Data Informed Content Development to Meet Army Simulation Educational Needs

Christopher Herrmann[1], Tammie Smiley[2], Walter Watford[2], Jamie Pilar[2], Laura Harding[3]

U.S. Army Modeling and Simulation Office[1], Trideum Corporation[2], Parsons[3]

Fort Belvoir, VA[1], Huntsville, AL[2], Fairfax, VA[3]

christopher.l.herrmann.civ@mail.mil, jpilar@trideum.com, tsmiley@trideum.com, bwatford@trideum.com, laura.harding@parsons.com

ABSTRACT

As part of the Army Modeling and Simulation Office, the Army Modeling and Simulation School (AMSS) continually assesses workforce education and training requirements to maintain a trained, ready, and technically competent modeling and simulation (M&S) workforce. AMSS provides education, training, and qualification for Army military personnel in Functional Area 57 (FA57) Simulation Operations Officers and educational courses for Civilian workforce members in the areas of M&S. To address the educational needs of modeling, simulation and analysis workforce members further, AMSS seeks to gather data on what areas are needed to increase and sustain overall technical skills and the ability to apply enduring operations research and M&S related methods.

This paper will elaborate on how AMSS's analysis team is using a variety of techniques to gather educational needs from the Army communities to stay current and relevant for the Army's modeling, simulation, and analysis workforce. The data gathered to-date is categorized into 25 broad categories and are further defined into educational critical tasks and specific course needs. Using this analysis, AMSS will identify existing education and training solutions, develop new courses, and update current curriculum to develop workforce proficiencies enabling Army readiness and future modernization.

Non-educational solutions such as policy and procedure changes and knowledge sharing are also being pursued in coordination with the Army Modeling and Simulation Office. The non-educational needs arise from requests to better understand how the Army is using models and simulations, what analytic tools and processes organizations are using, and how to leverage existing Army models, simulations, and tools across the Army. Together the educational and non-educational solutions will work to offer the Army modeling, simulation, and analysis workforce greater knowledge, skills, and abilities to accomplish the current and future Army mission.

ABOUT THE AUTHORS

Mr. Christopher Herrmann is a Modeling and Simulation Developmental Specialist for the U.S. Army Modeling and Simulation School, Army Modeling and Simulation Office.

Mrs. Jamie Pilar is a Senior Program Analyst for Trideum Corporation supporting the U.S. Army Modeling and Simulation School, Army Modeling and Simulation Office.

Mrs. Tammie Smiley is a Senior Analyst/Engineer for Trideum Corporation supporting the U.S Army Modeling and Simulation School, Army Modeling and Simulation Office.

Mrs. Laura Harding is an analyst for Parsons supporting the U.S. Army Modeling and Simulation School, Army Modeling and Simulation Office.

Mr. Walter Watford is a Training Development Consultant for the Trideum Corporation supporting the U.S. Army Modeling and Simulation School, Army Modeling and Simulation Office.

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OVERVIEW

The Army Modeling and Simulation School (AMSS) is currently collecting data on what education and training needs exist for Army workforce members using models and simulation or conducting analysis. This information is being used to identify existing education and training solutions and to develop new lessons to meet the needs. Data have also informed AMSS of non-educational considerations that impact the use of models and simulation, analysis tools, and sharing of data. These non-educational considerations are being assessed for potential changes to policies, procedures, guidelines, and best practices. AMSS, under the direction of the Army Modeling and Simulation Office (AMSO), will look for methods to improve and expand the use of models, simulations, and analysis across the Army workforce to meet current and future mission needs. This paper will outline the educational needs identified to date, how the data were collected, and efforts underway to leverage the knowledge gained to benefit the Army.

BACKGROUND

In 2017, AMSS initiated a formal effort to collect data from all Army communities regarding what education and training they require in the areas of modeling, simulation, and analysis to meet current and future mission needs. The effort aligns with AMSS's mission to provide effective education, training, and qualification for a trained and ready modeling, simulation, and analysis workforce including the Army Functional Area 57 (FA57) Simulation Operations officers and to integrate and operate in conjunction with Civilian Career Program 36 (CP36) staff. AMSS provides functional training as governed by Army policy set forth in Army Regulation 350-1, to "ensure training and leader development opportunities are sustained to promote technical and functional proficiency of…Soldiers and Army Civilians" (U.S. Department of the Army, 2017). The data collected informs what modeling, simulation, and analysis educational and training needs exist, what comprises the needs (knowledge, skills, abilities), what tasks and missions the education addresses and what groups require the education and training (e.g., organizations, military, civilian).

