Australian Government

Department of Education, Employment and Workplace Relations

AVIM5004A Facilitate training in a synthetic environment

Revision Number: 1

AVIM5004A Facilitate training in a synthetic environment

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor

This unit involves the skills and knowledge required to facilitate training in a synthetic environment including planning a synthetic learning activity; preparing the trainee for these activities; guiding, facilitating and monitoring learning; conducting post-training activities and reviewing facilitation processes. Licensing, legislative, regulatory or certification requirements are applicable to this unit.

Application of the Unit

Application of the Unit

This unit has application for the use of synthetic devices for training in the workplace.

Learning in a synthetic environment often takes place in conjunction with other modes of delivery, e.g. face-to-face.

Use for ADF Aviation is to be in accordance with relevant Defence Orders and Instructions.

Work is performed under various levels of supervision dependent on workplace context, and in a team environment.

This unit of competency is nominally packaged at Diploma.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability Skills This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Plan a synthetic learning activity	1.1 The learning strategy and/or learning program is accessed, read and interpreted to determine learning outcomes or objectives to be met and relevant delivery requirements
	1.2 Potential risks including those associated with human factors aspects of synthetic training devices are identified
	1.3 Limitations of the synthetic training device are identified
	1.4 A delivery plan is developed to plan, manage and sequence synthetic training activities and events to ensure logical progression of learning content, trainee safety and continuity of trainee progress
	1.5 Technical and human factors requirements for the synthetic environment including safety and emergency procedures are confirmed
2 Prepare trainee for synthetic training activities	2.1 Availability of suitable resources is confirmed
	2.2 Mental and physical preparedness of the trainee to undertake training in the synthetic environment is confirmed
	2.3 An introduction to the synthetic environment is provided including training objectives and relevant workplace procedures
	2.4 Instructional relationships are established between trainer/facilitator and trainees using appropriate communication tools and skills
	2.5 Trainee is briefed on how the synthetic training activity will be conducted to meet the training objectives
	2.6 Risk management issues applicable to the synthetic training activity are discussed and the trainee's responsibility for managing relevant risks is confirmed
	2.7 Trainee's ability to comprehend and/or recall the training objectives, underpinning knowledge, handling techniques and planned synthetic training activity/scenario are confirmed
3 Guide and facilitate learning in a synthetic environment	3.1 Liaison with relevant personnel is conducted to determine simulation activity requirements
	3.2 Learning is facilitated in accordance with the delivery plan using relevant synthetic devices and facilitation skills
	3.3 Good practice in facilitating learning in a synthetic environment is demonstrated to ensure an effective and safe transfer of learning to the real world
	3.4 Technical issues are addressed where required using relevant technical support mechanisms and/or personnel
	3.5 Opportunities for authentic learning, practice and formative assessment are built into the learning experience

ELEMENT	PERFORMANCE CRITERIA
	3.6 Pre-loaded automatic demonstrations are employed where appropriate
	3.7 Abnormal/unusual conditions are monitored and addressed
	3.8 Variations to activity conditions are implemented where applicable
	3.9 Hand-over/take-over procedures for control of the synthetic device are implemented in accordance with workplace procedures
4 Monitor learning in a synthetic environment	4.1 Trainee progress is monitored and documented in accordance with workplace procedures
	4.2 Trainee's cognitive load is assessed, monitored and managed
	4.3 Support and guidance are provided within the synthetic environment as appropriate
	4.4 Trainee is encouraged to develop self-assessment skills
	4.5 Trainee interaction with others and participation in synthetic training activities is continuously monitored and interventions are made where appropriate
	4.6 Opportunities are provided for trainees to reflect on their learning progress
5 Conduct post-training activities	5.1 Significant details of trainee's performance are clearly and accurately debriefed
	5.2 Playback devices are employed during debriefing to illustrate key learning points when appropriate
	5.3 Trainee is briefed on the details of the next training event as appropriate
	5.4 Trainee records are maintained in accordance with workplace procedures
	5.5 Relevant stakeholders are kept informed about trainee progress
	5.6 Synthetic device faults are recorded and/or rectified in accordance with workplace procedures
	5.7 Support and guidance are provided post synthetic environment activities as appropriate
6 Review synthetic environment facilitation processes	6.1 Synthetic training session outcomes are evaluated against desired session outcomes
	6.2 A review is undertaken post-completion of the learning program/course/qualification
	6.3 Time is taken to reflect on own performance as a trainer/facilitator, and ways to improve performance are explored
	6.4 Recommendations for improvements in facilitating training and appropriateness of synthetic systems, tools and resources are

ELEMENT	PERFORMANCE CRITERIA
	identified and documented, and discussed with relevant personnel for future action

Required Skills and Knowledge

REQUIRED KNOWLEDGE AND SKILLS

This describes the essential knowledge and skills and their level required for this unit.

