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Team Measures for the
Military Advisor Training Academy

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14. ABSTRACT

Before being assigned to a security force assistance brigade (SFAB), advisors are trained at the Military Advisor Training Academy (MATA). At the MATA, student advisors must work together with their advising teams and their foreign security counterparts to complete scenario-based training. Assessment of student performance has primarily focused at the individual-level, overlooking the nuances of team performance and neglecting opportunities for feedback for teamwork improvement. Previous research (Orvis et al., 2022) developed a set of team measures appropriate to the MATA context. This report describes how the measures should be used and scored and provides printable versions of the measures for instructor use.

Users can obtain an Excel calculator to assist with score computation by contacting the U.S. Army Research Institute.

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TEAM MEASURES FOR THE MILITARY ADVISOR TRAINING ACADEMY (MATA)

CONTENTS

Team Measures for the Military Advisor Training Academy (MATA)

Security Force Assistance Brigades (SFABs) support the Army's mission by training and supporting foreign partners. In these units, SFAB Soldiers often operate in 12-person advisor teams to accomplish goals (Congressional Research Service, 2022; U.S. Department of the Army, 2020; Army Techniques Publication [ATP] 3-96.1). SFAB units are regionally aligned, with the mission of each unit driven by the needs of partner nations in that region.

To prepare for SFAB assignment and deployment, candidate advisors attend the Combat Advisor Training Course (CATC) at the Military Advisor Training Academy (MATA). Throughout the course, student advisors learn the skills necessary to advise foreign partners, both individually and as part of a team. The CATC instruction (version 2.0) occurs in four blocks (Brown et al., 2022). Block 1 consists of classroom training that teaches students about their role as an advisor and includes basic cultural and language training. Block 2 includes a week of medical skills training (where students earn their Tactical Combat Casualty Care [TC3] certificate) and a week of fires training. On the final day of the medical week, students perform in a mass casualty scenario exercise. It is a complex team task that incorporates manikins and medical injuries simulated by instructors. During Block 3, students sign up for two weeks of specialized individual training. The teams then come back together for Block 4, the field training exercise (FTX). Week 1 of the FTX occurs in a Military Operations in Urbanized Terrain (MOUT) site with a complex scenario and over 100 role players. The second week occurs in a more austere environment, with additional complexity presented in the scenario.

Instructors guide students through individual training and team-based scenarios throughout the course. Historically, formal evaluations have been primarily focused on individual assessment. Given the importance of teamwork in SFABs and the CATC student teams, the MATA would benefit from the inclusion of teamwork assessments. To assist the MATA, the Army Research Institute for the Behavioral and Social Sciences developed a set of team-based measures tailored to the CATC setting (Orvis et al., 2022). These measures allow instructors and Observer-Controller/Trainers (OC/Ts) to observe the student teams and make evaluations of how well they work together as a team. Team assessment can be incorporated into After Action Reviews (AARs) and be used to track team performance over time. This report describes the measures and how to use them to assess the teamwork of CATC student teams.

Team Measures

Purpose

The purpose of the MATA team measures presented in this report is to provide instructors and OC/Ts a way to assess teamwork as students complete the course at the MATA. To develop the team measures, researchers reviewed Army doctrine, spoke with instructors, and observed events of the CATC (Orvis et al., 2022). That research identified 11 team constructs to focus on for team measures. Ten constructs are team processes as described by Marks et al. (2001) in their team process taxonomy. These constructs are focused on how the team is working together as they plan and execute their missions. The team process taxonomy describes three processes that are important for team planning tasks (mission analysis, goal specification, and

strategy formulation and planning), four processes that are important for teams executing their missions (monitoring progress towards goals, systems monitoring, monitoring and backup, and coordination), and three interpersonal processes that are critical across all team tasks (affect management, motivation and confidence building, and conflict management). The eleventh construct identified is team cohesion, which is a team state. Team cohesion represents how the team feels about being a team and is important because it can impact how well the team works together.

Audience

The team measures published in this report are designed to be used by instructors at the MATA as they observe students progressing through the advisor training course. Within the current version of the course (version 2.0), the measures will be most relevant for instructors in Blocks 2 and 4. Specifically, the measures are relevant for assessing teams performing during the mass casualty exercise (Block 2) and throughout the entire FTX that occurs in Block 4. Course administrators may also use the scores produced from these measures as part of holistic student evaluation.

Team Measures

Table 1 provides an overview of the team constructs selected, a short description of each construct, and the items associated with each construct that have been tailored for the CATC context. This report provides two printable versions of the team measures (Appendix A):

- *Team Measures Long Form* (page A-2) is a 24-item measure that assesses all 11 team constructs using multiple items for each construct. We recommend using this measure as it is likely the most reliable and valid assessment of the team constructs.

