OCR
RECOGNISING ACHIEVEMENT

Project

Level 2 Higher Project

H855 – Exemplar Folder 1

Level 2 Project

Folder 1 Commentary

Technology in sport

This investigation Project has a clear aim supported by a detailed rationale. There is a strong focus on Project Management although some of the evidence for this could be more prominent. It uses a wide range of well-chosen and appropriate sources. The candidate shows a good understanding of questionnaire reliability and rigour. The centre has used a range of documents to deliver this project; it is however, a possibility that this has restricted the candidate's achievement.

AO1

The title is phrased as a question and this is clear and answerable. The project retains a focus on this question and does not become side-tracked into considering other issues. There is some evidence of planning but there is no timeline with dates. The introduction shows a personal engagement with the topic.

AO2

A wide range of appropriate secondary sources have been used, and the project shows careful selection and collation of information, although some quotations are unattributed. The summary of advantages and disadvantages is well referenced and highly readable, although some of the material would be better placed in the conclusions. Primary research is in the form of a questionnaire which is well analysed and the data well tabulated.

AO4

The conclusions are well founded in the primary and secondary research and the candidate has been open-minded throughout the project. The evaluation has a strong focus on the process and communicates a complex argument in a concise and engaging manner.

This project was awarded 51 marks.

OCR
RECOGNISING ACHIEVEMENT

Level 2 Higher Project

Unit H855

Unit Recording Sheet

Please read the instructions printed at the end of this form. **One** of these cover sheets, suitably completed, should be attached to the assessed work of **each** candidate.

Unit Code	H855		**Year**	2	0	10
Centre Name		**Centre Number**				
Candidate Name	HALLAM C	**Candidate Number**				

AO	Criteria			Teacher Comment	Mark
1	• Selection of the project or task, with limited individual input • Planning of the project or task, with limited individual input • Limited individual input during the process of the project • Limited organisational skills used to complete the project • Using one or two methods to work towards achieving agreed objectives • Using few resources to work towards achieving agreed objectives [0 1 2 3 4]	• Selection of the project or task, with some individual input • Planning of the project or task, with some individual input • Some individual input during the process of the project • Some application of organisational skills to complete the project • Using a range of methods to achieve agreed objectives • Using a range of resources to achieve agreed objectives [5 6 7 8]	• Individual selection of the project or task • Individual planning of the project or task • Individual input during the process of the project • Application of organisational skills to complete the project • Using a wide range of methods to achieve agreed objectives • Using a wide range of resources to achieve agreed objectives [9 10 11 12]	initially a bit sluggish, but really got to grips with project management	9

2	• Researching some information relevant to the topic • Selecting information from one or two sources • Some collation of information • Some application of the information obtained, when working towards achieving agreed objectives [0 1 2 3 4]	• Researching a range of information relevant to the topic • Selecting information from a range of sources • Collating information from a range of sources • Applying the information obtained towards achieving agreed objectives [5 6 7 8]	• Researching a wide range of information relevant to the topic • Selecting information from a wide range of sources • Collating information from a wide range of sources • Applying information in a relevant manner to achieve agreed objectives [9 10 11 12]	Depth & breadth of both primary + secondary research.	11
3	• Good knowledge exists of what had to be done to achieve the intended outcome • Appropriate tools and equipment (where relevant) were selected and used in a safe manner with guidance and supervision • Relevant skills and technologies were selected and used to achieve objectives; these may include PLTS and functional skills • When relevant, problem solving and working with others have been used [0 1 2 3 4 5 6 7 8]	• Excellent knowledge exists of what had to be done to achieve the intended outcome • A range of appropriate tools and equipment (where relevant) were selected and used in a safe manner with some guidance and supervision • Relevant skills and technologies were efficiently selected and used to achieve objectives; these may include PLTS and functional skills. • When relevant, problem solving and working with others have been applied efficiently [9 10 11 12 13 14 15 16]	• Excellent knowledge exists (some of which was acquired by the learner independently) of what had to be done to achieve the intended outcome • A well-selected range of appropriate tools and equipment (where relevant) was used in a safe manner with minimal guidance and supervision • A range of relevant skills and technologies, some of which were at a high level, were efficiently selected and used to achieve objectives; these may include PLTS and functional skills. • When relevant, problem solving and working with others have been applied efficiently and successfully [17 18 19 20 21 22 23 24]	Demonstrated a range of research skills + good use of IT skills developed in the taught programme. Effective communication in class	21