Required knowledge:

- Relevant sections of national and state or territory regulatory requirements and codes of practice
- Relevant OH&S and environmental procedures and regulations applicable to simulation operations and personnel safety
- Fundamentals of instructing, questioning, engaging and motivating trainees
- Effective use of a course of training, curricula/syllabus and lesson plans
- Training and assessment standards
- Debriefing and feedback techniques
- Techniques for introducing tasks in manageable segments to avoid overloading a trainee
- Common trainee errors and suggested suitable remedial instruction
- Intervention strategies, principles and implications for the synthetic environment
- Sequencing and developing synthetic training activities and their relationship with real world training activities
- The application of simulation and synthetic activities including live, virtual and constructive (LVC) simulations
- Advantages and limitations of synthetic training environments in facilitating learning
- Information communication technology within the simulation and synthetic environment
- Established procedures applicable to simulation operations
- Abnormal conditions, including hardware, software and equipment malfunction/failure and poor/unusual trainee performance
- Human factors implication and risks in the synthetic training environment
- The effects of simulation sickness
- Functions of single-user, multi-user and distributed user operating systems
- Documentation production and safe storage
- Technical knowledge sufficient to distinguish between a technical problem and a content problem, and to respond accordingly
- Relevant learning management systems
- Structure and content of relevant training resources
- Hand-over/take-over procedures for the control of synthetic device/s

Required skills:

- Apply flexibility in facilitation skills using synthetic devices, for example:

REQUIRED KNOWLEDGE AND SKILLS

- knowing when to intervene/when to let trainees direct themselves
- being able to effectively use a variety of activities or provide directions for different trainee needs
- interpreting trainee needs and directing them to new learning opportunities
- Assess learning and performance
- Apply intervention techniques
- Evaluate instructional effectiveness
- Manage an environment that fosters learning and performance
- Demonstrate an ability to read, comprehend and interpret written technical English
- Demonstrate appropriate selection and employment of simulation equipment
- Coordinate activities involving a range of complex tasks
- Coordinate information communication technology related activities
- Apply briefing/debriefing skills
- Read and interpret instructions, regulations, procedures and other information relevant to flight training and facilitating training in a synthetic environment
- Promptly report and/or rectify any identified problems that may occur when facilitating training in a synthetic environment in accordance with regulatory requirements and workplace procedures
- Work systematically with required attention to detail without injury to self others, or damage to goods or equipment
- Adapt to differences in equipment and operating environment in accordance with standard operating procedures
- Select and use required personal protective clothing and equipment conforming to industry and OH&S standards

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills, the range statement and the assessment guidelines for this Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

- The evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria of this unit and include demonstration of:
- applying the underpinning knowledge and skills
- identifying potential risks including those associated with human factors aspects of synthetic training devices
- developing a delivery plan that ensures logical progression of learning content, trainee safety and continuity of trainee progress
- confirming technical and human factors requirements for the synthetic environment including safety and emergency procedures
- preparing the trainee for synthetic training activities including trainee preparedness, instructional relationships, risk management and trainee responsibility
- monitoring and addressing abnormal/unusual conditions
- implementing hand-over/take-over procedures for control of synthetic device in accordance with workplace procedures
- monitoring and documenting trainee progress in accordance with workplace procedures
- debriefing significant details of trainee's performance
- maintaining trainee records in accordance with workplace procedures
- recording and/or rectifying synthetic device faults in accordance with workplace procedures
- reviewing and reflecting on instructional performance

Context of and specific resources for assessment

- Performance is demonstrated consistently over a period of time and in a suitable range of contexts
- Resources for assessment include:
- a range of relevant exercises, case studies and/or other simulated practical and knowledge assessment, and/or
- access to an appropriate range of relevant operational situations in the workplace
- In both real and simulated environments, access is required to:
- relevant and appropriate materials and equipment, and

