

Scenario-based Emerging Technologies Workshop for Military Leaders

Dr. Aikaterini Bagiati, Massachusetts Institute of Technology

Aikaterini (Katerina) Bagiati, Ph.D.: Having acquired a Diploma in Electrical Engineering and a Masters Degree in Advanced Computer and Communication Systems at the Aristotle University in Greece, and after having worked as a software engineer, and as a CS educator in both formal and informal settings for 10 years, in January 2008 I decided to leave Greece and get enrolled at the Graduate Program in the pioneer School of Engineering Education at Purdue University.

In August 2011 I acquired my Doctoral Degree in Engineering Education. After serving as a postdoctoral associate within the MIT-SUTD Collaboration for three years, and 7 years as a research scientist, I am currently appointed as a Principal Research Scientist at the MIT Open Learning Office.

My research interests reside in the areas of Early Engineering, Engineering and Technology Curriculum Development and Teacher Training, Online Education, and International Educational Development.

Specialties: Engineering and Technology Education, Instructional Design, STEM Curriculum Development, Digital/Online Education

Ms. Kathleen D Kennedy, Massachusetts Institute of Technology

Senior Director, MIT Horizon; Executive Director, MIT Center for Collective Intelligence; former President, MIT Technology Review; former President, MIT Enterprise Forum

Dr. Andrés F. Salazar-Gómez, Massachusetts Institute of Technology

Andrés F. Salazar-Gómez is a computational neuroscientist with multidisciplinary training and committed to reshaping higher education in developing countries. Andrés boasts 10+ years of expertise in brain-computer interfaces and human-robot interaction research, with a robust background in biomedical engineering, experimental design, data science and quantitative methods. His focus on evidence-based and policy-informed approaches to educational programs gives him a unique perspective in the field of tertiary, professional and continuing education. Andrés is focused on advocating data-driven insights to enhance educational research and assessment towards accessible high-quality education, for everyone, everywhere, with special interest on AI education.

Prof. Joshua Siegel, Michigan State University

Prof. Cynthia Breazeal, Massachusetts Institute of Technology

Professor Media Arts and Sciences, MIT Media Lab; Director MIT RAISE Initiative (Responsible AI for Social Empowerment and Education); MIT Dean for Digital Learning

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Andrés F. Salazar-Gómez
Massachusetts Institute of
Technology

Joshua Siegel
Michigan State
University

Aikaterini Bagiati
Massachusetts Institute of
Technology

Kathleen Kennedy
Massachusetts Institute of
Technology

Cynthia L. Breazeal
Massachusetts Institute of
Technology

Abstract

In January 2021, the Massachusetts Institute of Technology (MIT) entered into a long-term agreement with the Department of the Air Force (DAF) and the Department of Defense (DoD) to design and offer a new educational research program focusing on training on Artificial Intelligence (AI). “The goal of this collaboration is to design and advance educational research activities that promote maximum learning outcomes at scale for learners with diverse roles and educational backgrounds, ranging from Air Force and DoD personnel to the general public” [1]. This program has been running for four years and offers different learning tracks addressing varied groups of USAF (United States Air Force) and DoD employees, based on their unique professional needs and backgrounds, through various in-person or online learning modalities.

This paper presents the implementation and evaluation of an in-person four-day long workshop that took place in June 2023 at the MIT campus. Sixty learners, leaders from the DAF, USSF (United States Space Force) and from the DoD aligned Federal agencies and uniformed personnel from key US allies and NATO partner nations, were selected by the DoD to participate in the in-person activities. The MIT Innovation & Technology Workshop was a rigorous, multi-day in-person team-based workshop that coupled MIT’s approach to innovation with lectures into emerging technologies framed around an interactive scenario. Scenario-based learning was employed as the main pedagogical model followed by hands-on interactive exercises. Emerging technologies including IoT, Big Data, AI, and Blockchain were embedded in the curriculum. The goal of the workshop was for learners to come away from this program with a depth of knowledge and language for emerging technologies and innovation in specific focus areas, enhance critical thinking skills, and clearer sense for real-world applications. No preexisting knowledge on said topics was required for participation in the activities.

During the workshop, learners were also invited to participate in its evaluation research study through pre- and post- self-assessment questionnaires. All data collected focused on the workshop’s content and implementation, as well as relevance to the participants’ current and future work activities at their respective units and agencies. Findings of this study are currently being used to guide future iterations of the program and inform innovative approaches to better scale up hands-on workshops both in person and online.

