BTEC INTERNATIONAL SPORT

UNIT 31: INFLUENCE OF TECHNOLOGY IN SPORT AND PHYSICAL ACTIVITY

Unit title	Unit 31: Influence of Technology in Sport and Physical Activity
Guided learning hours	60
Number of lessons	30
Duration of lessons	2 hours

Links to other units

- Unit 3: Research Project in Sport
- Unit 4: Ethics, Behaviours and Values
- Unit 16: Applied Coaching Skills
- Unit 35: Practical Sports Performance.







Key to learning opportunities								
AW	Assignment writing	RS	Revision session					
GS	Guest speaker	V	Visit					
IS	Independent study	GW	Group work					







Lesson	Topic	Lesson type	Suggested activities	Resources			
Learnin	earning aim, A: Explore how different types of technology are used in sport and physical activity						
1	Unit Introduction	IS GW	• Tutor presentation: provide learners with unit information so that they understand the assessment criteria and the expectations of achievement. Outline the nature of the topics and learning aims, and the summative assessments that learners will be expected to complete for this unit.	Unit specification Computers for internet research A3 paper and pens			
			 Key command verbs: describe/explore/explain/assess/produce/ analyse/evaluate. Discuss with learners what these mean and how they can be applied in the context of the unit learning aims. 				
			 Whole-class activity: learners to work individually, in pairs or in small groups to demonstrate prior knowledge of the subject. Suggestions include getting learners to independently recall prior knowledge before developing knowledge in pairs and finally small groups (using A3 paper as means to record findings). Learners to feed back with directed Q&A. 				
2	A1 Types of technology	IS GW	 Small-group activity: learners to complete a mind mapping activity for perceived key words associated with this unit (ice-breaker activity). 	Computers for internet research			
			 Tutor presentation: explore the different types of technology used in sport and physical activity in relation to equipment and clothing. 				
			 Whole-class activity: learners work individually, in pairs or in small groups, to discuss how different types of equipment and clothing are used in sport and physical activity, such as: equipment and clothing: 				
			 equipment and clothing: clothing, e.g.: fabrics and materials, competition clothing, (e.g. cycling shoes, swimsuits, skiwear), protective clothing, (e.g. waterproofs, leathers, 				



Lesson	Topic	Lesson type	Suggested activities	Resources
			goggles). - sports-specific equipment, e.g.: helmets, rackets, equipment to perform sports, (e.g. skis, kayak, cycles). - disability equipment/assistive technology, e.g.: wheelchairs, prosthetics, adapted equipment. - personal equipment: cameras, (e.g. replay), GPS trackers and watches, cloud based and connected systems. - facilities: simulated environments, adapted settings, maintained environments, impact of facilities (e.g. indoor ski-centres, rock climbing). Learners to provide their own viewpoints to contribute to group discussion (pyramid to group learning). • Plenary: learners investigate different types of technology used in sport and physical activity in relation to equipment and clothing that they have knowledge of from their sport or experience and collate some information to share with the group at the next lesson.	
3	A1 Types of technology	IS GW	 Tutor presentation: remind learners of the different types of technology used in sport and physical activity in relation to equipment and clothing. Whole-class activity: learners share their findings about different types of technology used in sport and physical activity in relation to equipment and clothing that they have knowledge of from their sport or experience collated in the last lesson. Small-group activity: split the class into five groups. Give each group one of the following types of technology to research: 	Computers for internet research Poster paper and pens







Lesson	Topic	Lesson type	Suggested activities	Resources
			 clothing sports-specific equipment disability equipment/assistive technology personal equipment facilities Groups will present their findings to the whole group in the next lesson as an annotated poster. These can be collated to form a workbook that the learners can use to further their understanding of the influence of technology in sport and physical activity. Plenary: ask learners questions about the different types of technology used in sport and physical activity in the style of a mini quiz. The learners could be arranged in groups or pairs. It would be helpful if the quiz was delivered using technology – interactive white board, phones etc.	
4	A1 Types of technology	IS GW V	 Small-group presentations: ask learners to present their annotated posters from the previous lesson. Visit: to an indoor ski-centre, velodrome or white-water slalom centre etc, that the learners have investigated in the previous lesson. Learners will see first-hand how different types of clothing, equipment and facilities are used in sport and physical activity. Offer opportunity for discussion after the visit. Individual activity: learners to summarise key aspects of the visit. Evidence should be produced to aid formative and summative assessment. Plenary: after the visit, use a plenary discussion to agree which aspects and considerations were covered. 	Computers for internet research Pre-planned visit