PROCESS

AMSS initiated an annual review to gather both qualitative and quantitative data to inform content development through multiple venues including workshops, interviews, and surveys. The process is fluid and adjusted to changing conditions, such as organizational changes, reorganization, and world events like the coronavirus pandemic (COVID 19). This flexibility ensured data could continue to be collected from as many analysis, modeling, and simulation users as possible, providing a more all-encompassing picture of Army modeling, simulation, and analysis educational needs. The process was also not limited by career program, functional area, or job series. The team requested interviews from any individual who oversaw, managed, or used analysis, modeling, or simulation.

Data Collection Process

The data collection process began by identifying recognized and emerging communities enabled by modeling and simulation (M&S). Army Regulation 5-11 establishes the Army M&S framework structure, including recognizing six communities enabled by M&S: Acquisition, Analysis, Experimentation, Intelligence, Test and Evaluation and Training (U.S. Department of the Army, 2014). To ensure full inclusiveness of the broader M&S education and training workforce needs in the Army, this effort included three additional emerging communities enabled by M&S: Cyber, Logistics, and Medical. Organizations were then associated with a community based on their mission. The

number of Army communities interviewed each year depended on the availability of the organizations, the anticipated number of interviews, and how many interviews could be conducted within 1 year. Table 1 shows which Army community were focused on each year.

Table 1. Army Communities Interviewed by Fiscal Year

Fiscal Year	Focus Army Communities
2017	Acquisition, Analysis, Test and Evaluation
2018	Experimentation, Intelligence, Logistics, Training
2019	Cyber, Medical
2020	Analysis, Logistics

Organizations were able to provide representatives for several Army community focus areas over the years and not limited to only one community. For example, the Space and Missile Defense Command provided educational and training need data for the Acquisition, Analysis, Cyber, Experimentation, and Training communities. The community focus methodology was used to help scope the effort for each fiscal year. Once potential communities and organizations were identified, the AMSS analysis team conducted the Data Collection Process as shown in Figure 1.