Keywords: Scenario-based learning, red team/blue team, emerging technologies, innovation, IoT, big data, AI

1. Introduction

The impact of Artificial Intelligence (AI) in private industries, civil society, governments and the environment is undeniable [1-4]. The fast pace of innovation and adoption of new technologies requires that society continuously learns about the challenges and opportunities of such technologies, so these are properly adopted [5]. The government of the United States, aware of the need to train its workforce in such technologies, mandated to "...adopt Artificial Intelligence (AI) at speed and at scale", and required the Department of Defense (DoD) to "...prioritize educating and training its incredibly diverse and talented workforce to deliver AI capabilities at scale across the Department." [6]. As part of a larger engagement with the U.S. Department of the Air Force (DAF) and DoD, MIT developed and delivered a four day, immersive and interactive scenario-based workshop featuring concepts related to innovation ecosystems and frameworks, intrapreneurship ("entrepreneurship within the firm.") [7], and three foundational Deep Technologies [8]. The fourth day of the workshop comprised a half-day DAF-led activity to apply the skills and concepts learned, involving challenges presented by senior DAF leadership with a read-out to the DAF Chief Scientist.

- *Workshop goals*

The primary goals of the workshop were to improve comfort and facility with innovation and to turn learners' views of emerging technologies from that of a foe to a (potential) friend, as well as broad-based coverage of critical vocabulary necessary for scouting, selecting, designing, and deploying highly technical solutions. It aimed to foster a culture of experimentation, drive innovation, and encourage entrepreneurship within the DoD context.

A critical aspect of the workshop was the ability to think at the intersection of existing capabilities and disciplines, enabling learners to imagine futures that were once considered impossible. Learners were expected to gain exposure to, and become conversationally fluent in, the vocabulary of these emerging technologies, understanding their applications and how to apply them in their professional contexts. The approach included breaking down large problems into smaller, manageable components using available technical tools. A significant emphasis was placed on connecting to innovation, encouraging the visualization of problem-solving through the integration of emerging technologies, and the thoughtful identification and management of resources.

The curriculum was tailored to serve the varied needs of learners from different roles within the DAF, the DoD and its allied partners. This customization was crucial in ensuring that the learning was relevant and applicable across a spectrum of professional contexts. The workshop also sought to empower learners to disseminate education across smaller teams, facilitating knowledge diffusion through the DAF, its partners and allies. Additionally, this initiative strived to motivate further study, enhance self-efficacy, spur additional professional development, and ultimately contribute to defense readiness.

2. Participants

The workshop was offered to sixty hand-selected leaders from the DAF, USSF (United States Space Force) and from the DoD aligned Federal agencies and uniformed personnel from key US

allies and NATO partner nations. No prior knowledge in innovation, emerging technologies, AI, programming, or computer science was required to be part of the activities.

With the goal of continuous improvement and seeking evidence-based training approaches, the workshop included a research component. For this study, the research protocol, consent and its instruments were approved by the MIT IRB office (COUHES), and the DAF Human Research Protection Office (HRPO). All research participants received commander approval to be invited to the study as well as informed consent.

3. Workshop structure

The workshop was developed to promote learning about innovation and emerging technologies through team-based, hands-on, scenario-based learning. To support such an approach, the backbone of the workshop was a series of custom-developed activities and educational materials. The scenario implemented focused on a red-team/blue-team adversarial case, used as the backdrop against which key concepts of innovation and emerging technologies were initially introduced, and as a catalyst in driving constructive – and creative – competition among learners.

- *Red team/blue team adversarial scenario*

The workshop consisted of a combination of pre-readings, presentations, lecture time, and scenario-based activities. These activities required grouping learners into ten (10) different “blue” or “red” teams (of six participants), each representing an integrated circuit manufacturing company, in the context of other adversary companies. The activities required each team to outsmart its competition (opposing teams) using the newly acquired knowledge in innovation and emerging technologies. In this regard, a red-team/blue-team adversarial scenario was implemented to better engage learners with the material and the hands-on activities.

Red-team/blue-team exercises date back to the cold war era, when the US started running simulations of attacks from red team adversaries, while deploying its own blue defense team to counter the attack. “Blue teams represent the intent, objectives and interests of [a] friendly force”, while red Teams represent the “...motivations, intentions, behaviors and anticipated actions” of adversaries [9]. Through this process, blue teams “can 1) test and evaluate their own course of actions; 2) identify possible opportunities to exploit weaknesses of the Red Team...” [9].

3.1 Curriculum

- *Innovation*

Innovation was introduced as a means of bringing ideas from inception to impact [10]. Concepts included catalytic questioning, identifying the job to be done, considering various stakeholder perspectives, and cultivating a supportive innovation environment as part of a broader innovation ecosystem. “Mission-driven”, “bottom up” and “top down” innovation were discussed, as well as concept evaluation and selection. These topics were selected as being essential to driving comfort with discussing and adopting emerging technologies, as without innovation, technologies – no matter how impressive – rarely find their best-fit home.