4	• Some analysis of project outcomes • Drawing some conclusions from the project outcomes • Using appropriate methods to communicate project outcomes • Presenting evidence in an appropriate format • Knowledge and understanding of links with other areas of study and/or areas of interest • Evaluation of the project, judging its relevance and value • Evaluation of experiences and learning with examples of how this could improve future progress **[0 1 2 3 4]**	• Analysis of project outcomes • Drawing conclusions from the project outcomes • Using appropriate methods to communicate project outcomes effectively • Presenting evidence in an appropriate format • Clear knowledge and understanding of links with other areas of study and/or areas of interest • Competent evaluation of the project judging its relevance and value • Competent evaluation of experiences and learning with examples of how this could improve future progress **[5 6 7 8]**	• In-depth analysis of project outcomes • Drawing a range of conclusions from the project outcomes • Identifying and using appropriate methods to communicate project outcomes effectively • Presenting evidence in an appropriate format • Clear and detailed knowledge of links with other areas of study and/or areas of interest • Understanding of links with other areas of study and/or areas of interest • In-depth evaluation of the project; judging its relevance and value • In-depth evaluation of experiences and learning with examples of how this could improve future progress **[9 10 11 12]**	Reflective + evaluative; drew links to other subjects and how skills have been developed during the course. well presented throughout.	12.
				Total/60	53

Guidance on Completion of this Form

1 **One** sheet should be used for each candidate.

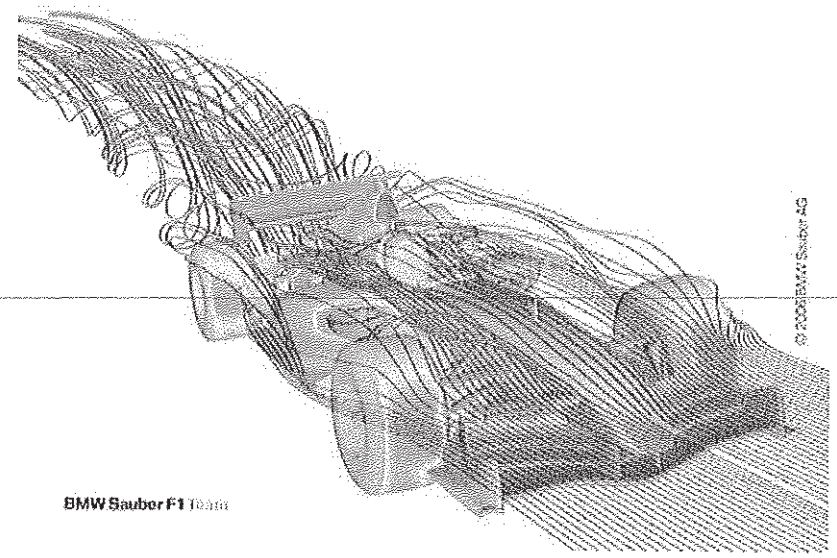
2 Please ensure that the appropriate boxes at the top of the form are completed.

3 Circle the mark awarded for each strand of the marking criteria in the appropriate box.

4 Add the marks for the strands together to give a total out of 60. Enter this total in the relevant box.

Academic Research Course

Is technology good for sport?



(http://lotusenthusiast.net/wp-content/uploads/2009/10/BMWSauberF1windtunnel.jpg)

Centre numb

Candidate number:

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Wednesday P2

Word count: 3950

Contents

Rationale

The topic of technology in sport is something very relevant to me in two ways. Firstly I have a keen interest in the majority of sports and play competitive football and cricket. Secondly I am taking PE at AS level and the question is topical in that course. I intend to have an engineering based career and the design of sports equipment is an area I might like to work in.

For this project I will look at the social impact of sport and whether advancements in sport benefit the everyday citizen. Sport reflects society because that is where it is created or developed. However the public are also influenced by elite sport and an example of this is the upcoming 2012 London Olympics, where the success of our athletes will be a matter of national pride.

From initial research into the project title I can see there are arguments for and against the way sports are changing which will be examined later in the project. I am personally in favour of state of the art equipment and electronic monitoring (such as TV replays) but I think I will come to see that with such rapid technological advancements recently, it has to be used carefully and responsibly to prevent sports becoming superhuman and unrecognisable.

