CREST
CENTRE FOR RESEARCH AND
EVIDENCE ON SECURITY THREATS

ENHANCING INTEROPERABILITY TRAINING: INSIGHTS FROM UK EMERGENCY RESPONDERS

> " The goal of this research was to evaluate the effectiveness of interoperability team training. "

INTRODUCTION

Teams are essential for achieving goals in complex task environments. Team performance can be improved through team training, whereby participation in activities can build team-level knowledge, skills, and attitudes[i]. It is important to consider context when developing team training[ii]. This is especially important for teams operating in extreme environments, whereby the exceptional contextual factors of the team environment create unique challenges[iii]. If team training lacks realism and fails to consider the contextual factors that make that team unique, it will not prepare team members to perform under the exceptional extreme conditions that they are about to face.

Over the past 12 years, the Joint Emergency Service Interoperability Programme (JESIP) have sought to promote greater interoperability (i.e., joined up working) between emergency team members through changes to working practices and team training to embed these changes.

The goal of this research was to evaluate the effectiveness of interoperability team training. We adopted a mixed-methods survey design to evaluate the usefulness of interoperability team training and to generate best practice guidelines for informing its future design.

PARTICIPANTS

Seventy-two participants from the Police (N=9), Fire and Rescue (N=21), Ambulance (N=29), and other (N=13; e.g., local authorities) emergency services participated in our survey. 46 participants worked at command level and 26 participants were in a non-command role. On average, participants had 17 years' experience working for the emergency services (range of 1 – 42 years). Participants were recruited via opportunity sampling, through industry contacts, and word of mouth.

DATA COLLECTION

We took a mixed methods approach to data collection, using both closed and open survey questions. There were three sections to our survey:

EXPERIENCES OF MULTI-AGENCY TRAINING

We asked participants to:

- Report when they had last taken part in multi-agency training.

- Identify which training types (e-learning, tabletop exercises, small-scale live multi-agency exercises, large-scale live multi-agency exercises, workshops and in-person teaching) they had experienced (yes/no).

- Rate the usefulness of each training type they had experienced for improving interoperability, from 1 (extremely useless) to 7 (extremely useful).

EXPERIENCES OF JESIP

Participants were presented with three items to measure:

- Whether they were aware of JESIP (yes/no).

- The extent of their awareness of JESIP (from 1 (terrible) to 5 (excellent)).

- Whether they had taken part in JESIP training (yes/no).

QUALITATIVE REFLECTIONS ON MULTI-AGENCY TRAINING

Participants responded to four qualitative questions to identify:

1. Which aspects of multi-agency training were most useful for improving interoperability.

2. Which aspects of multi-agency training were least useful for improving interoperability.

3. How would they improve interoperability.

4. Any final comments they wanted to share about interoperability training.

DATA ANALYSIS

Quantitative responses were analysed to calculate descriptive statistics for each variable. Qualitative responses were inductively analysed using reflexive thematic analysis[iv] to identify and refine themes. A deductive codebook approach was then adopted using these themes[v], returning to the data set coding for the presence or absence of themes.

EXPERIENCES OF MULTI-AGENCY TRAINING

PARTICIPATION IN TRAINING

Most participants had taken part in training within the last 3 months (58%). Out of 72 participants, 5 had not taken part in any multi-agency training.

TYPES OF TRAINING

Participants took part in a range of multi-agency training in different formats (*Figure 1*). E-learning was the most common (79%), followed by both large- (69%) and small-scale (69%) live multi-agency training, tabletop exercises (67%), in-person teaching (60%) and workshops (45%).

USEFULNESS OF TRAINING

The perceived usefulness of training was largely positive across the six training types, with the median score ranging from extremely useful to slightly useful (*Figure 2*).

- The three most prevalent types of training experience were small-scale live exercise, in-person teaching, and large-scale exercise, where over 50% of participants who had engaged with this training found it extremely useful.