Lesson	Topic	Lesson type	Suggested activities	Resources
5	A2 How technology is used	IS GW	 Tutor presentation: Introduce the topic of how technology is used and focus on performance analysis equipment, individual and team technical analysis and ergogenic aids to improve performance, (e.g.: supplements, lactate threshold training, blood lactate testing and hyperbaric chambers. Individual activity: Learners find one example online of an elite team and one example of an elite athlete's use of performance analysis equipment, technical analysis and ergogenic aids. Then feedback their findings to the whole class. The tutor encourages group discussion about the possible different equipment, analysis and ergogenic aids needed by these various teams and athletes. Small-group activity: in groups of three or four learners. Create information blogs detailing their findings from the individual activity above. (as directed by the specification). Set the group a time to review the information whilst creating a blog to present at the end of the lesson. Plenary: small groups to present their blogs, tutor to enhance with Q&A if necessary. 	Computers for internet research
6	A2 How technology is used	IS GW	Tutor presentation: explore how Liverpool Football Club have used technology. For example: www.liverpoolecho.co.uk/sport/football/football-news/premier-league-managers-set-follow-18805999 www.liverpoolfc.com pay particular attention to: video analysis and software, e.g. slow motion, freeze-frame, streaming, Hawk-Eye, Video Assistant Referee (VAR), goal line technology.	Computers for internet research







Lesson	Торіс	Lesson type	Suggested activities	Resources
			 broadcasting. analysing performance: qualitative assessment, quantitative assessment, tactical individual and team analysis, technical individual and team analysis, feedback. Small-group activity: each group could be assigned one of the three bullet points discussed above. Learners should produce a PowerPoint presentation or a set of notes, which they can share with the group in the following lesson. Plenary: check learners' understanding of how the technology explored in this lesson can be used. 	
7	A2 How technology is used	IS GW	 Tutor presentation: Establish the key points for how technology is used to monitor fitness. Discuss the importance of the following aspects: fitness tracking: diet and food diaries, supplement, exercise and general fitness, sport specific development, schedule planning (e.g.: planning training programmes, scheduling times, dates and periods). assessing fitness levels:	Computers for internet research Practical space for exercise Examples of fitness apps e.g. Strava, Fitness Buddy, Runkeeper etc

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Lesson	Topic	Lesson type	Suggested activities	Resources
			specific. General fitness: monitoring daily/weekly exercise, developing fitness plans, tracking progress. Mhole-class activity: get learners to take part in a practical to demonstrate the different types of fitness monitoring technology discussed earlier. For example, learners can be shown a range of fitness apps to experiment with. Paired activity: learners to work in pairs to explore the advantages and disadvantages of the different technology used. Learners should produce an information leaflet, which they can share with the group at the end of the lesson.	
			 Plenary: the information leaflets can be collated to form a class workbook for all the learners to keep. Tutor can add information too if not covered in the learner leaflets. 	
8	A2 How technology is used	IS GW	Tutor-led discussion: recap previous lesson and ask probing questions around the key terminology covered. Address the enforcement of laws regarding how technology is used in sport and give learners articles (from journals or other credible sources), e.g. www.lawinsport.com/topics/item/technological-advances-in-sports-equipment-cheating-or-evolution-part-2-establishing-a-regulatory-framework	Computers for internet research Journal articles Tutor-created worksheet
			and ask them to answer questions on the key considerations for the enforcement of laws regarding how technology is used in sport discussed in the tutor presentation. They could use tutor-created worksheets. When complete, use the snowball method to work in pairs, then in small groups, and finally as a class to discuss.	