Advantages of technology in sport

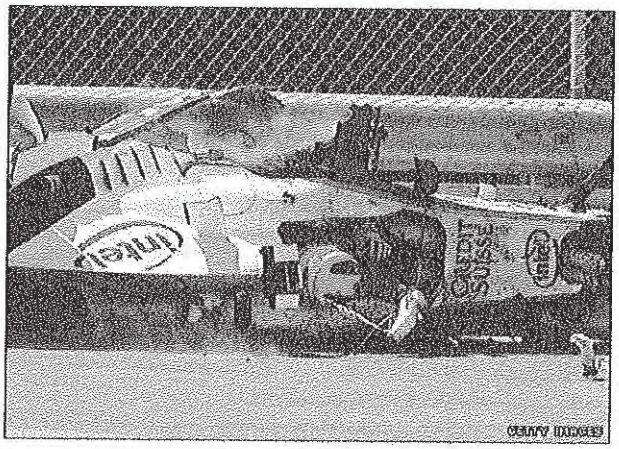
The increased use of technology in sport is causing more world records to be broken than ever before. The BBC reported *(Swimming's fastest year, 2008)* that in the first 4 months of 2008, swimming world records were being broken on an unprecedented scale. In this time 37 records were broken by large winning margins where as at the equivalent period in 2004 only 5 were broken. Evidence of technologies influence is that 29 of the new records have come since the introduction of a new type of swimming suit. It uses a new material with less friction so the suit "has up to 5% less drag in the water than a previous model produced last year". It is also extremely tight to stop muscles vibrating which can also cause drag. This clearly shows how scientific analysis of materials and the progression of equipment can improve the performance of elite athletes. It is this competitive drive that causes records to be broken and in turn makes watching elite sport so popular.

However such an advancement may lead to all previous records becoming invalid because they were not taken in equivalent conditions, which has been termed by some as 'technological doping' similar to drugs. It raises questions about whether records are a comparison of athlete ability or technological advancement. For this reason the swimming world governing body announced the ban of the suits for 2010 because they were 'technical aids' *(The Telegraph, 24/7/09)*. I feel this is an appropriate measure to take to maintain the focus on the hard work and training of the athlete rather than a comparison of the swimsuits they are wearing.

Technology has made sport safer. This is detailed in a book written by Stewart Ross entitled 'Higher, Further, Faster...is technology improving sport?' (2008). This source is recent enough to have up to date information and is more reliable than an internet source because it references its evidence.

A case study refers to former England footballer Jeff Astle who died in 2002 at 59, "probably because of 'industrial disease' – prolonged heading of a heavy leather football". Until late in the 20th century footballs almost doubled in weight when they got wet, often resulting head and neck injuries for the players. Even during the 1970s "just kicking a mud-and-water sodden rugby ball was enough to seriously damage the knee cartilage of Scotland international Ian Robertson". Over the last few decades technological advancement has enabled rugby and footballs to become virtually water proof. "The 2006 World Cup ball was said to gain no more than 0.1% of its weight in the wet when the maximum permitted weight gain is 10%". This would give a consistently acceptable impact of the ball when headed which can only be seen as a step forward for the safety of football players.

Another example is Formula 1 cars where the introduction of new materials and continued refinement of car crash structures has made serious injuries very rare despite it being a potentially lethal sport. For example in 2007, Robert Kubica was involved in an crash that rendered his car unrecognisable and yet only suffered a sprained ankle and minor concussion *(Autosport, 2007)*. A mere few years ago the outcome would certainly have been worse but due to carbon fibre crumple zones on the car it was able to gradually absorb the impact of the crash without seriously harming the driver. The state of the car is pictured to the right *(Getty Images)*.



These case studies present enough evidence to leave me in little doubt of the advantages of developing safer sport. Improved equipment can also be combined with regulations to prevent competition becoming dangerous. This is also a reflection on societies increasing efforts to ensure safe homes and workplaces and that risks are minimised.

The application of science to elite sport has lead to an increase in the performance of athletes. UK Sport is the organisation controlling elite sport in the UK and wants athletes "to be the most prepared and best equipped of all on the world stage" *(UK Sport.com, 2010)*. An example of this comes from the recent 2010 Winter Olympics where British athlete Amy Williams won the bob skeleton competition. A UK Sport press release explains the secrets of success as the 4 year technological development of her sled. 200 hours of wind tunnel testing and computer fluid dynamics enabled her to win by 0.56 seconds. With winning margins so small it shows how vital it is to have the best equipment in modern sport if you are to win. UK Sport apply a 'no compromise' approach to athlete development which in summary is the idea that every aspect of development must be of the highest standard possible, particularly including the equipment and sports medicine available, in order for the athlete to be victorious.

