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Quantifying Future Return on Investment of Live, Virtual, Constructive Training

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Abstract: The United States Marine Corps future shift from predominately live training towards the increased use of Live, Virtual, Constructive (LVC) training will require a significant investment. A capital infusion of this nature demands a quantifiable return on investment (ROI) that justifies increasing LVC training costs. Prior research provides insights into determining the ROI of focused simulation-based training, such as gunnery training, flight training, and medical procedure training. Minimal research has been performed to develop methods for quantifying how the application of LVC in small and large unit collective training can provide cost savings and, more importantly, improved readiness. This paper reports on a study that was performed to quantify the potential ROI of the future Marine Corps Live, Virtual, Constructive Training Environment (LVC-TE). The methodology to determine the ROI metrics used in the study is discussed. Both quantitative ROI metrics, and the data that is required to calculate those metrics, as well as qualitative metrics were used. Examples of qualitative metrics include: training & readiness events that can only be conducted in a synthetic environment, training against a higher end threat, and the ability to train where training and readiness standards do not yet exist (e.g., training in a contested space environment). The results of quantifying the ROI of the LVC-TE are provided and compared against the status quo training. Finally, the paper presents recommendations for developing an LVC-TE training and operations data strategy that outlines the metrics that should be tracked prior to and post LVC-TE fielding to measure the ROI that is being achieved by the LVC-TE.

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