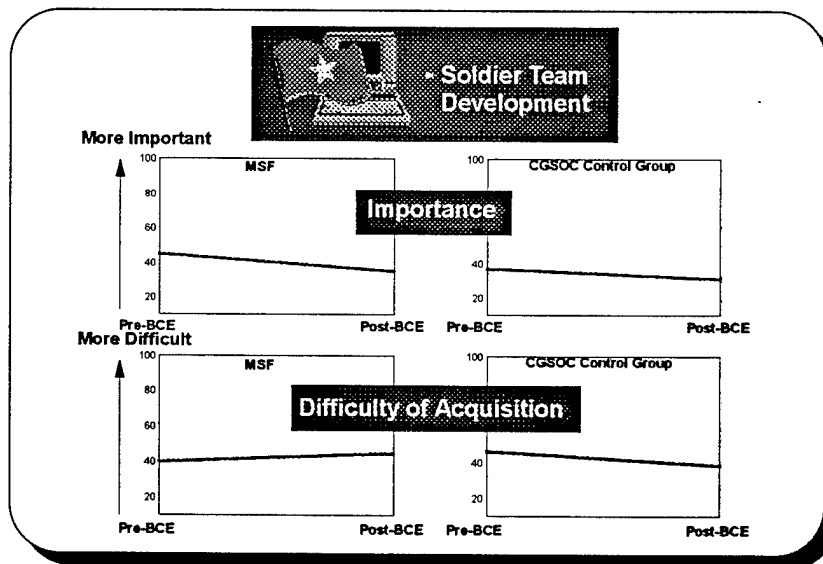


Future technology will make it easier for commanders to supervise their subordinates. Position sensors, video feeds, etc., will give the commander information two to three levels down. This will increase situational awareness and allow the commander to immediately affect the battle. These positive effects can also be viewed in a negative light. Commanders may "micro-manage" or "over-supervise" their subordinates with this greater amount of information. Commanders may want to affect everything. Over-supervision can hurt command climate, and mistakes of a higher commander may be inaccurately attributed to subordinates. Commanders could also lose interpersonal contact with their subordinates if computers are used to facilitate supervision of subordinates in this manner. Conversely, subordinates with access to more information may attempt to "second guess" their superiors.

The students also stated that often their supervisors have not cared how the job got done; as long as the subordinate got the job done to a high standard, supervision was light. If the job was not done to standard, the level of supervision increased.

Another reason offered for both groups' decreases in difficulty was the CGSOC environment. The students were working with peers here and felt supervision of their peers was not necessary. This competency may become more important as they go back to the field Army and supervise soldiers.

Soldier Team Development. The soldier team development competency was not highly ranked in importance in either group. Rankings of the relatively low importance of soldier team development decreased even more in the second MSF survey. Although their assessment of difficulty did not change significantly, they did discuss areas of concern for future soldier team development.



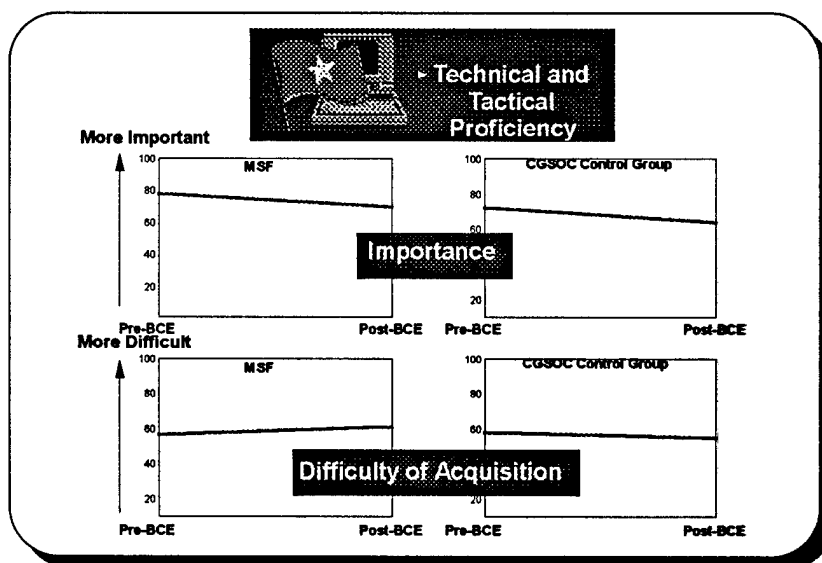
First, some students perceive that technology has become more important than people - one reads it in the paper everyday as the Army downsizes and the services fight for their future systems ("Army to cut another 20,000 to fund future systems"). Downsizing the force means less opportunities for people. As stated above in professional ethics, the downsizing is beginning to

affect the way we view each other. Promotions have become more difficult to attain (60.9% in last LTC board for in-zone promotion) and "exceptionally" qualifying jobs in the basic branches are becoming available to only a few people.