I feel with so much money spent on Britain's elite sports people they need to justify the cost. It may be that the public would rather they had access to the money instead, or perhaps national pride and success is worth the price. I intend to establish in my primary research an indication of how elite sports science is regarded by members of public.

Disadvantages of technology in sport

Using Stewart Ross's book 'Higher, Further, Faster...is technology improving sport' I established that the term 'technology' encompasses a wide range of topics. Here are some of the views he puts forward:

The increasing use of technology in sport is causing the boundary between athletes' skill and equipment to be blurred. Both can be determining factors in a victory, as shown by the Olympic sport of pole vault. This is one of the few sports where the National Governing body (IAAF) has minimal regulations the use of technology, competitors are allowed virtually unlimited development of the poles including material and length. This gives freedom for sports companies to push the boundaries of pole vault, however it merges the lifetime training of the athlete with the hugely significant equipment that the use, and therefore you are reliant on the best design to succeed in the sport. As well as this, as a consequence of more elastic poles a new technique is used where the athlete 'pours' over the bar. The criticism of pole vault is that "it is impossible to separate technique form apparatus" - technology leads and the athlete follows, rather than it being a pure display of talent and skill.

Generally I disagree with technological advancement being unlimited because it risks the sport becoming unrecognisable. However in this case the scope for new equipment designs has its own limitations due to the simplicity of the sport. Perhaps with all sports true competition should be done on the same equipment, yet this disagrees with the commercialism of modern sport and would wipe out the market for sports equipment manufacturers. It could also risk sports reaching a plateau where there is little drive for improvement. One key interest for spectators is record breaking performances, shown clearly by my primary research (54% 'like' record breaking due to new equipment). If this interest was to dwindle sport could suffer financially since the modern business model is dependent on viewing figures for its money.

Sometimes the facilities available cannot adapt to a development in equipment. Golf is a sport that has seen dramatic advances in golf balls and clubs during the 20th Century. However, recently the sport hit a limit; "By the early noughties, the combination of ball and club technology was threatening to make even the best courses too short". It would take huge investment to modify all courses to cope with the potential distance of golf shots, and if the trend continued then additional changes may be needed in the future. As a result, the National Governing Body stepped in to create a limit that a ball could travel when hit with a certain force. In turn this conflicted with manufacturers which "harms the good name of the sport".

In this situation I agree that the technology needed to be limited but doing so always upsets one party, in this case the equipment manufacturers.

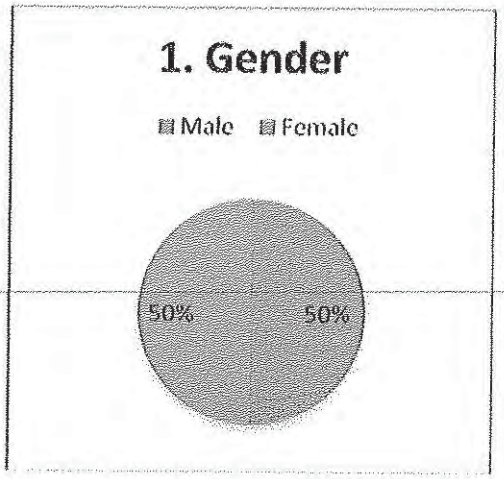
Using electronic referees and umpires has the consequence of disregarding the human officials. In cricket in a trial game the ability to challenge the umpire was tested but was disliked by those involved – "it does not have a place in the game". It also meant "[the referral system] could undermine the authority of the umpire on the field". Electronic goal line technology in football can establish if the ball crossed the line but the concept has been strongly resisted by the FA. There is a fear that the decision will depend on the technology and yet it could go wrong like all electronics can occasionally. It could also ruin the flow of the game while decisions are waited for and also may put additional pressure on the goalkeeper to be cautious in case of fumbling the ball *(SoccerLens, 2007)*. It could also create an imbalance in the way the sport is played between premier teams and Sunday leagues.
However some recognise a time for change: *"I've never been an advocate of technology but...when huge decisions at the top level have an impact on teams, management and players then something has to be done" Mark Hughes, manager of Blackburn Rovers, 2007.* This shows a frustration at the current system but the reliability of this source is limited because a team's manager will be biased and could just be responding to an injustice in a recent match.