- E-learning was the only type of training that was not perceived as extremely useful by any participants, instead, results suggest it was perceived as, on average, slightly useful.
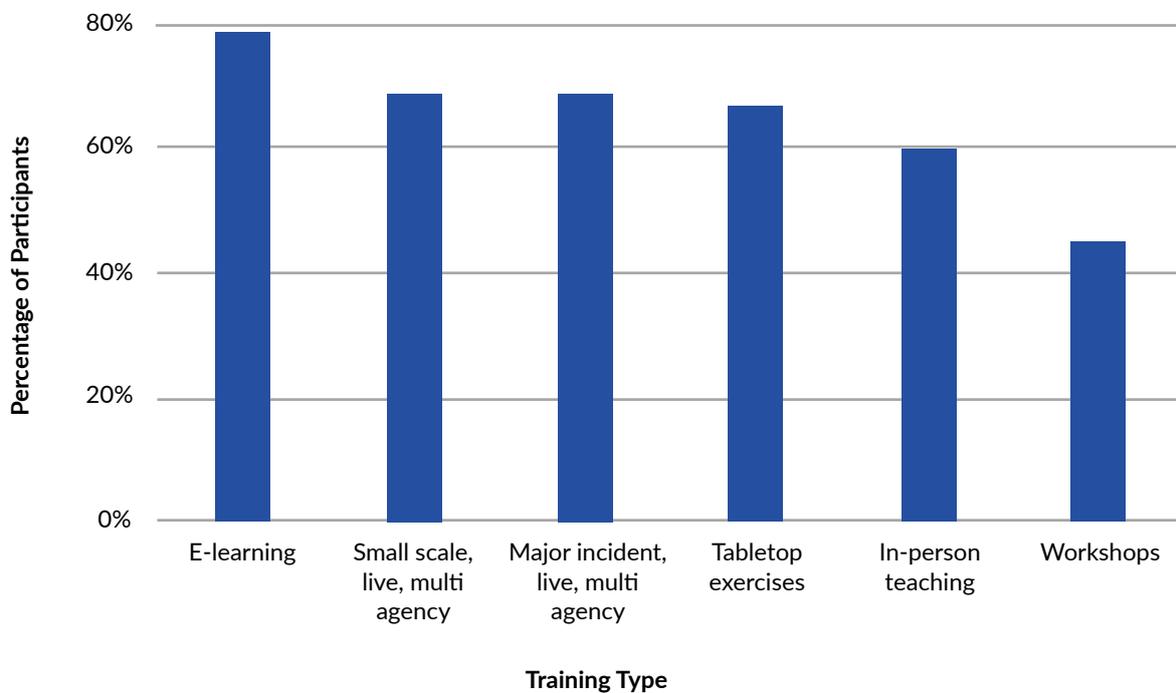

Figure 1. Number of participants who have taken part in each training type.

Note: Each column displays the percentage of participants who had participated in a training type out of total sample, n = 67 as n = 5 had not taken part in any multi-agency training.
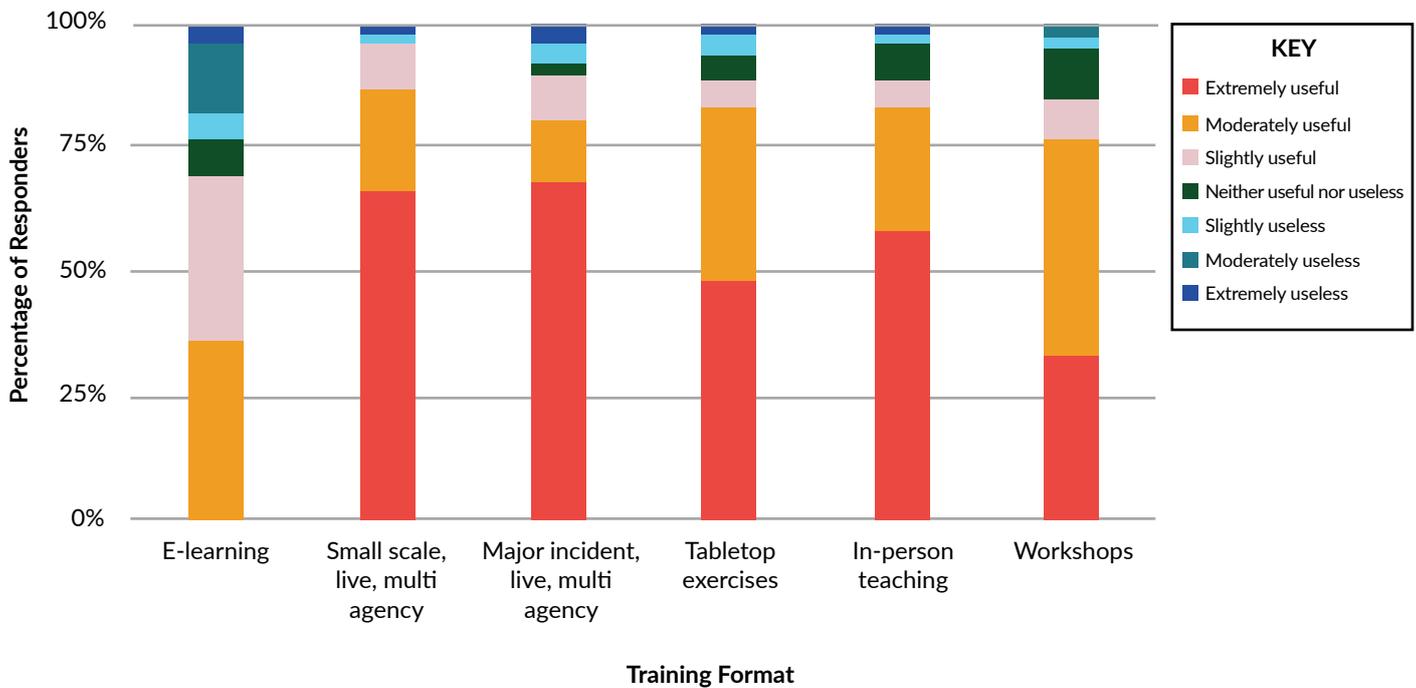
Figure 2. Perceived usefulness of training

EXPERIENCES OF JESIP

- 97% of participants reported that they were aware of JESIP.

- Participants rated their awareness of JESIP between average and good.

- 83% of participants reported that they had taken part in JESIP training.

TEAM TRAINING REQUIREMENTS

Participants described five core requirements that are needed to make team training effective. These were to make it:

1. Representative and realistic.

2. Focused on sharing perspectives and developing awareness of capabilities and challenges across teams.

3. Prioritised as a core part of the day-job for emergency responders.

4. Face to face rather than remote.

5. A platform for building social relationships.

REPRESENTATIVE AND REALISTIC

Participants (76%) described a need for multi-agency training to be both representative and realistic. Current training often focussed on a single agency or a particular level of command and tended to involve large-scale and rare major incidents, rather than routine team contexts. To increase representativeness and realism, participants provided several recommendations, such as:

i. including the core emergency services in the design of multi-agency training;

ii. including category 2 responders (e.g., utility and transport companies) in multi-agency training; and

iii. moving away from focussing on major incidents:
"make it more regular and don't continually provide huge exercises. Little and often is probably best rather than training against a once in lifetime type of incident." (P70).

SHARING PERSPECTIVES AND DEVELOPING AWARENESS OF CAPABILITIES AND CHALLENGES ACROSS TEAMS

65% of participants described how interacting with other services during multi-agency training enabled them to bring together different agency perspectives, which supported decision-making:

> "Multi agency training brings different views to one situation, when dealing with an incident having a broad knowledge of all responders helps make clear and consistent decisions" (P25).

Team training was perceived as useful if it helped build understanding about the different skills and capabilities of multi-agency colleagues during training, which gave them confidence in how they might work together in the real-world:

> "I also found that gaining insight into other services' capabilities gave me a much more confident understanding of how best to use them practically" (P27).

MULTI-AGENCY TRAINING SHOULD BE PRIORITISED AS A CORE PART OF THE DAY-JOB

64% of the sample described how it was essential that multi-agency training became a core and regular part of the day-job for emergency responders. However, participants identified that opportunities to engage with multi-agency training were lacking and not prioritised as staff were too operationally busy. Lack of opportunities to engage in training resulted in one participant taking part in training in their own time. To improve team training, participants desired "having more of the same [training] to be honest" (P47) while another made a request "to actually receive some" (P66) training. Participants described how emergency response organisations should prioritise multi-agency training for all staff, but that this required centralised buy-in and financing:

> "prioritise and promote joint training sessions - requires significant buy in in terms of time and money" (P28).

THE NEED FOR FACE-TO-FACE TRAINING

40% of our sample highlighted the need for team training to involve face-to-face interaction:

> "we need to move above and beyond just basic classroom training and actually exercise/work better together" (P18).
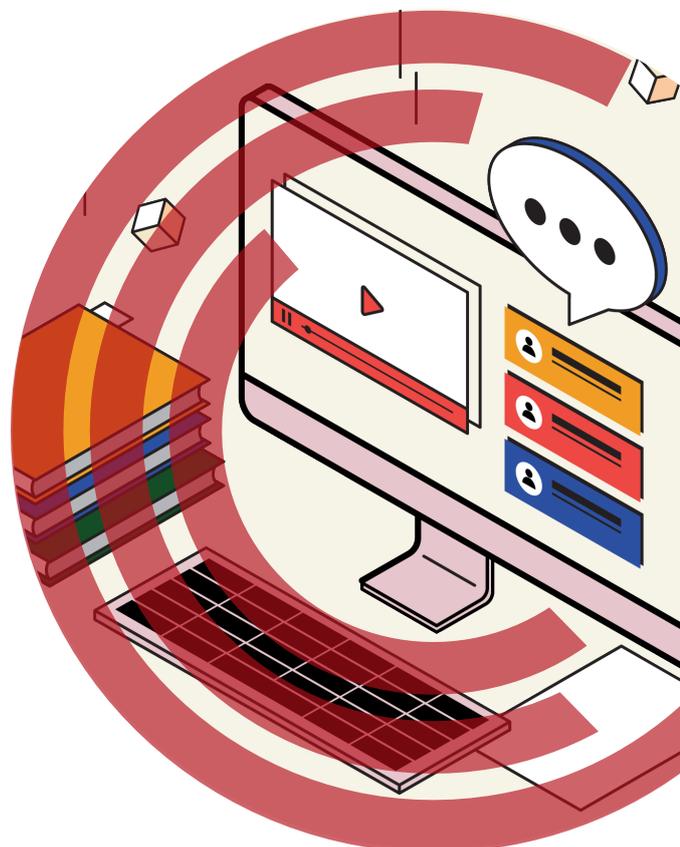
Participants acknowledged that e-learning can be useful to provide information, but cannot replicate the learning attained from in-person training:

> *"E-learning packages can be useful, as a pre-read prior to attending a face to face course, but should not be a substitute for in person training"* (P59).

Succinctly, one participant responded: *"more live training sessions, less powerpoint"* (P72).

A PLATFORM FOR BUILDING SOCIAL RELATIONSHIPS

33% of participants described how multi-agency training was useful when there was time to build new relationships and connections with other emergency team members. Networking was deemed to help establish familiarity prior to attending an incident:

> *"getting to know other commanders on a personal level - so when it comes to an incident it is a case of 'How are you?', not 'Who are you?'"* (P64).

Participants described the need to establish relationships at a local level so that they are more likely to know each other when attending an incident:

> *"more regular [training] and try where possible to keep to localities. So you're more likely training with people you may see on incidents"* (P55).

Interestingly, relationship building also occurred during training breaks such as coffee or lunch, indicating how building time into training for social interaction is key:

> *"getting to know commanders by name, having shared experiences or coffee"* (P10).

CONCLUSION

This research has assessed the perceived usefulness of multi-agency training and has proposed best practice of how interoperability training can be improved for emergency response teams in the UK. We identified that whilst various training formats were perceived as useful, e-learning was found to be the least useful, indicating a preference for methods that facilitated face-to-face interaction and realistic scenario-based exercises. E-learning, whilst a widely adopted training format across both organisations , does not meet contextual demands required for this type of training.

> **"**
>
> **...e-learning was found to be the least useful, indicating a preference for methods that facilitated face-to-face interaction**
>
> **"**

Our qualitative findings highlighted that good interoperability team training must be:

i. representative and realistic;

ii. focused on sharing perspectives and developing awareness of capabilities and challenges across teams;

iii. prioritised as a core part of the day-job for emergency responders;

iv. face-to-face rather than remote; and

v. provide a platform for building social relationships.

Current training provision was insufficient, aligning with the findings of Power et al. (2023) that systemic and organisational issues that have caused team training issues have created a principle-implementation gap for interoperability. We argue that interoperability training should be regular and integrated into the operational duties of everyday responding. Research from other extreme teams supports the notion that more team training opportunities can improve performance.

Taken together, effective interoperability training needs to prioritise regular, interactive, in-person training that incorporates social learning objectives to build social-psychologically connected teams, thereby enhancing overall team resilience.

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About the project

This CREST guide was produced from the Psychology of Interoperability project. You can find all the outputs from this project at: *www.crestresearch.ac.uk/projects/the-psychology-of-interoperability/*

READ MORE

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