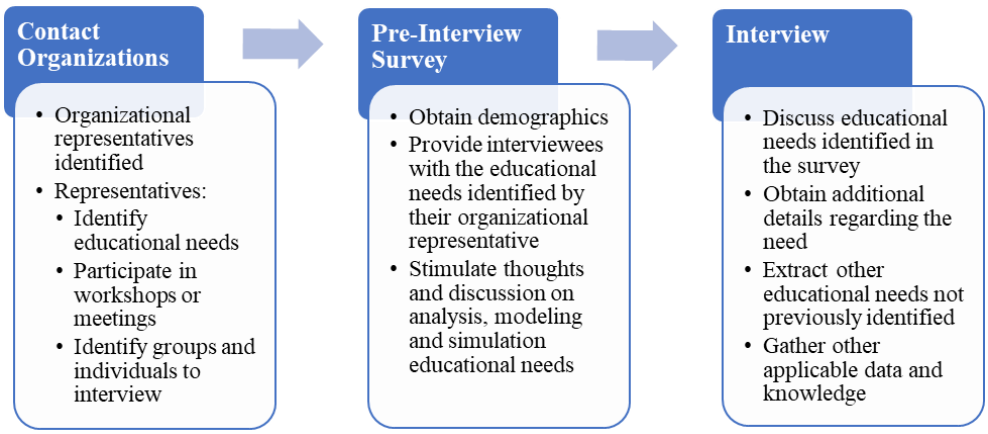


Figure 1. Data Collection Process

Contact Organizations

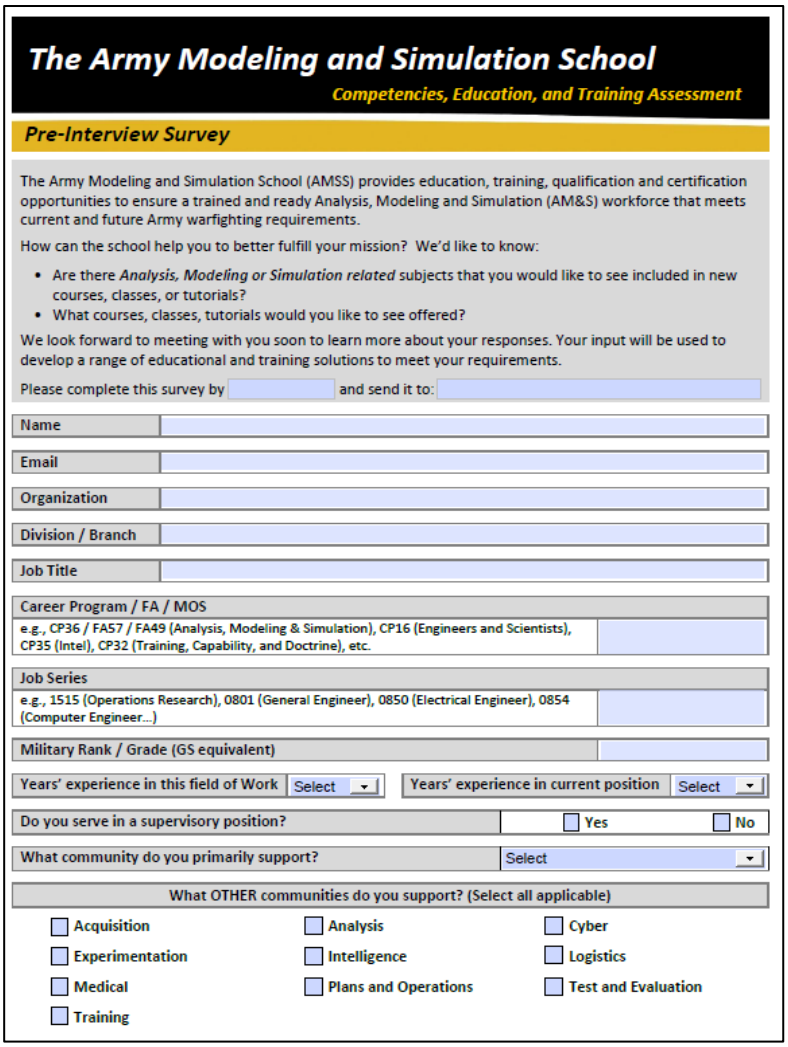
The AMSS analysis team provided each organization's leadership a copy of the effort's memorandum titled "Request Your Organization's Support for the Analysis, Modeling and Simulation Education and Army Communities Training Development Effort" (U.S. Department of the Army Deputy Chief of Staff, G-8, 2017). Organizations then identified one or more representatives who could speak to the organization's use of analysis, modeling, and simulation and discuss current and future prioritized training, education, and course requirements. The analysis team reached out to these representatives to provide additional information about the effort and to obtain initial insights on educational and training needs. When feasible, the interview team tried to gather the representatives together for a group discussion at locations like Fort Belvoir, the Army Modeling and Simulation Forum, and the Mission Training Complex (MTC) Users' Workshop.

The working groups provided a method for cross-organizational communication and often generated new ideas and discussion of potential education and training needs. Each meeting hosted around 10 – 15 representatives who provided educational-need data as a group. Prior to the workshop, pre-workshop surveys were sent to participants. These surveys generated a lot of data on needs (around 75 needs per workshop), which were binned into roughly 25 categories to group similar needs together. During the workshop, attendees discussed the categories of needs, in addition to discussing the mission, tasks, knowledge, skills, abilities, and competencies required by their workforce. The workshop supported the identification of modeling, simulation, and analysis education and training needs across the community at large and supported the determination of the training audience and learning expectations required for future education and training developed to enhance those skills and competencies. Follow-up interviews were arranged following the meetings to gather additional data and to identify additional personnel to interview.

Pre-Interview Survey

Once organizational representatives selected individuals available for interviews, the analysis team provided the contacts with information on the effort, educational needs identified by their organization's representatives and a pre-interview survey. The Pre-Interview Survey provided the AMSS analysis team with quantitative demographic data to capture information about the population being interviewed as shown in Figure 2. It answered questions such as:

- What organizations have the education and training needs?
- Are the individuals responding military, civilians, or contractors?
- What career level are requesting the training (e.g., new employees, mid-career employees, supervisors, and Senior Executives)
- What career fields are using analysis, modeling, and simulation (e.g., Engineering, Operations Research)



The Army Modeling and Simulation School

Competencies, Education, and Training Assessment

Pre-Interview Survey

The Army Modeling and Simulation School (AMSS) provides education, training, qualification and certification opportunities to ensure a trained and ready Analysis, Modeling and Simulation (AM&S) workforce that meets current and future Army warfighting requirements.