The July/August 2009 edition of Ace Tennis magazine explains how the balance between technology and tennis' core values "is a constant struggle...to protect things like the grass courts, the all-white clothing, the ticket queues". This source is highlighting the intrinsic issue with all development in that it alters the game. Society in general rejects change and this is why big developments in a sport are often met with resistance. The worry is that the 'Corinthian Spirit' of playing the game for its own sake rather than to win will be lost as a result of increased competition in sport.

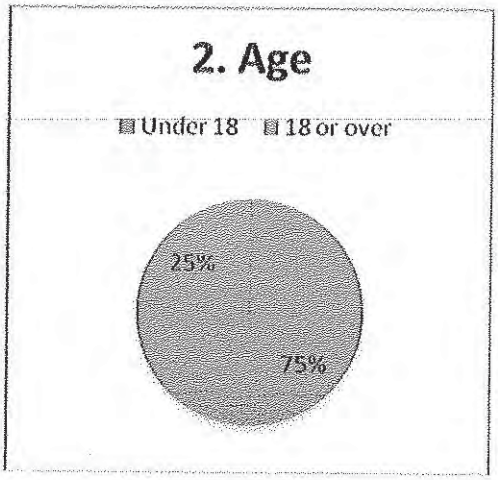
The view put forward is one I can understand. To be exciting and successful a sport must have rigid limits that can be pushed and technological change can bring about a whole new way of playing. For instance a new racquet that is twice as powerful might reduce the number of drop shots played because a powerful shot is more effective. With a sport as traditional as tennis I can see why they resist the break from its traditions.

Primary Research

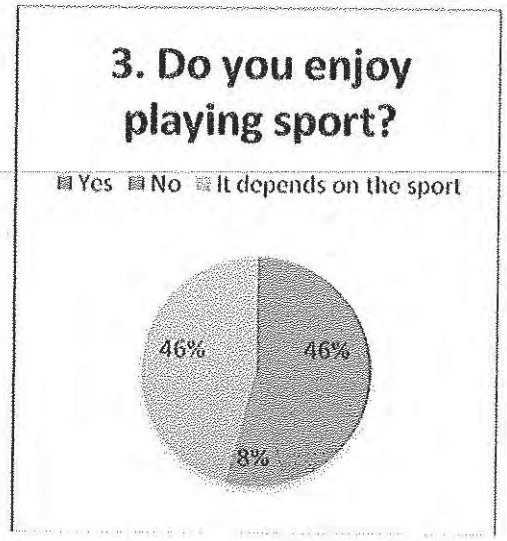
My own research took the form of a questionnaire with 8 questions that I designed to compare and contrast my current preconceptions on the topic and give an unbiased view. I specifically used a tick box format because form my own experience of questionnaires I prefer them to be brief and easy to fill in with no ambiguous, long writing questions. I printed them so I could get an instant reply on handing them out rather than waiting on electronic versions to be filled in and sent back. It also doesn't exclude those that can't access emails. **In total my sample size was 24**



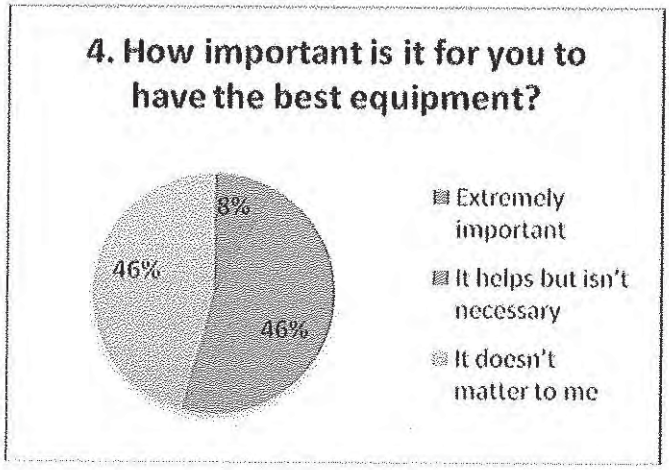
My first question is self explanatory. I asked participants to indicate their gender so that I could ensure I had an unbiased sample to base my conclusions on. This turned out to be useful when I found I had more than half females and had to print 4 more questionnaires and increase my sample size. Nevertheless this will only give me more reliable data.