- *Team Measures Short Form* (page A-3) provides a shorter (11-item) version of the team measures. The short form measure assesses the 11 team constructs using a single item for each construct (those items are denoted by the * in Table 1). This short-form measure could be used in circumstances where the instructor load is high but it is still important to capture teamwork.

Rating Scale

For both the long and short form measure, the rater uses a 4-point rating scale for each item: 1 = needs much improvement; 2 = needs improvement; 3 = some room for improvement; 4 = little to no room for improvement. Instructors should make an informed rating based on their direct observations of the team. Therefore, it is important instructors are present for the event as the team performs so that they base their ratings on a complete picture of how team members worked together. If the instructor is unable to observe the team, they can use the not applicable (N/A) option. However, the N/A option should be used sparingly and only in cases where the instructor is certain they cannot make an informed rating.

Table 1

Team Construct Names, Descriptions, and Items

Team Construct	Description	Items
Planning Processes		
Mission Analysis	The identification and evaluation of team tasks, challenges, environmental conditions, and resources available for performing the team's work.	• When planning, team members identified the key challenges they expected to face.* • When planning, team members developed a shared understanding of the task.
Goal Specification	Activities centered on the identification and prioritization of team goals.	• When planning, the team ensured all members clearly understood their goals.* • When planning, the team set goals for what they wanted to accomplish.
Strategy Formulation and Planning	Developing courses of actions and contingency plans as well as making adjustments to plans in light of changes or expected changes in the team's environment.	• When planning, the team developed contingency ("if-then") plans to deal with uncertain situations.* • When planning, the team allocated enough time for important activities.
Action Processes		
Monitoring Progress Toward Goals	Members paying attention to, interpreting, and communicating information necessary for the team to gauge its progress toward its goals.	• Team members let each other know when goals had been accomplished.* • The team regularly monitored how well they were meeting their goals.
Systems Monitoring	Activities such as tracking team resources (e.g., money) and factors in the team environment (e.g., inventories) to ensure that the team has what it needs to accomplish its goals and objectives.	• The team was aware of their environment and how it impacted their work.* • The team monitored and managed their resources (e.g., medical supplies, translator, equipment, MREs). • The team made sure everyone had access to the right information to perform well.

(continued)

Team Construct	Description	Items
Action Processes (continued)		
Team Monitoring and Backup	Members assisting others in the performance of their tasks (by providing feedback or coaching or assisting with the task itself).	• The team balanced the load among team members.* • All team members pulled their weight.
Coordination	The process of synchronizing or aligning the members' actions.	• Team members coordinated their actions with each other.* • Team members were able to re-establish coordination when things went wrong. • Team members knew when they needed to lead and when they needed to follow.
Interpersonal Processes		
Conflict Management	The manner in which team members proactively and reactively deal with conflict.	• The team encouraged a healthy debate and exchange of ideas.* • Team members showed respect for one another.
Motivating and Confidence Building	Activities that develop and maintain members' motivation and confidence while working toward team goals.	• The team stayed motivated, even when things got difficult.* • The team encouraged everyone to do well.
Affect Management	Activities that foster emotional balance, togetherness, and effective coping with stressful demands and frustration.	• The team maintained a positive work attitude.* • The team managed stress well.
Cohesion		
Cohesion	The shared bond that drives team members to stay together and to want to work together.	• Members of this team work together to get the job done.* • There is a sense of pride among members of this team.

Note. The * items represent the 11-item short form of the team measures. Most items were adapted from Mathieu et al. (2020).

When to Use the Measures

To capture nuances in teamwork over the course of instruction, either version of the measure can be used *daily*. Instructors should choose either the long or short form and complete the measure at the end of every day. The MATA leadership indicated they might aim to use the measures at the *end of each week*. We understand that this would align nicely with the other assessments being conducted (for example, individual advisor attribute assessments). However, we caution that assessing teams over many events might be problematic for the reliability and validity of the assessments, as human raters are subject to biases like the recency effect.[1] Thus, we encourage daily use of the measures to maintain accuracy and be able to view trends over time.