- *Emerging Technologies*

The technologies explicitly covered were the Internet of Things (IoT), Big Data, and AI. The DAF selected these topics, with input from the MIT curriculum team, as being essential to understand and embody characteristics representative of other critical emerging technologies.

- The IoT was selected as a means of presenting methods for “digital OODA (Observation, Orientation, Decision, and Action),” a commonly used framework for making critical and sensitive decisions [11]. Sub-technologies covered included sensing, connectivity, inference, and actuation, key enabling factors for the IoT [12], as well as applications ranging from instrumentation of people, processes, places, and products to DAF-specific opportunities.
- With IoT serving as the intellectual foundation for getting information out of a system and into the location of most use, the teaching team introduced Big Data as a framework for aggregating and rapidly and reliably accessing diverse information captured from varied sources. Key concepts included data aggregation technologies, scaling, search-and-sort, network and security considerations, and challenges in over-scaling data.
- AI was introduced as a means of turning information – from Big Data or otherwise – into insights for decision-making. Topics included asking the appropriate question with the right data, data presentation and organization, evaluation metrics, adversarial and generative AI, challenges and opportunities related to determinism and explainability, as well as intentional and incidental algorithm biases.
- Beyond these three technologies, additional topics covered included integrated circuit manufacturing, supply chain, and blockchain. These were part of the exercise backdrop for the scenario-based learning experience. By integrating concepts like supply chain management and integrated circuit manufacturing, the workshop organizers expected it would offer a comprehensive view of how these technologies interact within a broader system, providing participants with a holistic understanding crucial for their roles in defense and national security.

3.2 Learning journey

The learning journey followed a scaffolded approach, with each innovation concept and technology building upon, and incorporating, those priorly introduced. The educational activities included pre-workshop readings, instructor presentations, interactive lectures, four small-teams exercises connecting theory and practice, Q&A sessions, and one large-teams, open-ended activity. Figure 1 depicts a detailed description of the learning journey throughout the four days.

The interactive lectures were led by MIT and MIT-affiliated faculty; presentations were led by MIT faculty, staff, and affiliates, and representatives from the DAF and DoD. Questions were encouraged, and the interactive lectures adapted to respond to the learners’ needs in real-time, while still respecting the expected outcomes and broader learning objectives. A brief field trip on day 1 showcased innovation and technology in practice.

- *Small-team exercises*

The small-team exercises were run in groups of six students, split across five red and five blue teams. Learners were grouped to include diversity of roles, experience, and background. Each team was provided a facilitator familiar with the program content and exercises, but not necessarily a technical or innovation expert. During the team-exercises, instructors floated through the room,

checking in with teams and taking questions. Each exercise was followed by an instructor-facilitated out-brief in which all “same-side” teams presented their solutions and common themes, challenges, and opportunities were discussed.