How can the school help you to better fulfill your mission? We'd like to know:

- Are there ***Analysis, Modeling or Simulation related*** subjects that you would like to see included in new courses, classes, or tutorials?
- What courses, classes, tutorials would you like to see offered?

We look forward to meeting with you soon to learn more about your responses. Your input will be used to develop a range of educational and training solutions to meet your requirements.

Please complete this survey by _____ and send it to: _____

Name

Email

Organization

Division / Branch

Job Title

Career Program / FA / MOS

e.g., CP36 / FA57 / FA49 (Analysis, Modeling & Simulation), CP16 (Engineers and Scientists), CP35 (Intel), CP32 (Training, Capability, and Doctrine), etc.

Job Series

e.g., 1515 (Operations Research), 0801 (General Engineer), 0850 (Electrical Engineer), 0854 (Computer Engineer…)

Military Rank / Grade (GS equivalent)

Years' experience in this field of Work: Select

Years' experience in current position: Select

Do you serve in a supervisory position? ☐ Yes ☐ No

What community do you primarily support? Select

What OTHER communities do you support? (Select all applicable)

☐ Acquisition ☐ Analysis ☐ Cyber

☐ Experimentation ☐ Intelligence ☐ Logistics

☐ Medical ☐ Plans and Operations ☐ Test and Evaluation

☐ Training

Figure 2. Pre-Interview Survey, Page 1

The survey also requested the interviewee describe their educational or training needs and how they relate to their current job and mission. The identified needs could be the same as the needs identified by their organizational representative, or a different need unique to them. Finally, the survey requested information on any known education or training course that the individual has found to be valuable in addressing needs.

Interviews

Interview questions were developed based on the U.S. Army Training and Doctrine Command (TRADOC) Pamphlet 350-70-14, *Training and Education Development in Support of the Institutional Domain* (2015). Interviews began with needs identified by organizational representatives, pre-interview surveys, or previous data collection efforts. Previous efforts include interviews of other organizations within the focus community or interviews conducted in previous years. The form shown in Figure 3 was used to capture data for each educational or training need discussed. Conducting interviews face-to-face has proven to be a best practice for this data collection effort. Interviews done in person were more flexible and responsive than interviews conducted over the phone. The interview team noted that interviewees were more open to discussions and questions for additional information when in the same physical location. Additionally, the interview team found the ability to see a person's facial and body language enabled them to guide the interviews more smoothly and productively. One observation regarding teleconference interviews was that it is challenging to know if an interviewee is only pondering the question during a period of silence, or if there is confusion as to what the question is asking. Conversely, when the interview team is in the same room as the interviewee, they are able to observe if there is a need for additional clarification of a question or if the individual is only considering their answer before responding.

Title		**Survey Title**	
What topics should this course it contain? *(**Scope**, Focus, Steps, Performance Measures, On-the-Job Conditions Required for education)*	Learn: •		
What knowledge and skills would you want to gain or enhance through the class? *(Fully Trained Knowledge and Skills)*	Knowledge of: • Skill to: •		
What would the outcome of the class be? "The ability to…"? *(Outcome Statement, Performance Measures)*	Ability to…		
How is your mission impacted without this training? (Background, aspects of this need and its involvement in the mission) *(Tasks and Mission Analysis - TP 350-70-14, pg. 11)*			
What tasks / steps do you perform related to this training need? *(Steps Defined - TP 350-70-14, page 73)*	1.		
Are there any standards associated with this need and the tasks/steps performed?	☐ **Yes** ☐ **No**	**Standard:**	
Does your organization have an SOP or technical manual that covers this task?	☐ **Yes** ☐ **No**	**Doc Title:**	
Who should we contact to obtain the SOP or technical manual?			
If you could design a practical exercise for the course that targets your organization's needs, what would it involve? *(On-the-Job Conditions - TP 350-70-14, p 70, Operational Environment, Performance Measures)*	Given…		
Desired level of proficiency?	☐ **Introductory** ☐ **Intermediate** ☐ **Advanced**		
Are there any prerequisites a person should have before taking this education (experience, knowledge or skills)? *(Minimal Knowledge or Skills)*	•		
Course duration?			
What mode would be preferred? (select all applicable)	☐ **Distance Learning** ☐ **Resident** ☐ **Mobile Training Team**		
Notes			