When to Observe the Team

When choosing the timeframe to observe and assess the team, it is critical to think about which team activities are taking place. For these measures, it is recommended the instructors observe a full cycle where the team *plans* their activity (for example, morning synch meetings), then *executes* the planned activity (for example, when advisors are working with their counterparts in the village), and then comes back together and *assesses* how well their plan worked and how they performed (for example, when advisors come back together; an AAR at the end of the day). We refer to this full cycle of these three activities (plan, execute, assess) as a *team event*. One reason we recommend a daily assessment for these measures is that a full team event, including all three activities (plan, execute, assess), usually happens daily within the context of Block 4 of the CATC course. For Block 2, the entirety of the mass casualty scenario (planning, execution, and debrief) would be a good team event to target.

Some items may be best observed during a specific part of the plan, execute, and assess activities. For example, team planning processes (mission analysis, goal specification, and strategy formulation and planning) are likely best observed when the team is engaged in *planning* activities. For the CATC, this would include morning synching and end-of-the-day after action review events. Team action processes (monitoring progress towards goals, systems monitoring, monitoring and backup, and coordination) are likely best observed when the team is executing their planned activities and assessing how well they performed. For the CATC, this would include activities when students are advising their counterparts but may also happen when they get back together at the end of the day. Cohesion and interpersonal processes (affect management, motivation and confidence building, and conflict management) can generally be observed throughout all three of these team activities.

Capturing Context

Both the short and long versions of the measure include blank areas for the rater to notate basic administrative information at the top to include which instructor assessed the team, which team event was observed, and the time and date of the team event being assessed. This data may be helpful in linking or comparing data in the future. Each version also includes a space for

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[1] Recency effect is a cognitive bias in which a person remembers the most recent events or information more clearly than events or information that were presented before.

written notes at the bottom of the page. The notes should be used to provide feedback to the team on how well they were working together.

Instructor Rating Preparation

Instructors should review the items before each class to (re)familiarize themselves with behaviors that they should be paying attention to. It would also be beneficial to establish some degree of interrater reliability across instructors. For example, instructors should talk about what a team that "needs improvement" looks like for the item "The team regularly monitored how well they were meeting their goals." to help establish a common frame of reference to ensure that raters were making fair and consistent ratings.

Scoring

Overall Teamwork Score

An overall teamwork score can be calculated using a simple average of all the items for a single version of the measure. As an example, suppose an instructor used the long form team measure at the end of the first week of the FTX. The instructor would provide a rating for each of the 24 items. To calculate an average, they would add up the value for each of the 24 items and divide by 24. For averages, it is best to report and record the average rounded to two decimal places. Users can obtain an Excel calculator to assist with score computation by contacting the U.S. Army Research Institute.

The overall teamwork score can be used to get a sense of how the same team is doing over multiple events and time. As another example, suppose the long form team measure was used three times during a course cycle: first at the end of block 2, following the mass casualty event; second at the end of the FTX week 1; and third at the end of the FTX week 2. An average of all 24 items would be calculated for each event, resulting in three averages that could be compared across time as part of an AAR. An increase in scores from Time 1 to Time 2 to Time 3 would suggest the team improved on teamwork. Alternatively, a course administrator might be curious how different teams performed at the mass casualty event. In that case, Team 1's score could be compared to Team 2's score for that event.

Construct Specific Teamwork Score

For the long form teamwork measure, average scores can also be calculated within each of the 11 team constructs.[2] Those constructs can be compared over time and may point to specific areas of concern for a team. For example, daily assessment may illustrate that team cohesion is declining over the first week of the FTX. Alternately, comparing scores for groups of constructs can also provide insight into teamwork. As described in an earlier section, Marks et al. (2001) identify three superordinate categories of team processes: planning processes (mission analysis, goal specification, and strategy formulation and planning), action processes (monitoring

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[2] The Team Measure Short Form has one item for each construct, so a construct mean cannot be calculated when using that version of the measure. Instead, when looking at differences for an individual team construct (for example, cohesion), the raw score on the single item will be compared across events and teams.

progress towards goals, systems monitoring, monitoring and backup, and coordination), and interpersonal processes (affect management, motivation and confidence building, and conflict management). Taking the average from these sets of items (for example, the average of all planning process items) can provide a score for discussion about a specific activity (for example, planning) and help diagnose issues with a team.

Data Management

Missing Data

Ideally, instructors will be able to provide ratings for all of the measure items. In fact, the team measure items were selected because those behaviors were deemed to be observable across most of the CATC team events and were easily interpreted by the instructors (Orvis et al., 2022). However, a N/A option was included for situations in which the team behavior was not observable by the instructor. The N/A option does not have a numeric value associated with it and must be treated as a missing value when calculating a score. Because missing values can be problematic when calculating average scores, the general recommendation is for instructors to complete all ratings and utilize the N/A option sparingly, and only in cases where they really are not able to make an accurate rating.