Unless the Army demands workable collaborative tools, the nature of individual computer workstations and advanced technology systems could create a situation where efforts are fragmented and disjointed - once again hurting soldier team development. Technology can create an isolating situation where staffs become smaller and units become more dispersed; soldier team development will suffer outside the smaller groups. Students believe the Army must be careful not to rely too much on technology and not enough on people.

Another factor affecting soldier team development may also be related to the different intensity of training in the MSF versus CGSOC training environment. The MSF students spent a tremendous amount of time accomplishing their assigned tasks using the information technologies. This created an equity problem with time, effort, and the other CGSOC experience. This may have degraded their perception of ease of soldier team development, giving them the perspective that improved technology takes more time to accomplish their assigned tasks, reducing available time for their soldiers. Problems with the technologies in general (losing plans, poor communications, lack of planning tools, etc.) may have caused this perception and with more mature systems, the perspective could change.

Technical and Tactical Proficiency. Both the MSF and control group ranked **technical and tactical proficiency** very high in importance among the nine competencies. While there were no statistically significant changes in either group for importance and difficulty, both groups described some potential future effects of technology on technical and tactical proficiency.

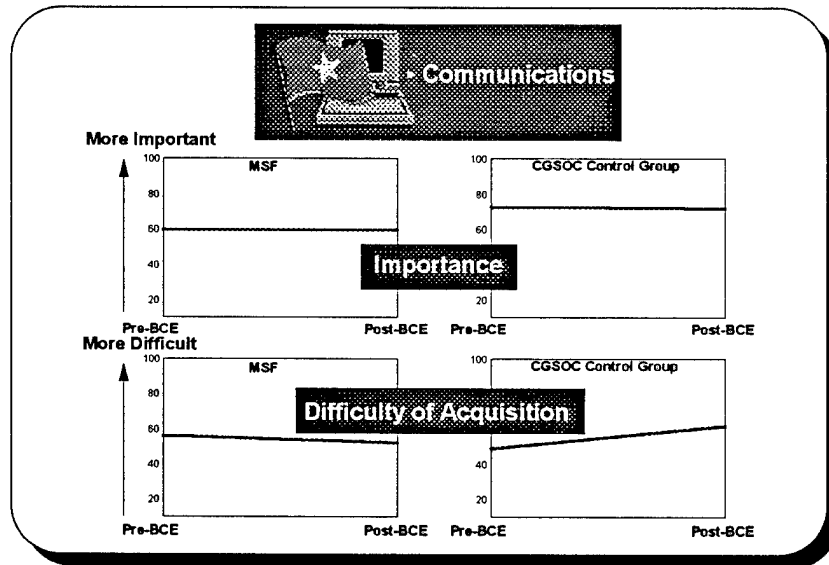


As technology increases, officers will be hard pressed to keep their proficiency level up to standard. Specifically, senior leaders may be surpassed by technology and not understand how to integrate this improved technology into operations. Having grown up in an Army without these

technological advances, senior leaders may be inclined to fall back on what has worked, and worked well, during their careers. For example, some students felt they fought today's tactics with tomorrow's technology during the BCE. They were told initially they would create their own, new way of fighting the force of the future, but some felt this objective was not met.

Conversely, an over-reliance on technological advances of the future may create a situation where manual skills will wane. Manual skills are critical as backup if the digitized force experiences degraded situations or a catastrophic failure because of future countermeasures.

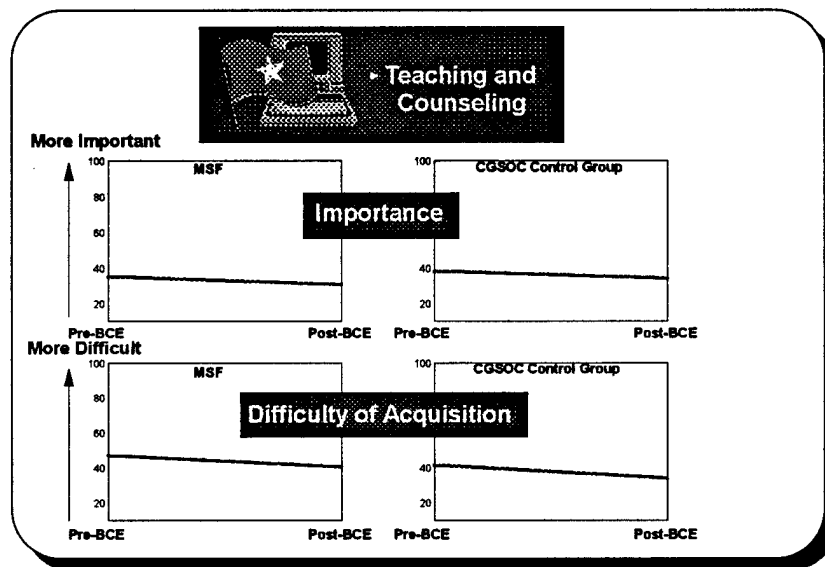
Communications. Both the MSF and the control group ranked **communications** relatively high in importance among the nine competencies. The control group believed communications would be slightly more difficult to acquire. Despite the fact that there was no difference in the MSF assessment of difficulty, students highlighted several shortcomings with the MSF experiment.