Figure 3. Interview Questions

While face-to-face interviews are preferred for the reasons describe above, that method does incur greater time, cost, and risk should the interviews be cancelled. Additionally, face-to-face is not always feasible due to team distribution, availability of interviewees, and COVID 19. The analysis team adjusted the process to ensure a broad data collection using distributed technology. By using telephonic interviews, the analysis team was able to obtain data from geographically distributed organizations where there were only one or two individuals at certain location. It also allowed the analysis team to interview individuals who had very limited availability and could only accommodate the interview for 1 hour. As a result of COVID 19, AMSS initiated the use of the Blackboard Collaborate web conferencing application, which enables virtual collaboration including presentations, video, and audio. Within Blackboard Collaborate, there is a "raise hand" function to discourage people from speaking over each other. Going forward in the post COVID 19 environment, AMSS and the analysis team will be able to use Blackboard Collaborate as a way to conduct distributed interviews.

Table 2. Interviews by Army Community

Community	Individuals Interviewed
Acquisition	70
Analysis	70
Cyber	20
Experimentation	37
Intelligence	13
Logistics	29
Medical	26
Test & Evaluation	32
Training	73
Total	**370**

Populations Interviewed by Army Community

Interviewees were asked to identify for which Army community they were providing educational needs when being interviewed. This means a single organization could provide educational needs for several communities. The community association provided quantititive data on the number of interviews by community focus area as seen in Table 2. For example, the number of interviews associated with the focus area of Cyber modeling and simulation. This metric provided AMSS insights on where workforce members reside and context for the education and training needs requested.

Population Interviewed by Experience

During the interview process, the analysis team requested demographics of the interviewees to better understand what education and training is being requested by new employees, mid-career employees, supervisors, and Senior Executives. Each surveyed and interviewed individual was asked how many years of experience they had in the field of analysis, modeling, and simulation. This was not exclusive to the job they currently retained but included their full career experience. Based on the data the analysis team collected, interviews to date have been able to obtain educational need data evenly from all experience categories as shown in Figure 4.

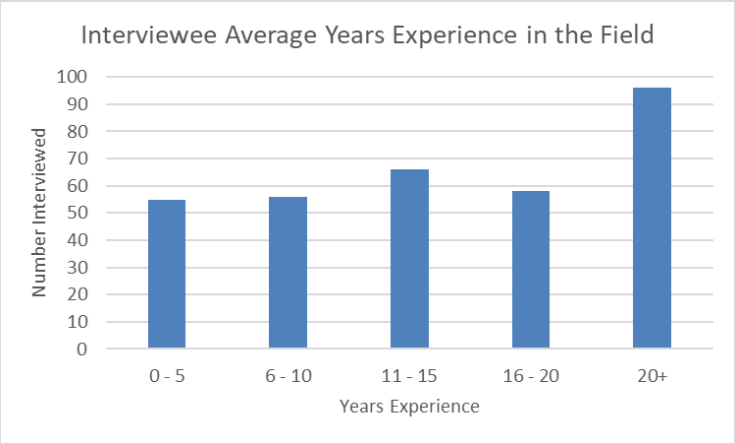


Figure 4. Interviewee Average Years' Experience in Field

FINDINGS

Major Educational Need Categories

To synthesize the data, the analysis team grouped similar educational requests into major categories as shown in Figure 5. Initially category themes were scoped using the civilian "CP36 Analysis, Modeling and Simulation Functional Competencies" (Army Civilian Training, Education and Development System, 2013, Annex C and D). As data was collected from surveys and interviews, the categories were further refined using text analytics of the qualitative data, which identified common requests, knowledge, and skills.