There are many recommendations on how to treat missing values in the statistics literature. The best action to take depends on the nature of the missing data (for example, how much data is missing and what values are missing). As a general recommendation, we suggest substituting the last observed value for an item (perhaps from a prior event) instead of leaving a N/A rating. Because the N/A designation should represent the instructor not observing the behavior, it may be fair to assume the team performed no better or no worse than the last event. Substitution of the last rated value is recommended only for instances in which there are few N/A ratings selected. If there are many N/A ratings for the same item across multiple events, we would recommend removing that item out of the average scoring altogether. For example, one of the items is "The team stayed motivated, even when things got difficult." It is possible (although unlikely within the context of the CATC training) that the team did not face difficulty across multiple events; therefore, the instructor may not have been able to assess how motivated the team was and gave a N/A rating for that item during each event the team was assessed. In that case, we would suggest the item be removed from all average calculations across all events. Finally, if there are many N/A scores for a measure (that is, 20% or more; Enders, 2010), within a team event observation, we would recommend not creating averages for that event measure. For example, if the instructor is using the Team Measures Long Form (page A-2) and has N/A ratings for five or more of the 24 items, we would suggest not using the overall average of those 24 items as a comparable data point.

Aggregating Scores and Comparing Data Over Time

As data are captured across time for many classes and teams, it will become possible to compare assessments for teams currently completing the course to historical team data. To make historical comparisons, the measures should be tagged with useful information, such as the team training events in which the observations were made, the instructor rating the team, the date and time of the rating, and the team being rated. As mentioned earlier, data fields are included at the

top of all versions of the team measures to include this information. The MATA may choose to add to or change those fields.

Mixing Measure Versions and Storing Data

This report offers two versions of measures that can be used by the MATA. If multiple versions are used across classes, it will be important to store the raw data so that comparisons can be made across time with the common items.

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Appendix A

Printable Team Measures

Team Measures Long Form

Rater_____ Team_____ Date_____ Time_____

Period/activity/event team assessment based on: _____

Instructions: Using an X in the appropriate box, rate how well your team worked together using a 4-point scale, or **N/A** if not observed. Take notes to provide team feedback.

Overall Score: _____ Planning: _____ Action: _____ Interpersonal: _____

1 = Needs much improvement | **2** = Needs improvement | **3** = Some room for improvement | **4** = Little to no room for improvement

	1	2	3	4	N/A
1. When planning, team members identified the key challenges they expected to face.					
2. When planning, team members developed a shared understanding of the task.					
3. When planning, the team ensured all members clearly understood their goals.					
4. When planning, the team set goals for what they wanted to accomplish.					
5. When planning, the team developed contingency ("if-then") plans to deal with uncertain situations.					
6. When planning, the team allocated enough time for important activities.					
7. Team members let each other know when goals had been accomplished.					
8. The team regularly monitored how well they were meeting their goals.					
9. The team was aware of their environment and how it impacted their work.					
10. The team monitored and managed their resources (e.g., medical supplies, translator, equipment, MREs).					
11. The team made sure everyone had access to the right information to perform well.					
12. The team balanced the load among team members.					
13. All team members pulled their weight.					
14. Team members coordinated their actions with each other.					
15. Team members were able to re-establish coordination when things went wrong.					
16. Team members knew when they needed to lead and when they needed to follow.					
17. The team encouraged a healthy debate and exchange of ideas.					
18. Team members showed respect for one another.					
19. The team stayed motivated, even when things got difficult.					
20. The team encouraged everyone to do well.					
21. The team maintained a positive work attitude.					
22. The team managed stress well.					
23. Members of this team work together to get the job done.					
24. There is a sense of pride among members of this team.					

Notes:

Team Measures Short Form

Rater_____ Team_____ Date_____ Time_____

Period/activity/event team assessment based on: _____

Instructions: Using an X in the appropriate box, rate how well your team worked together using a 4-point scale, or **N/A** if not observed. Take notes to provide team feedback.

Overall Score: _____

1 = Needs much improvement | **2** = Needs improvement | **3** = Some room for improvement | **4** = Little to no room for improvement

	1	2	3	4	N/A
1. When planning, team members identified the key challenges they expected to face.					
2. When planning, the team ensured all members clearly understood their goals.					
3. When planning, the team developed contingency ("if-then") plans to deal with uncertain situations.					
4. Team members let each other know when goals had been accomplished.					
5. The team was aware of their environment and how it impacted their work.					
6. The team balanced the load among team members.					
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11. Members of this team work together to get the job done.					

Notes: