Introduction

This PhD study uses an evidence-based approach to examine the use of a training tool - the bushfire simulation table - to understand how it is being effectively used to train in the discipline of bushfire behaviour. By examining the use of this new learning tool in real training settings, the study is developing good teaching and learning models; it also considers how to build trainer capability in this discipline and how to improve assessment and curricula when using new tools. This paper presents another major set of findings from the study - what we have learned about how adaptable and versatile this system is when training bushfire fighters.

Usable? Relevant? Adaptable?

Usability and contextualisation are two key factors that influence good implementation of new training tools 1. Many current simulation-based training tools in this field often fail. Part of the problem is that they can be too expensive to produce or to replicate and technical to operate as, they can require expensive hardware, they are inaccessible to trainers who don’t have access to dedicated, high-end training facilities. However, as computer-based tools can replicate fire and fire spread, they can contextualise important aspects of this discipline for training bushfire fighters.

The bushfire simulation table allows trainers to create, adapt, reuse and repurpose the resources.

The basic unit of the bushfire table which is:
• portable
• adjustable
• fire moves along a hessian surface

The table provides opportunities for the trainers to demonstrate exemplary bushfire suppression and communications activities. The table allows the trainer to implement new scenarios easily. The simulation scenarios of any level of complexity can be easily and quickly created and/or modified by the local trainer.

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The trainer can build scenarios and reproduce these scenarios across different trainees and teams of trained firefighters.

Simulation-based training provides unique opportunities to improve learning outcomes for training in complex workplaces. Empirical research has demonstrated that simulation-based training provides effective outcomes for developing:
• New knowledge and skills
• Team building skills
• Situational awareness

To be successful, these new training tools require two key factors – usability and contextualisation. This study has developed a typology for these two factors based on an earlier evaluation model (developed specifically for teaching bushfire fighters). The bushfire simulation table, although a much simpler tool, meets many of these criteria. This typology provides a pedagogic focus for evaluating new learning tools in this discipline.

Findings from assessing how well the bushfire simulation table allows for real-life work issues which are relevant to the discipline.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Bushfire simulation table</th>
<th>Teaching and learning process</th>
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| The trainers should be able to interact with the simulated scenario which should be as non-intrusive (natural) as possible. The aim is for trainers to experience as much as possible the same mental experiences they have in real-world fire fighting. | The system is a fire spread model that can be able to accommodate a range of fire behaviours (e.g. by provision of different spotting characteristics). The simulation system should accommodate different types of fuel loads and fuel moisture content. | In interviews trainers reported that they:
• Found the scenarios believable,
• Felt more connected to the work they would be doing and
• Found these scenarios motivating. |
| The system should allow the trainer to implement scenarios or a set of pre-determined events such as fire outbreaks, changes in weather conditions, etc. | The table provided opportunities for the trainers to demonstrate exemplary bushfire suppression and communications activities. | Opportunities for trainers to interact with the bushfire are possible and activities such as suppression and communications can occur. |
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References


BUSHFIRE SIMULATION TABLE - A VERSATILE AND ADAPTABLE LEARNING TOOL.

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Omoei et al. (2004)1 identified 22 criteria for assessing the key contextualising factors that are required for these tools to be effective. My study has adapted these criteria in order to apply them to the bushfire simulation table, a non-computer based tool. The study seeks to examine how this practical training tool performs in relation to this criteria developed for assessing computerised simulation tools and the three tables in this paper indicate some of the findings of my study.

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“...it's not like someone’s giving the information and you just sit there absorbing – you’re involved in making decisions on the table and you’ve got to wear those decisions as well”