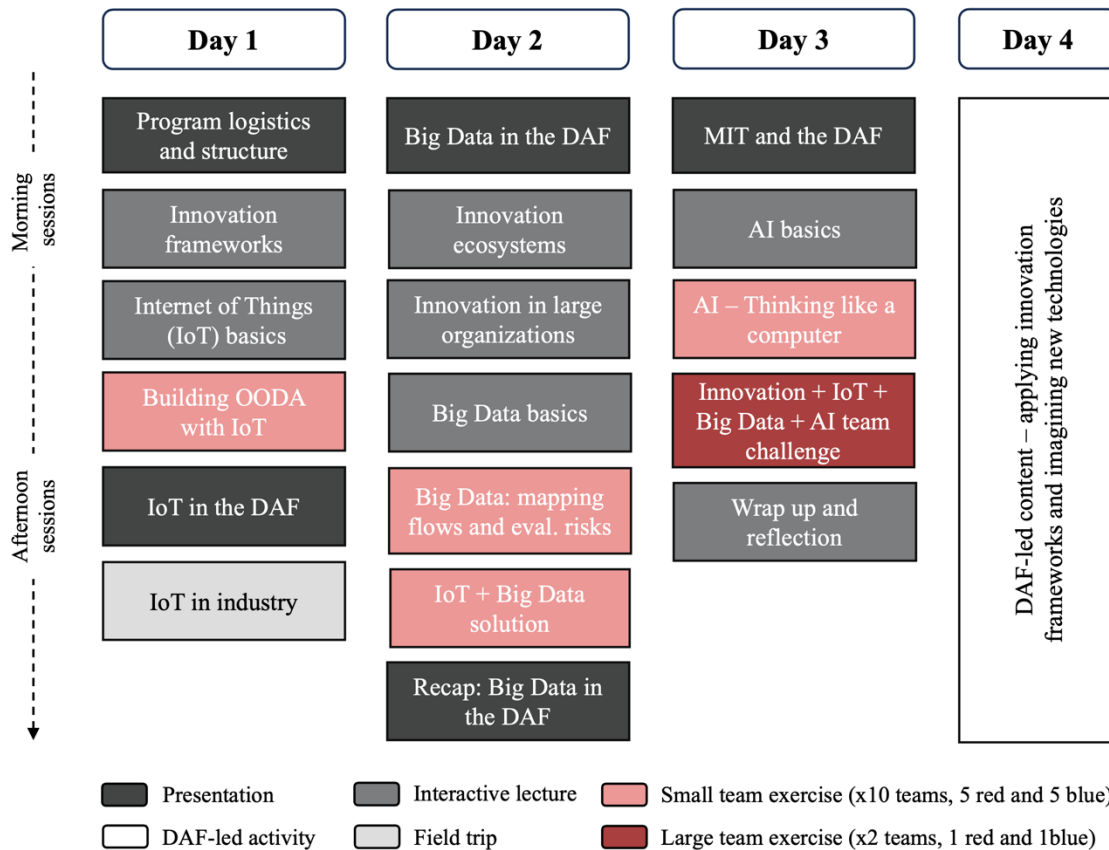


Figure 1. Workshop learning journey identifying the content delivered and the type of activities implemented. Acronyms: IoT (Internet of Things), OODA (Observation, Orientation, Decision, and Action), DAF (Department of the Air Force), AI (Artificial Intelligence).

The specific content covered in each small-teams exercise was:

- *Small teams exercise 1:* This exercise encouraged learners to “defer, define and design,” using their newly acquired innovation and IoT knowledge to define a job to be done, then design OODA systems using IoT capabilities without knowing *how* to implement the solution. This exercise aimed to build confidence in “creativity without constraints.” It also provided an opportunity for stakeholder identification and the use of innovation frameworks, such as *job to be done* and *catalytic questioning*. Initially learners struggled productively and then settled into a comfortable rhythm as facilitators helped them balance comfort with uncertainty.
- *Small teams exercise 2:* This activity invited learners to think holistically about the data footprint of a fictional organization, mapping data sources, consumers, and flows, and evaluating risk and opportunities.
- *Small teams exercise 3:* The third exercise rehashed exercises 1 and 2 to reinforce key concepts. For this exercise, learners had less than half the time offered for exercises 1 and 2, so completing it within the allotted time demonstrated mastery and built confidence in

the learners' ability to apply the skills so far learned. It also helped to refine teamwork and team communication dynamics.

- *Small teams exercise 4*: This activity walked small teams through the process of designing an AI system by using computational thinking, relying on visual aids to develop a set of classification rules for images. This approach illustrated the transformative power of computers, i.e. if 6 participants developed 10 effective classification rules in one hour, a computer could develop a million in a minute. The purpose of this exercise was to encourage the use of the “right tool for the job.”

- *Large team exercise*

The *large team exercise* combined all the red, and all blue teams into two different groups, to apply their combined, “same side”, innovation and technology knowledge to imagine plausible next steps for their integrated circuit manufacturing company. At the end of the activity learners were asked to present their plans and compete for a prize: the best plan would determine the winner’s side. Learners could present their solution in the manner of their choosing, from dramatic skit to slideshows. The proposed solutions were judged by the instructors and representatives from the DAF and included an intensive review and feedback session.

The last day of the workshop – day 4 – was only available to DAF personnel and led by the DAF, comprising a reflection and application of the learned concepts to solve real and pressing DAF and DoD challenges.

3.3 Tailored materials

Three sets of materials were prepared, red team and blue team workbooks, and an extensive facilitators guide. For learners, all activities were guided by the associated workbook, specifically developed for each team (blue or red). Each facilitator also had its own facilitation guide. MIT developed the workbooks with modularized content to be doled out after the introduction of key innovation and emerging technologies concepts. The workbook included pre-reading, exercise instructions, tips and tricks, reflection questions, evaluation matrices, opportunities for additional reading, and scenario updates. The facilitators guide included detailed learning objectives, additional exercises, hints, and explanations. These materials were pivotal in framing the narrative of the workshop and guiding participants through the learning process. Each workbook was designed to be used stand-alone as a learning reference after completion of the workshop, though slides and other materials were also provided to participants. For some exercises, additional materials were provided – from printed maps and graphics to blank flip boards and markers to crafting supplies.

4. Pedagogy

The MIT Innovation & Technology workshop blended traditional and innovative pedagogical techniques. The approach was designed to stimulate curiosity, foster creativity, and enhance problem-solving skills, while managing cognitive load and ensuring the retention of core concepts. Our pedagogical approach centered around team-based, hands-on activities, via scenario-based learning. This is an effective strategy that engages learners through real-life simulations and role-play via the concept of “embodiment” [13]. MIT-trained facilitators played a crucial role in challenging participants and offering external perspectives, thus enriching the learning experience.