The MSF communications environment generated more frustration than ease of exchange of information. The vision for communications for Force XXI could not be fully realized in this prototype environment. E-mail, videoteleconferencing (VTC), and even voice communication were not reliably and responsively implemented in the Phoenix system and associated networks. The MSF instituted several makeshift remedies to alleviate communication problems (hand held radios) and take some of the stress off the system. Despite these shortcomings, and maybe as a result of them, the students understood the value of future communication in a digitized environment.

The MSF students also indicated even if communications get easier with improved technology, there will continue to be a need for face-to-face communication. While VTC can be a useful substitute for routine face-to-face interactions, students felt the ability to look into subordinates' and superiors' eyes and truly understand their feelings, beliefs, and attitudes is and will continue to be a critical leadership requirement.

Teaching and Counseling. Both the MSF and control group ranked **teaching and counseling** lower in importance and difficulty among the nine competencies, with no significant changes from their original rankings. The students may have viewed teaching and counseling in the same light as supervision. The MSF students and control group offered several explanations for the lower ranking of teaching and counseling as a competency.



One reason was the CGSOC environment. The students were working with peers here and felt teaching and counseling of their peers was not necessary or practical. This competency may become more important as the officers go back to the field Army, however, some students specifically mentioned that as majors their roles as teachers and counselors will be limited by position and rank.

Some technologies facilitate teaching and counseling. For example, the Phoenix "white board" was a tool used effectively by the MSF Commander and his staff to communicate the battle vision and at the same time mentor subordinates. The students could ask questions to clarify instructions and the Commander could provide immediate feedback and direction.

Conclusions

In the IO environment of the MSF, the most important competencies are professional ethics, communications, technical and tactical proficiency, and decisionmaking. These are also identified by the students as the most difficult to acquire.

Based on the MSF experience, the effects of digitization and IO on leader development competencies are most pronounced in the following areas:

- ♦ **Decisionmaking** will be more difficult for future officers due to information overload, complexity of information, and compartmentalization.

- ◆ The ability to **communicate** in the digitized, information environment will be a critical link if future technologies are to be employed effectively. Competency in **Communications** and **use of available systems** can be more easily acquired with exposure to future technologies.
- ◆ **Professional ethics** may be more difficult in the digitized environment as access to information provides opportunity and temptation for unethical actions and makes ethical decisions more complex.
- ◆ **Technical and tactical proficiency** of future officers will remain an extremely important competency in the future.
- ◆ **Planning** becomes even more important in the digitized environment due to synchronization of advanced systems for maximum positive effects.

Regarding the contributing pillars, officers gain the majority of their competencies from **operational assignments**. Except for **professional ethics**, the primary contributor to development of all competencies is unit experience.

Recommendations

This section offers specific recommendations for leader development pillars and competencies to prepare Army leaders for the digitized environment of the future and provide the nation confident and competent leaders in the 21st century. These recommendations are intended to strengthen the contribution of the institutional and self-development pillars through the creation of the most advanced learning environment possible and world-wide access to information resources.

- ◆ Review the curriculum in Basic and Advanced Courses, Command and General Staff College, and the Army War College to ensure that emphasis on the leader competencies is placed at the proper levels.
- ◆ Ensure that programs of instruction in leader competencies are reviewed and updated for a future context. Place particular emphasis on decisionmaking, **technical** and **tactical** proficiency, communications, and professional ethics. Consider **new methods** of reinforcing the educational process in these areas, such as **simulation exercises** to test decisionmaking skills and technical and tactical proficiency.
- ◆ Integrate information technologies in school curriculum to **increase proficiency** with computer operations and help break down "cyberphobia."
- ◆ Consider a requirement for self-study in an area of **Information Operations** or the future digitized environment, to contribute to transitioning the force to the 21st century. All CGSOC students, for example, could benefit significantly from **this self-study** requirement.