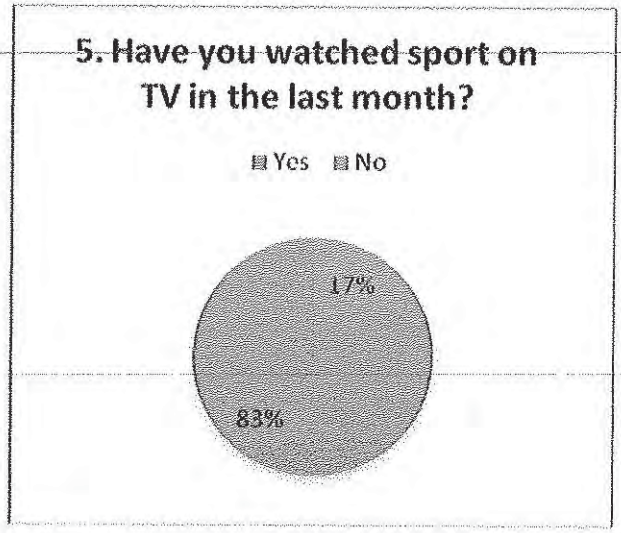
Many of the participants were peers and although most were people I only knew indirectly, this is why I have more under 18s than 18 or overs. This might cause a slight age imbalance in my data but not enough to jeopardise the research. Further analysis has shown me (related to q3) that 50% of under 18s said that enjoyed sport compared to 33% for those 18 years or older. This corresponds to the trend of decreased sport participation the older you get, which the governments 'Sport England' organisation aims to increase.



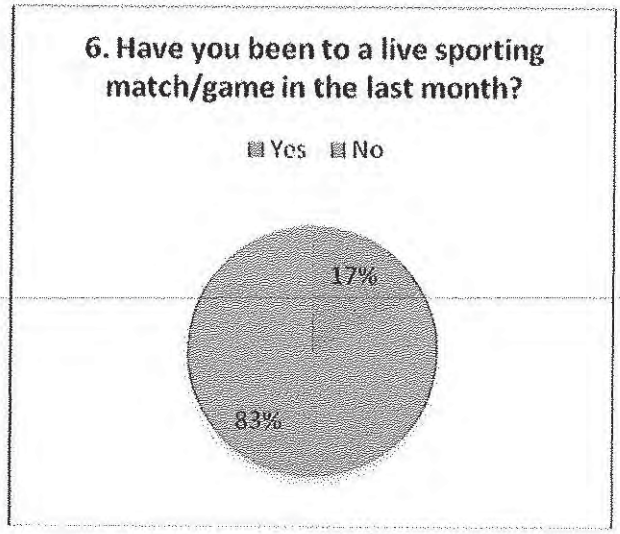
This question aimed to establish if my sample had experience of playing sport and whether this influences their views about equipment. Only 8% said they do not enjoy sport. I linked this with q4: 92% enjoy some form of sport and yet of these people 45% said having the best equipment doesn't matter at all to them. Relating back to my title I can say that at recreational level, for a lot of people technology does not affect their game. To progress this I would want to sample a higher level of sport to see if equipment has more impact.



I wanted to find if people saw the need for money to be spent developing consumer equipment and whether they felt this was important to their game. I was surprised that nearly half indicated it was irrelevant because this contrasts my own view that the best available equipment, such as squash racquets, has both a physical impact but also a mental boost.



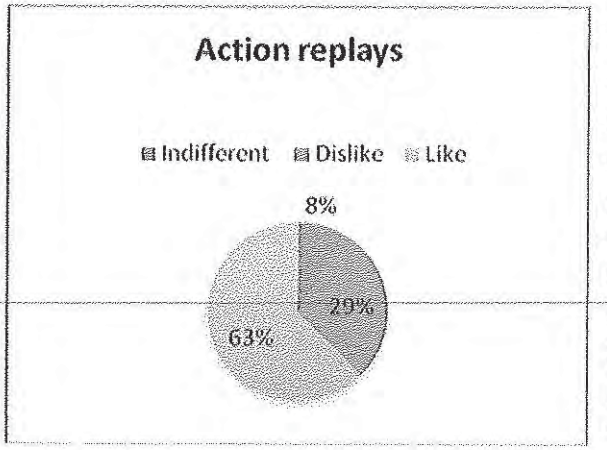
It is highly likely that those that have seen TV sport will know of TV adverts – a concept only available since to development of broadcasting and increasingly knowledgeable analysis during the game, all resulting in an improved spectator experience. Many of my sample that did not enjoy playing sport have however watched it recently.