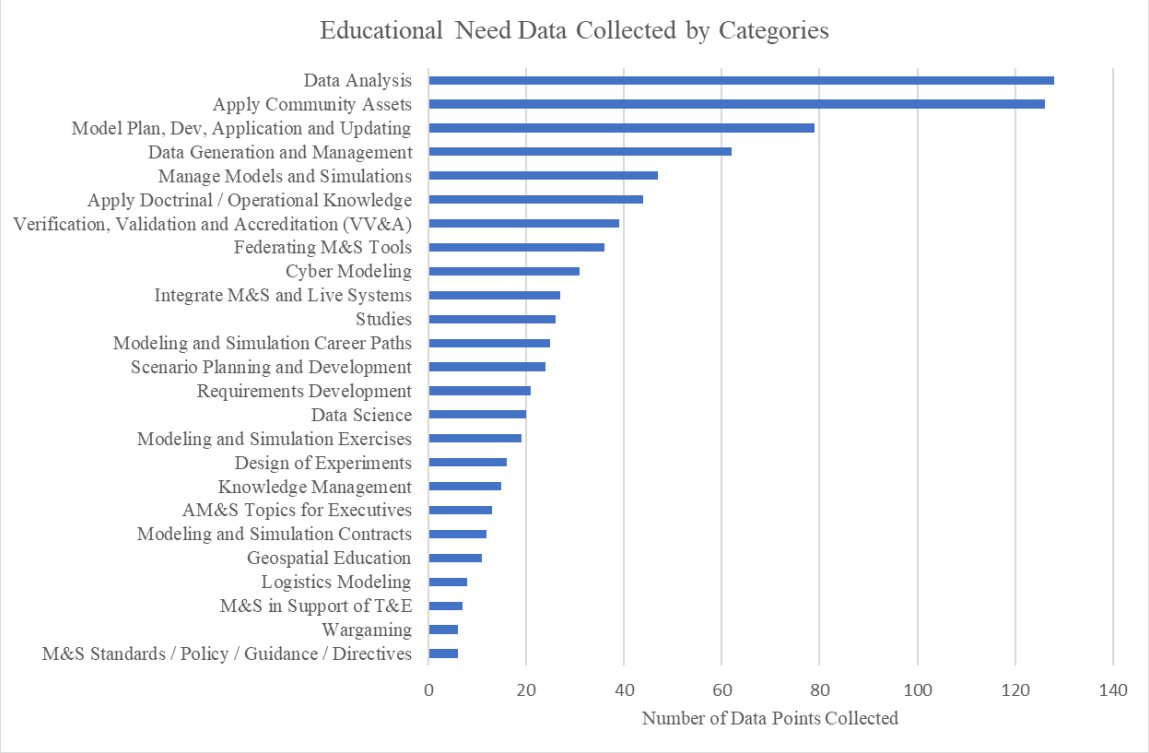


Figure 5. Educational Need Data by Category

The category containing the most requested educational needs was Data Analysis. Needs in this category included:

- Army methods of conducting data analysis (e.g., in support of Test and Evaluation or an Analysis of Alternatives)
- Tools and programming for data analysis (e.g., R programming or Visual Basic for Application)
- Surveys in support of data collection and analysis
- Multi Attribute Decision Making
- Identifying anomalies in data sets

Many needs within the major category of Data Analysis can be addressed with existing industry training and Army Organizations are reaching out for classes on statistical analysis tools such as R programming or other similar tools. To facilitate identifying courses that already exist, the AMSS established a database of known education and training at universities, industry offerings, and within the Joint Forces. This information is published to a spreadsheet accessible on AMSO's website under the CP36 "Education and Training Opportunities" section.

The Apply Community Assets category of needs contains educational and non-educational needs that focus on the desire to share information across the Army. Questions asked by the interview team included:

- What models, simulations, and tools are available?
- What models, simulations, and tools are other organizations using?
- What best practices have others developed?
- How to find Army and Joint data?
- When should the Army use certain models, simulations, and analytical tools?
- How can an Army careerist obtain developmental assignments at other organizations to understand better their roles, functions, methodologies, and processes?

Efforts have been made in the past to capture some of this information and make it available to the workforce, however, the data supports that the need is still persistent across all Army communities. AMSS would like to continue to gather data on the specifics of what information would most benefit the workforce from sharing, how best to make it consumable, and how to keep the information up-to-date and relevant in a changing Army environment.

Potential Policy Impacts

The analysis effort also identified needs with non-training and education solutions. One need that was identified as impacting the modeling, simulation, and analysis workforce is inconsistent approval to load models, simulations, and tools onto Army networks. Data gathered identified several facets to this issue including:

- Understanding the Risk Management Framework (RMF) process to submit documentation for approval
- Navigating the RMF process in a timely manner to support mission needs
- Disparate results (approval or denial) by physical location

The first facet may be addressed by training and examples on how to navigate the RMF process, however, the timelines associated with the process and differing results point to a non-educational solution. Interviewees reported obtaining workforce members with tool-specific skills to meet a mission requirement, but not being able to obtain approval to use the tools. This has resulted in wasted assets and extended schedules. Organizations have also reported having difficulty getting the same Army model approved at all their geographical locations. An Army-developed model may be approved at one location within the Continental United States but denied at another. Many interviewees expressed the desire for consistent application of software regardless of physical location.