EVIDENCE GUIDE

	• applicable documentation including workplace procedures, regulations, codes of practice and operation manuals
Method of assessment	• Assessment of this unit must be undertaken by a registered training organisation • As a minimum, assessment of knowledge must be conducted through appropriate written/oral tests • Practical assessment must occur: • through activities in an appropriately simulated environment at the registered training organisation, and/or • in an appropriate range of situations in the workplace

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

Potential risks may include:	• effects on what is learned and the relationship with the real world • negative learning
Limitations of the synthetic training device may include:	• fidelity • movement • instrumentation • resolution
Synthetic training devices may include:	• full motion simulator • flight training device • synthetic training device • virtual reality training system • single, multiple or team operator simulator • simulator • part-task simulator • desktop simulator • operating system • associated simulator computer hardware and software
A delivery plan may include:	• individual/group learning objectives or outcomes for the learning program or segment of the learning program to be addressed • number of trainees and their specific support requirements • timing, sequence and number of pre-planned sessions • types of pre-planned sessions - synchronous (in real time using conferencing, chat, forum) or asynchronous (not in real time using email, offline forum, bulletin boards) • topics to be addressed in learning sessions • learning/activities/events to be addressed in e-learning sessions • resources and/or tools to be used • determination of learning management tools such as feedback systems and support mechanisms
Synthetic training activities may include:	• scenarios • pre-planned training sorties • pre-planned training operations
Safety and emergency procedures may include:	• established procedures • industry safe practice

RANGE STATEMENT

Workplace procedures may include:	• company procedures • enterprise procedures • organisational procedures • standard operating procedures • manufacturers guidelines • established procedures • workplace instructions • in Defence context, relevant Defence Orders and Instructions
Trainer/facilitator may include:	• instructional staff • coaching staff • experienced personnel • subject matter experts (e.g. pilots, aircrew) • technical staff • simulator operators
Risk management issues may include:	• threat and error management • simulation/motion sickness • equipment malfunction/failure • smoke or overheat warnings • simulator access/egress • emergency communication • loading stops • motion stops • negative learning • fidelity and resolution constraints/limitations
Good practice in facilitating learning may include:	• guiding learning activities through setting up questions, issues, scenarios to be addressed • observing trainee interaction and intervening when necessary to maintain focus/momentum/engagement • knowing when to intervene/when to let trainees direct themselves • moderating disruptive, abusive or dominant trainees • facilitating group work • assisting trainees in locating, using and evaluating online information • maintaining momentum and motivation of trainees through ongoing individual contact and feedback
Abnormal/unusual conditions may include:	• hardware malfunction/failure • software malfunction/failure • simulation sickness • poor/unusual participant performance

RANGE STATEMENT

Variations to activity conditions may include:	• personnel equipment malfunction/failure • changes made in response to a training need • changes made in response to a strategic requirement
Trainee's cognitive load may be affected by:	• lack of preparation • physical discomfort • anxiety • fatigue • unreasonable expectations • apathy • impatience • inadequate demonstration • task complexity • inadequate opportunity to practice • inadequate fault analysis • information overload • outside pressures
Interventions may be made to:	• maintain momentum • engage trainee • address safety • highlight a key learning point • initiate remedial actions
Debrief may include:	• providing feedback to relevant personnel on conclusion of simulator activity • providing feedback to relevant organisational authorities • providing feedback to manufacturers, contracted suppliers, and contracted maintainers
Relevant stakeholders may include:	• instructional staff • coaching staff • experienced personnel • subject matter experts (e.g. pilots, aircrew) • technical staff • trainees • other simulator operators
Review may include:	• feedback from trainees, colleagues, learning designers via survey or discussion • identification of issues in managing/monitoring e-learners and the need for changes to contact/monitoring processes • identification of issues in using the delivery plan and the need for changes/modifications to the plan • effectiveness of learning protocols, their application and

RANGE STATEMENT

	proposed changes • technology effectiveness
Reflect on own performance may include:	• asking critical questions about performance, problems, methods used and success of trainees • seeking, listening to and acting on feedback from trainees and others
Simulation sickness may include:	• visuomotor dysfunctions • mental disorientation • nausea including vomiting • other symptoms such as drowsiness, fatigue, and headache
Workplace communications may include:	• interpersonal communications • messages received via simulator/simulated communications • on-screen messages • written reports • phone • radio • other information communication technology means (e.g. email, SMS, blogs, text message, facsimile)

Unit Sector(s)

Not applicable.

Competency field

Competency Field M - Training and Assessment