The workshop's methodology was designed to be immersive and interactive, combining theoretical knowledge with practical, hands-on activities. Integrating a variety of dynamic pedagogies, MIT's approach not only imparted knowledge but also fostered a lifelong passion for learning and innovation. This approach's efficacy lies in its ability to engage learners deeply, challenge them appropriately, and support them adequately, in preparation for the complexities of the modern technological landscape.

The workshop also reflected MIT's motto *mens et manus* ("mind and hand" in English) and "drinking from the firehose" philosophy, with a fast-paced, relentless flow of information and opportunities to practice theory and application in real and imagined scenarios. The *mens et manus* emphasizes the integration of theoretical knowledge with practical application, with real-world scenarios solidifying the learners' understanding through experience. All lectures promoted interactive participation to foster an adaptive learning environment. This approach was complemented by scenario-based practices, in which learners were immersed in scenarios that required them to assume roles and work collaboratively, enhancing their engagement and understanding.

Key to MIT's approach was its ability to expose learners to a broad spectrum of concepts rapidly, encourage creative problem-solving, and facilitate the application of theoretical knowledge in practical contexts. A fine balance was maintained between challenging learners and not overwhelming them. This approach involved closely monitoring the cognitive load and adjusting the complexity of the material accordingly. Interleaving was implemented to ensure the retention of core ideas; by reintroducing key concepts in different contexts throughout the workshop, learners solidified their understanding and long-term retention. Given no prior knowledge of the topics or technologies was required, scaffolding was crucial to balance the introduction of new concepts with the reinforcement of existing knowledge. This approach ensured comprehension without overwhelming the learners.

The use of real-world examples was vital for demonstrating the content's value and relevance. This principle ensured that learners saw the practical implications of their education, fostering a deeper connection with the material. We promoted participant engagement by creating an open and receptive environment to questions, commentary, and experience-sharing. Learners were instructed – and reminded – that MIT is an environment where we expect learning to occur without fear of failure. Finally, team dynamics and other professional skills were an integral part of the program, with latent opportunities for learning as unfamiliar teams "formed, stormed, normed, and performed" throughout the exercises.

5. Research

5.1 Research methods

Data collected used a mixed methods approach, via a pre- and post-questionnaire that explored the learner's expectations, their experience with the content, pedagogies, and learning materials. The material assessed the content difficulty, its structure, the workshop's time requirements and workload. Regarding pedagogy, participants were asked if they were presented with the workshop's learning objectives, had knowledge connected with real-life examples, and if they

were encouraged to participate in a community of learning. Finally, participants were asked about the workshop’s relevance – connection of the material and activities with their work, if they found it interesting, and their overall satisfaction.

5.2 Results

The 68.3% (41) and 81.7% (49) of learners gave positive consent and responded to the pre-questionnaire and post-questionnaires, respectively. The learners that responded to *both questionnaires* were 28 – 68.3% and 57.1% of pre- and post-questionnaire respondents, respectively. Current results represent all consent data, not only matching learners in both pre- and post-questionnaires.

- *Demographics*

Overall, most of the questionnaire respondents were white males in an officer position with a Master’s degree as their highest level of education. All women that participated in the research were white officers.

Table 1 presents the gender that best identified pre-questionnaire respondents. It presents 90.2% (37) reported their gender to be *male*, 7.3% (3) *female*, and 2.4% (1) *preferred not to respond*. For the post-questionnaire, 77.6% (38) reported their gender as *male*, while 14.3% (7) responded *female*, and 8.2% (4) *preferred not to respond*: there was an increase in the response participation from non-male learners.

Table 1. Gender that best identified learners (% , response count)

Questionnaire	Male	Female	Prefer not to respond	Total
Pre- questionnaire	90.2%, 37	7.3%, 3	2.4%, 1	41
Post- questionnaire	77.6%, 38	14.3%, 7	8.2%, 4	49

Table 2 reflects the responses to the group or role participants had in the military. For the pre-questionnaire, learners responded 73.2% (30) were *officers*, 22.0% (9) *civilians*, 2.4% (1) *enlisted*, and 2.4% (1) had a *different role or chose not to disclose it*. For the post-questionnaire, 65.3% (32) were *officers*, 28.6% (14) *civilians*, 2.0% (1) *enlisted*, and 4.1% (2) had a *different role or chose not to disclose* their role: there was an increase in the participation from officers and civilians.