LESSONS LEARNED

Common Cross-Army Analysis, Modeling, and Simulation Educational Needs

There are many cross-community educational needs identified by the data to date. Application of a skill or tool may vary by organization, mission, or problem set, but the core educational skills are frequently the same. Table 3 shows

where data were collected for each major category by Army community. Highlighted in yellow are need categories requested by all Army communities. These include the desire to understand and use existing Army assets; understand and apply Army doctrinal and operational knowledge; data analytic skills; and model planning, development application and updating. Highlighted blue are the major categories where data were collected from all but one community. These needs include data generation and management, managing M&S, and requirements development. Table 3 demonstrates that educational and training solutions can address many users across Army communities and organizations.

Table 3. Educational Needs across Army Communities

Major Educational Need Category	Acquisition	Analysis	Cyber	Experiment	Intelligence	Logistics	Medical	Test and Evaluation	Training
Analysis, Modeling and Simulation Topics for Executives	X	X					X		X
Apply Community Assets	X	X	X	X	X	X	X	X	X
Apply Doctrinal / Operational Knowledge	X	X	X	X	X	X	X	X	X
Cyber Modeling	X	X	X				X	X	X
Data Analysis	X	X	X	X	X	X	X	X	X
Data Generation and Management	X	X		X	X	X	X	X	X
Data Science	X	X	X	X			X		X
Design of Experiments	X	X	X	X			X	X	
Federating Modeling and Simulation Tools	X	X		X	X	X		X	X
Geospatial Education	X	X							X
Integrate Models, Simulations, and Live Systems	X	X		X				X	X
Knowledge Management	X	X		X		X			X
Logistics Modeling				X		X	X		
Modeling and Simulation in Support of Test and Evaluation	X							X	
Modeling and Simulation Standards / Policy / Guidance / Directives	X	X							X
Manage Models and Simulations	X	X	X	X	X	X		X	X
Model Planning, Development, Application and Updating	X	X	X	X	X	X	X	X	X
Modeling and Simulation Career Paths	X	X	X					X	X
Modeling and Simulation Contracts	X				X	X	X	X	X
Modeling and Simulation Exercises				X	X	X	X	X	X
Requirements Development	X	X	X	X		X	X	X	X
Scenario Planning and Development	X	X	X	X	X		X		X
Studies	X	X		X			X	X	
Verification, Validation and Accreditation (VV&A)	X	X				X	X	X	X
Wargaming		X		X					X

Other Factors Impacting Modeling, Simulation, and Analysis Education

Interviewees were asked what other factors impact their ability or desire to obtain education in support of their current and future work. Most responses fell into one of three categories: Time Available, Organizational Support, and Return on Investment.

Time Available

The most common answer to why workforce members did not pursue education was a lack of available time. Interviewees cited their current workloads did not provide much extra time for education and the mandatory training

required by all personnel took up any free time available. Interviewees did indicate if education was provided easily via an online forum or a Mobile Training Team that came to their location, their ability to schedule in time was much greater than a course that required traveling to another location. Interviewees also indicated the desire to have quick-view information like help sheets or self-paced courses, which allow greater flexibility around work requirements.

Organizational Support

Organizational support was defined as an individual's ability to obtain permission from their supervisors to participate in education and the availability of organizational funds to pay for education. Data collected on organizational support varied greatly by interview. Some interviews indicated a complete organizational support with permission and available funding, while other interviews encountered one or both lacking.

Return on Investment

Many interviewees recounted stories of attending courses that appeared to be focused on the elements of training they desired, only to be disappointed with the content. Workforce members want to ensure the time they invest into education and training will address their specific needs and add value to their current and future mission. At present, Army CP36 maintains guidelines and provides for the systematic training and development of Army CP36 career civilians who work in the functional areas of analysis, modeling, and simulation. However, there is not a complete solution to determine if an industry or university provided course is valuable from an Army application perspective.

PATH FORWARD

AMSS plans to continue to gather data to understand the Army modeling, simulation, and analysis educational needs better, and develop ways to address those needs. Currently AMSS is pursuing both educational solutions and non-educational solutions to address the identified needs.

Educational Solutions

The preponderance of data collected for this effort were to address the study question of "What education does the Army modeling, simulation, and analysis workforce require for current and future mission?" AMSS works to address those needs through the identification of existing solutions and the development of new courses.

Identification of Existing Education

Research has been conducted to identify educational courses available in industry, universities, and within the Armed Forces. Potential courses have been identified, gathered into a database, categorized and made available for searching.