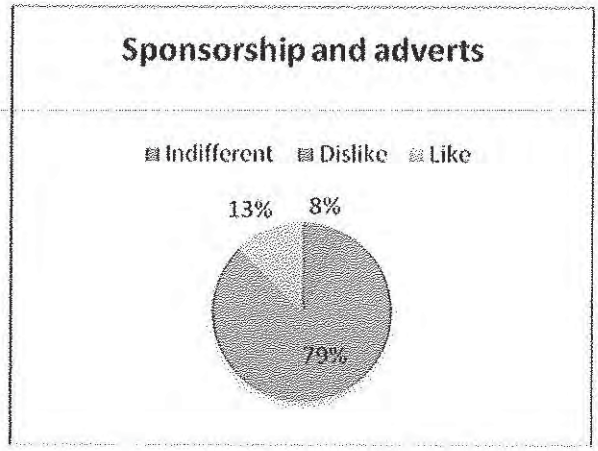
This response was lower than expected with only a sixth answering yes. It showed me that people either have little interest or more likely not enough time to travel to a sporting event. The people that did not play sport also didn't go to live matches so as expected it is the sports enthusiasts that travel to live events. Perhaps it's the accessibility and high standard of home spectator viewing that reduces the need to see live sport.

7. "From this list, tick things you like about sport and cross things you dislike"

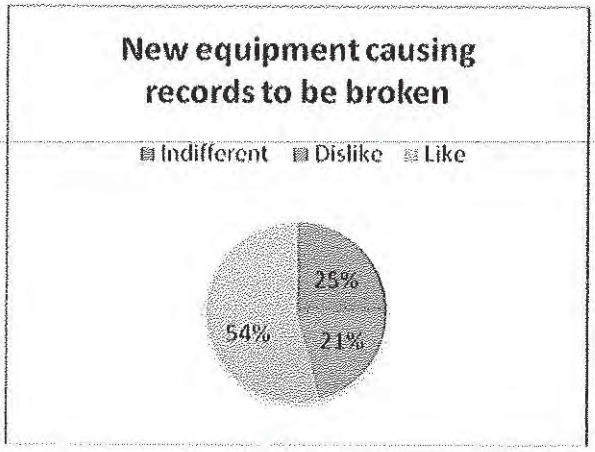
I presented this 4 part question to the participants in a different way with these 4 sport ideas that involve technology. It asked for boxes to be ticked if you like the aspect and crossed if you do not. However I tried to get people to make a decision an in retrospect it would have been better to include an 'indifferent' option – as it was, people left them blank if they had no opinion which is why my charts include this segment.



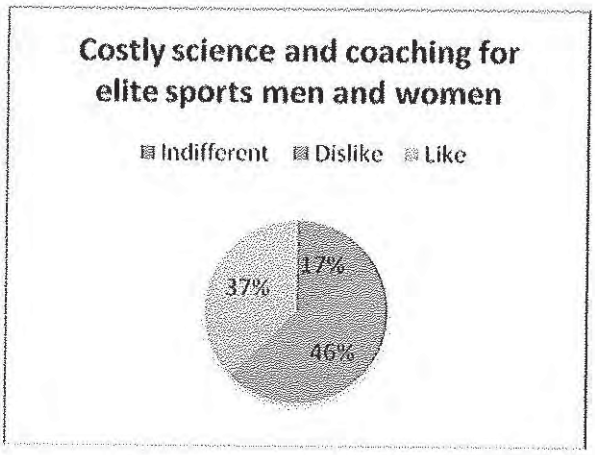
Nearly two-thirds gave a positive response to replays of important match action. This could take the form of both TV replays and live big-screen decisions such as in cricket. This compliments my earlier comment that the popularity of TV sport partly comes from the advancement of the viewing experience through such features, this is backed by a comment written by one participant that they're 'funny when they are in slow motion'. Interestingly 29% dislike replays which I think is because it breaks the game up.



When I wrote this question I expected a negative result and indeed the large majority (79%) expressed a dislike of the commercialism that is now imbedded in sport. Spectators want to see the sport and not have their viewing disrupted by advert breaks. I was intrigued to see that 13% like sponsorship and adverts. Possible factors could be they feel better with the equipment that sponsors top athletes, or maybe they like TV adverts because it gives them a drinks break. I would need to study further the reasons why people had these opinions.