Table 2. Group or role in the military that best identified learners (% , response count)

Questionnaire	Officer	Civilian	Enlisted	None of the above/ Prefer not to disclose	Total
Pre- questionnaire	73.2%, 30	22.0%, 9	2.4%, 1	2.4%, 1	41
Post- questionnaire	65.3%, 32	28.6%, 14	2.0%, 1	4.1%, 2	49

Table 3 lists the highest level of education of the learners that responded to the pre- and post-questionnaires. In both pre- and post-questionnaires, most learners had a Master’s degree – 82.9% and 79.6% for the pre- and post-questionnaire, respectively; followed by a college degree – 14.6%

and 14.3% for the pre- and post-questionnaire, respectively. Finally, a small portion of respondents had a doctoral degree – 2.4% for the pre-questionnaire and 6.1% for the post-questionnaire.

Table 3. Highest level of education (% , response count)

Questionnaire	College	Masters	Doctoral	Total
Pre- questionnaire	14.6%, 6	82.9%, 34	2.4%, 1	41
Post- questionnaire	14.3%, 7	79.6%, 39	6.1%, 3	49

Table 4 presents a summary of the ethnicity that best described the learners. In the pre-questionnaire, 75.6% (31) of the respondents self-identified as *White or Caucasian*, 7.3% (3) as *Hispanic/Latino*, 7.3% (3) preferred not to disclose their ethnicity, 2.4% (1) responded *African American*, 2.4% (1) *African American, Black, Hispanic, and Latino*, and 4.9% (2) self-identified as *Other* ethnicity. With a similar categorical distribution, in the post-questionnaire 77.6% (38) referred to their ethnicity as *White or Caucasian*, 10.2% (5) preferred not to disclose it, 8.2% (4) identified as *Hispanic or Latino*, 2.0% (1) as *Asian*, and 2.0% (1) as *Other* ethnicity.

Table 4. Ethnicity of the learners (% , response count)

Questionnaire	White or Caucasian	Hispanic or Latino ^a	Prefer not to disclose	Black or African American ^a	Asian	Other
Pre- questionnaire	75.6% 31	9.8% 4	7.3% 3	4.9%, 2	0%, 0	4.9%, 2
Post- questionnaire	77.6%, 38	8.2%, 4	10.2%, 5	0%, 0	2.0%, 1	2.0%, 1

^a One respondent included in their ethnicity “*African American, Black, Hispanic and Latino*”. Their response is included in both “*Hispanic or Latino*” and the “*Black or African American*” categories.

- *Basic AI knowledge*

In Figure 2 we summarize the research participants' responses regarding their *level of familiarity with AI* – left subplots a) and b), as well as *how comfortable they felt defining and explaining AI to others* – right subplots c) and d). The same questions were asked before and after the workshop – top and bottom subplots, respectively. For both questions, metrics significantly improved in the post-questionnaire (a shift of the medians and means of the response distributions towards higher values, from left to right, p-val 4.7×10^{-5} and 1.04×10^{-6} , respectively, Wilcoxon rank-sum test). In more detail, responses for not having any or having low familiarity with AI – options 1, 2, 3 – decreased from 61% (15) to 22% (11). In contrast, responses for having some familiarity to being proficient in AI – options 5, 6, 7 – increased from 20% (8) to 53% (26). When learners were asked if they could define and explain AI to others, there was a positive shift: negative responses – *No, I cannot* and *I am not sure* – changed from 32% (13) to 2% (1), and positive responses – *Yes, I can but I do not feel comfortable explaining it to others* and *Yes, and I feel comfortable explaining it to others* – shifted from 69% (28) to 98% (48).

- *Content difficulty and required participant’s academic background*

Figure 3 presents the distribution of responses to the perceived level of difficulty of the workshop content (a) and the self-assessment of the academic background with respect to the (b). When research participants were asked about the content difficulty, most reported it was *Just about right* (41%, 20 responses), with 24% (12) responding it was *Difficult* or *Too difficult* (too difficult 6%,

3 learners), and 34% (17) answering it was *Easy* or *Too easy*. In that line of inquire, when learners were asked if their academic background in relation to the workshop’s content was adequate, 79.6% (39) responded they were *adequately prepared for the workshop*, 10.2% (5) shared that they were *overqualified to take the workshop*, while 12.2% (6) replied that they felt their *background was insufficient for the workshop*.