Data Informed Development

When no existing education or training is available, or the known course does not meet the captured needs, AMSS follows processes to define and articulate the educational needs. The school follows the processes outlined in TRADOC Pamphlet 350-70-1 *Training Development in Support of the Operational Training Domain* (2019). Each year, AMSS holds a critical task selection working group to review the data collected during that year's efforts and discuss the educational needs captured. AMSS's design and development team uses approved critical tasks to create lesson plans in accordance with TRADOC Regulation 350-70, *Army Learning Policy and Systems* (U.S. Department of the Army, 2017) and TRADOC Pamphlet 350-70-14 (U.S. Department of the Army, 2015).

AMSS is currently addressing the following needs:

- Data Science for the Rest of Us
- Analysis, Modeling, and Simulation Topics Course (Includes topics like Overview of M&S Communities, Scenario Development, Database Management, and Database Design)
- Army Verification, Validation, and Accreditation (VV&A) of Models and Simulations
- Introduction to Wargaming

Delivery of Courseware
Courses will be addressed using a variety of delivery methods including distance learning, mobile training teams, and classroom environments. With current increased need for distance learning, AMSS is leveraging the Blackboard Collaboration program to enable distance learning and provide the video face-to-face interaction with additional chat functions to encourage class discussions. AMSS has also hosted 1-week classroom courses and is looking into adding additional courseware to meet the identified needs.

Non-educational Solutions

During the collection effort, additional data was received indicating non-educational needs that impacted the modeling, simulation, and analysis workforce. AMSS along other parts of AMSO hope to leverage this information to aid the workforce.

Analysis, Modeling and Simulation Community Communications
Interviewees have expressed an interest in receiving periodic updates on what the Army is doing with models and simulation, best practices, new analytic methodologies, and available tools and data. Potential existing sources include AMSO website, the milSuite site SimOpsNet for Military FA57 personnel and Civilian CP36 careerists, and the Army Career Tracker website.

Policy, Procedure, Guidance Considerations
Interview data that points to policy or procedure changes are being considered and raised up to the Army as appropriate. One recent example is the further exploration of the educational topic of Verification, Validation, and Accreditation (VV&A). The Army Deputy Chief of Staff, G-8, is the proponent to update the Department of the Army Pamphlet (DA Pam) 5-11 *Verification, Validation, and Accreditation of Army Models and Simulations* (1999), which provides general guidance on VV&A within the Army. Data collected from the educational interviews are being supplemented by follow-on discussions with subject matter experts to clarify further what information and examples are being requested by the workforce.

Call for Additional Data

AMSS is requesting additional information to clarify the educational and training needs collected to-date and identify new needs.

Details for Identified Educational Needs
AMSS is seeking clarifying information to further detail what educational material needs to be included in future course curriculum to meet the expressed needs. Existing forums such as the Interservice/Industry Training, Simulation, and Education Conference (I/ITSEC); Army Modeling and Simulation Gaps Forum; Army Modeling and Simulation Operations Forum; Army Operations Research Society; and the Military Operations Research Society are being leveraged for gathering information and conducting meetings with interested individuals.

Additional Modeling, Simulation, and Analysis Needs
The analysis team has collected information from 370 individuals; however, there are many more Army civilians and military who interface with modeling, simulation, and analysis. As the Army changes and missions change, the educational needs continue to change and be refined. For future educational courses to be relevant, the data will need to continue to be captured from as many sources as possible.

Non-Educational Needs for Army Modeling, Simulation, and Analysis Careerists
AMSS, under the direction of AMSO, is seeking to gather information regarding issues that impact the Army's use and sharing of models, simulations, tools, and data. These may be policy changes, information sharing, best practice documenting, or other non-educational functions, which can enable greater modeling, simulation, and analysis usage across the Army.

SUMMARY

AMSS is gathering valuable data to facilitate the education of the workforce and support the further use of models, simulations, and analytical tools and methodologies across the Army. Efforts will continue to gather data, update findings, and inform future course development to meet current and developing needs. AMSS continues to seek more individuals willing to participate in interviews to identify educational needs and provide subject matter expertise during the development of need solutions. For additional information on the needs collected and educational critical tasks, or to participate in this effort, please contact AMSS.

ACKNOWLEDGEMENTS

Execution of this study occurred with the help of many participants from each of the Army communities, Headquarters Staff, Joint, and Industry partners. AMSO is very appreciative of all who have assisted.

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