Lesson	Topic	Lesson type	Suggested activities	Resources
			• Small-group activity: each group could research the enforcement of laws discussed. They could then prepare a mini presentation/ 'show and tell' for their peers, outlining their findings. This could be followed by a 'question and answer' session.	
			 Tutor presentation: how technology is used for spectating and officiating can be demonstrated. Learners should make notes, with examples. The advantages and disadvantages of using the technology could be debated. 	
			Plenary: Recap the main learning points covered in the lesson.	
9	A2 How technology is used	IS GW	 Tutor presentation: brief recap on previous lesson and provide feedback from 500 word reports. 	Computers for internet research
		V	• Small-group activity: learners discuss and write questions for the visit to a professional sports club.	Visit
			 Visit: Arrange a visit to a professional sports club where learners can meet one of the sports scientists, therapists or coaches on staff to answer questions about which types of technology they use and how they use it. 	
			 Plenary: after the visit, use a plenary discussion to agree which aspects and considerations were covered. 	
10-12	Assessment of learning aim	RS	Assignment brief: tutor to give out the assignment brief and discuss	Assignment brief
	A	AW	the main features, including: assessment deadline, scenario and tasks. At this point learners can ask for clarification on the requirements of the assessment.	Computers and internet access
			 Individual activity: allocate time for learners to write notes and to complete assignment 1, which covers learning aim A. 	
			Summative assessment activity: Learners produce a report on the types and use of technology in sport and physical activity.	







Lesson	Topic	Lesson type	Suggested activities	Resources				
Learnin	Learning aim B: Explore the role of technology in improving sport and physical activity performance and experience							
13	B1 Improving performance	IS GW	 Tutor-led discussion: discuss the role of technology in improving sport and physical activity performance. Highlight the importance of: interpreting data: such as distances, measures, tolerances, statistics, tracking and calorie intake. informing strategies for improvement using technology: 	Computers for internet research				
			such as fitness component development, technical development, tactical development, biomechanical development and opposition analysis. o planning and preparation: such as scheduling, reminders, physical load, physical periodisation and technical and tactical periodisation.					
			Small-group activity 1: ask learners to work in three groups. All groups should be given the same sport or physical activity event chosen by the tutor. One group should research interpreting data. One group should research informing strategies for improvement using technology and one group should research planning and preparation. Each group should record this information as an annotated poster or spider diagram.					
			• Small-group activity 2: ask the groups to present their findings to the class.					
			Plenary: The annotated posters and/or spider diagrams can be collated to produce a class workbook. Review the main learning points covered in the lesson.					
14	B1 Improving performance	IS GW	Tutor presentation: recap previous lesson and tutor to ask probing questions around the key terminology covered.	Computers for internet research				

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Lesson	Topic	Lesson type	Suggested activities	Resources
			Paired activity: learners investigate a strategy for improving performance through technology in a sport or physical activity of their choice. Encourage the pairs to provide a rationale and evidence to support their strategy. Tutors may need to provide some examples.	
			 Learner presentations: learners present their research findings to the whole group, answering questions about what they have researched. 	
			 Plenary knowledge quiz: revise the key considerations for a strategy to improve performance through technology using a quiz. 	
15	B1 Improving performance	IS GW GS	 Tutor presentation: re-examine improving performance through technology covered in the previous lesson and tutor to ask probing questions around the key terminology. Small-group activity: learners discuss and write questions for a 	Computers for internet research Guest speaker
			guest speaker.	
			 Guest speaker: a development coach or a performance manager from a local or professional sports club discusses how they use technology to improve the performance of their athletes. 	
			• Plenary : focus on what the guest speaker has said about the value of using technology to improve sporting performance.	
16	B2 Improving experience		 Tutor presentation: discuss the role of technology in improving sport and physical activity experience. Assess this from the perspective of a participant: applications of rules: going beyond human judgement, 	Computers for internet research
			replays, slow motion and in/out. o media spectating: TV, radio, applications, internet and social media.	