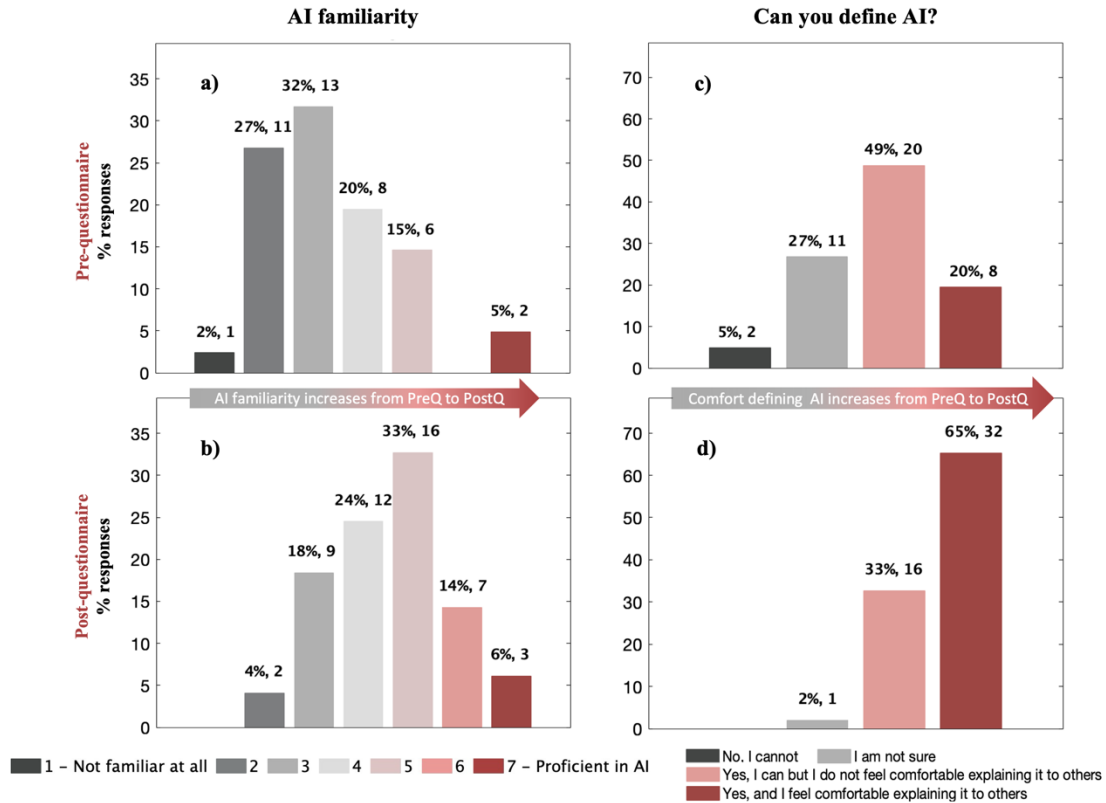


Figure 2. Learners’ self-assessment of their familiarity with AI before and after the workshop – a) and b), respectively; and the pre- and post-questionnaire responses to their capacity to define AI – c) and d) respectively – (percentage, response count). Notice how the responses improved in both AI familiarity and how comfortable learners were defining and explaining AI (increase from left to right – pre- to post-questionnaire). The increase in AI familiarity and the level of comfort giving a definition of AI are both significantly different (p -val 4.7×10^{-5} and 1.04×10^{-6} , respectively, Wilcoxon rank-sum test).

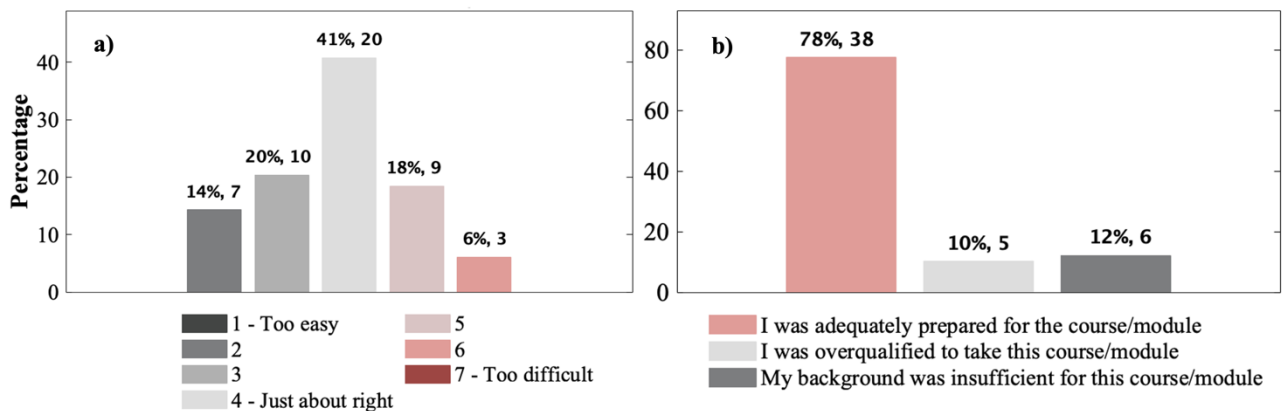


Figure 3. Post-questionnaire responses assessing a) the content difficulty and b) if the learners’ academic background was appropriate for successfully completing the workshop (percentage, response count).