Lesson	Topic	Lesson type	Suggested activities	Resources
			 sport development: development of rules and regulations, fans interactivity, knowledge of the sport and brand development. 	
			It will be useful to show learners examples of these.	
			 Individual activity: learners explore and produce specific sporting examples for each of the three bullet points above. Ask them to consider the positives and negatives of it for improving the participant's experience. 	
			 Plenary: ask learners questions about the importance of the role of technology in improving a participant's sport and physical activity experience. 	
17	B2 Improving experience	IS GW	 Tutor-led starter activity: quick-fire definitions of key terms (glossary), check everyone is familiar with the terms about the role of technology in improving sport and physical activity performance and experience. 	Computers for internet research
			 Paired activity: learners produce brief PowerPoint presentation on a strategy for improving a sport or physical activity experience using technology. The tutor could offer guidelines such as how long, how many slides etc and offer additional support for this research activity. To complement their findings, each group should create a set of questions to give out to the other learners for them to answer as they deliver their findings. 	
			 Plenary: check learning and understanding about the importance of using technology in improving sport and physical activity experiences. 	
18	B3 Issues with technology	IS GW	• Tutor presentation: explore the issues with technology in improving sport and physical activity performance and experience., include concepts such as:	Computers for internet research

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Lesson	Topic	Lesson type	Suggested activities	Resources
			 accessibility: feasibility of access to equipment and specialised disability equipment. accuracy. reliability. cost: financial implications to access, equipment, training and subscriptions. usability: specific training required and specialist equipment. time: preparing and storing equipment, compiling data and use of data in feedback to performers. ethical considerations: age, ability and accessibility. Paired activity: learners investigate a range of different case studies provided by the tutor regarding the issues with technology. They should consider and assess the range of concepts discussed. Learner presentations: learners present their research findings to the whole group, answering questions about what they have researched. Plenary: determine the significance of technology issues that can occur. 	Case studies
19	B3 Issues with technology	IS GW	 Tutor presentation: recap the previous lesson's work with regards to the issues with technology. Pay particular attention to the various different concepts covered. Small-group activity: learners are given a scenario in which a sports performer is offered technology to improve their performance and has the option to employ ethical practices or get gains from being unethical. The learners should identify the ethical considerations that the performer faces. 	Computers for internet research







Lesson	Topic	Lesson type	Suggested activities	Resources
			Whole-class debate: the class is split into two sides. The class should debate the scenario with one side of the room supporting ethical practice and the other side being against it, in favour of gains. Time should be allocated to allow both sides to prepare.	
			 Individual activity: the learner should write an extended piece of work that discusses how critical issues with technology are in relation to improving sport and physical activity performances and experiences. 	
			• Plenary: summarise the main issues with technology in relation to improving sport and physical activity performances and experiences.	
Learnin	g aim C: Propose a strateg	gy to imp	rove performance or experience in a selected sport or physical a	activity
20	C1 Strategy	IS GW	 Tutor presentation: outline the nature of a strategy and introduce learners to the key considerations for implementing one to improve performance or experience in a selected sport or physical activity by using technology, for example: strategy for improving technology: concept, assessment of suitability, type of technology, outline use of technology selected, type of benefit, target audience, cost, strengths, weaknesses, proposed improvements and rationale. Whole-class discussion: engage learners in a discussion pulling out the key points regarding these strategies. 	Computers for internet research Strategy examples
			 Paired activity: learners to work in pairs to explore examples of well- compiled strategies. Examples could be provided by the tutor. Plenary: collate learners' suggestions and ideas about effective ideas around strategies to improve performance or experience in a selected sport or physical activity by using technology. 	



Lesson	Topic	Lesson type	Suggested activities	Resources
21	C1 Strategy	IS GW	 Tutor presentation: revisit the key considerations for implementing a strategy to improve performance or experience in a selected sport or physical activity. Review the main factors of an effective strategy. Tutors could use any relevant videos and appropriate TED Talks, YouTube clips and podcasts to support the delivery of this content. Small-group activity: the use of case studies will assist in offering examples of previous and ongoing strategies. Encourage learners to be critical and reflective in their analysis of strategy case studies. Major aspects could be the type of technology, type of benefit, target audience, cost, proposed improvements and rationale. Plenary: collate and discuss learners' findings and thoughts about effective ideas around strategies to improve performance or experience in a selected sport or physical activity by using technology. 	Computers for internet research TED Talks, YouTube clips and podcasts Case studies
22	C2 Presenting		 Tutor presentation: introduce the significance of successful presenting and explaining when proposing a strategy to improve performance or experience in a selected sport or physical activity by using technology. Outline the following main points: key features clarified target: audience, user or participant details of technology selected impact of improvements and benefits to performer or experience explanation of specific impact on an area of performance or experience use of support materials: images, diagrams, information graphics, flow charts. 	Computers for internet research



Lesson	Topic	Lesson type	Suggested activities	Resources
			 Individual activity: ask learners to research different presenting styles that they can locate online (ideally sport-related) and identify common success factors. Plenary: summarise the implications for a presentation if thorough research is not carried out and all aspects are not considered. 	
23	C2 Presenting	IS GW	• Tutor presentation: revise the key aspects of successful presenting when proposing a strategy to improve performance or experience in a selected sport or physical activity by using technology. Remind learners of the types of considerations a presentation should contain.	Computers for internet research Role play
			• Small-group task 1: learners work together to give a presentation for a tutor-designated strategy to use technology to improve sporting performance. As a group, role play the positions of presenter and audience, so that each member has a chance to present. The audience should be encouraged to provide helpful, constructive feedback to the presenters.	
			 Small-group task 2: each group present their strategy plan to the rest of the class, answering any questions that are posed by their peers. 	
			 Plenary: check learning of the crucial characteristics of effective presenting. 	
24	C3 Reviewing	IS GW	 Tutor presentation: establish the key factors when reviewing and justifying a strategy to improve performance or experience in a selected sport or physical activity: key benefits covered relates to the target audience, user or participant 	Computers for internet research Case studies



Lesson	Topic	Lesson type	Suggested activities	Resources
			 check the balance of positives and negatives in relation to the cost and feasibility consider issues with technology consider issues with take up the unique selling point (USP) tried and tested principles and practice strengths areas for development. Paired activity: learners to work in pairs to review and justify a strategy to improve performance or experience in a selected sport or physical activity. Tutor to provide case studies as examples of such strategies for the pairs to investigate using the factors discussed above as a checklist. Plenary: collate learners' suggestions and ideas about effective ideas around reviewing and justifying a strategy to improve performance or experience in a selected sport or physical activity. 	
25	C3 Reviewing	IS GW GS	 Tutor presentation: recap previous lesson and tutor to ask probing questions around the key terminology covered. Small-group activity: learners discuss and write questions for a guest speaker. Guest speaker: invite in a guest speaker to discuss the strategy they use to improve performance or experience in their sport or physical activity through technology. The guest speaker could be, for example, a sports scientist, sports club manager etc. Paired activity: ask learners to work in pairs to review the content delivered by the speaker and to discuss the pros and cons of how they use technology to improve the performance of their athletes. 	Computers for internet research Guest Speaker

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Lesson	Topic	Lesson type	Suggested activities	Resources
			 Plenary: focus on what the guest speaker has said about their strategy. 	
26-30	Assessment of learning aims B and C	RS AW	 Assignment brief – tutor to give out the assignment brief and discuss the main features, including assessment deadline, scenario and tasks. At this point learners can ask for clarification on the requirements of the assessment. 	Assignment brief Computers for internet research
			• Individual activity: allocate time for learners to write notes and to complete assignment 2, which covers learning aims B and C.	
			 Summative assessment activity: learners to produce as a presentation a strategy for improving a sport or physical activity performance or experience through technology supported by a rationale. 	

Pearson is not responsible for the content of any external internet sites. It is essential for tutors to preview each website before using it in class so as to ensure that the URL is still accurate, relevant and appropriate. We suggest that tutors bookmark useful websites and consider enabling learners to access them through the school/college intranet.