- *Overall program satisfaction*

Furthermore, Figure 4 presents more detailed information regarding whether the program sparked more interest towards AI, if it was relevant to the participants work, as well as whether they would recommend it to a colleague. A total of 90% of the research participants expressed the material was interesting or very interesting, 94% of the research participants found some level of relevance between their work and the offered content, while 87% of them would recommend the program to a colleague.

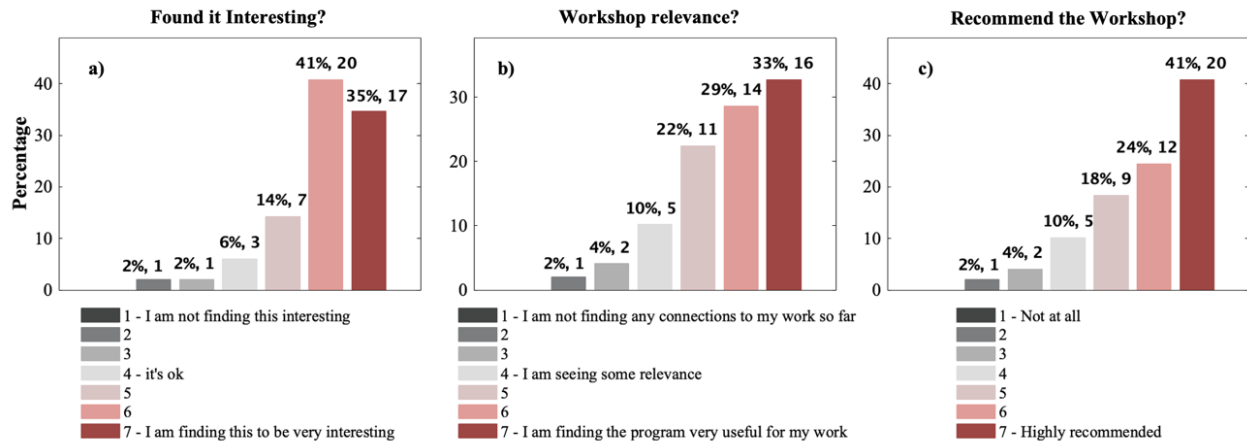


Figure 4. Post-questionnaire responses to the a) interest for AI sparked by the workshop, b) relevance of the content and connection with the learners’ work, and c) likelihood of recommending the workshop to their peers (percentage, response count).

From the qualitative results, learners found great value in gaining *foundational knowledge* about innovation, AI and emerging technologies. They also appreciated the opportunity to *network with like-minded peers* interested in implementing these technologies in their day-to-day work. Regarding areas for improvement, respondents to the post-questionnaire recommended *better setting the workshop’s expectations and learning objectives*: some expected more in-depth technical content rather than an introduction to innovation, AI and emerging technologies. Also, a number of respondents requested to *better connect the instruction and lectures with the exercises, the case scenario, and the materials* – workbook – provided: for some learners the exercises did not effectively reinforce the concepts, and the case scenario – circuit manufacturing operations – was very unfamiliar to participants. Finally, it was suggested to add an extra day of work to spread out the content, include some extra foundational knowledge activities, and decrease the time commitment per day.

6. Discussion and Future work

The MIT Innovation & Technology workshop was a fast-paced, immersive hands-on, scenario-based learning experience offered to provide foundational knowledge in emerging technologies and innovation. The significance of this workshop extends beyond its immediate educational outcomes. Along with complementary academic programs offered by MIT [1], it sought to answer the need of professional development AI curricula for diverse learners. Regardless how pervasive AI and emerging technologies currently are, and the increase of educational offerings in these fields, there is a lack of research studies focused on understanding the learning expectations and

outcomes of such academic programs. Moreover, the need of an AI literate population requires more attention to the concept of AI education for learners of diverse backgrounds.

This workshop serves as a model for innovation, technology, and engineering and technology education, particularly within military and defense sectors. By examining the efficacy of its pedagogical approaches, learning materials, and educational outcomes, the workshop contributes valuable insights into leadership and workforce development and supports the journey toward self-actualization for its participants. This approach underscores the importance of experiential learning, immersing learners in an environment that challenges yet supports, ensuring not just the acquisition of knowledge but also the confidence to apply it practically. Learning from conducting and evaluating this workshop has been used to refine the modular content to increase suitability for future DoD and broader audiences. Future work will focus on how to scale these in-person efforts so they can be offered by the military, to the military, after proper training from the [University] team. We are currently developing material to train the trainers, so military personnel can implement this workshop, and similar ones, in different DoD units.

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