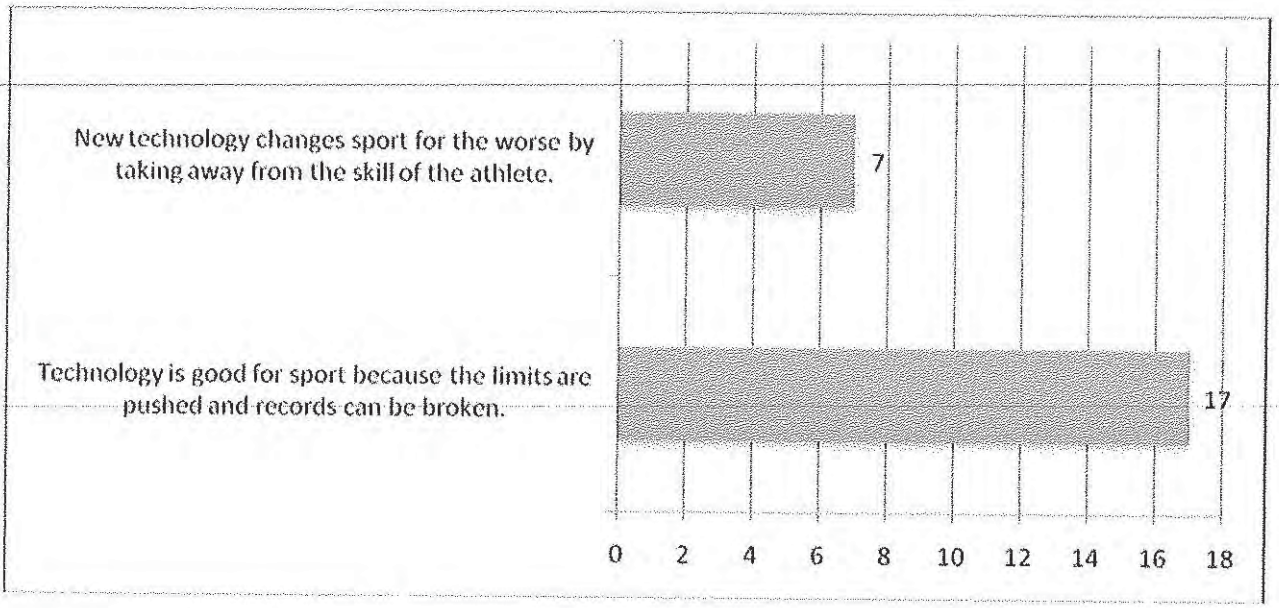


I specified 'new equipment' causing record breaking to link the question to my title. People generally see record breaking as a good thing but in this I wanted people to rethink their answer if the record was due to a new design of equipment. Over half still like this which leads me to believe an entertaining event is more important than equal competition for my sample. A quarter of people had no comment, particularly those that had little interest in sport.



In writing this question I was aware it was slightly leading with the adjective 'costly'. I did this to make people aware there were downsides because 'science' is usually seen as progress and development and I would have got a predictable outcome. As it was the majority that answer the question disliked this. Perhaps they felt the money was wasted when they did not see much of the benefit.

8. "Please choose the statement you most agree with:"



My final question was in effect my samples' own answer to my project title. I used a different question style where I presented two statements and asked participants to pick which one they agreed with more. I thought this was extremely effective because most people had a clear opinion, however there were one or two that were slower to make a decision.

In concurrence with previous data the majority (71%) liked the way technology brings a new challenge to sport and in particular viewing is made more interesting when records are broken. A number of people (29%) expressed fears that the importance of the athlete is lessened with the introduction of technological changes. Although this differed from my original predictions, I have come to see why I got this outcome.

Cross comparison of the questions has raised a point that 67% of under 18s think technology is good for sport where as an increased number of 18 year olds or over, 83%, felt this. I would have expected with society becoming increasingly dependent on technology that the younger participants would have embraced it in sport.

Conclusion

My secondary research has shown that my answer to the title depends on whose viewpoint I look from; for athletes the newest equipment can give them a mental and physical boost over their opponent and yet creates unfair competition if you have kept up with the latest development. For the overall sport technology pushes the boundaries and makes sport safer, however it could enforce a 'win ethic' where winning is seen to be all that matters as well as creating an imbalance in investment for elite and recreation level sport. For the spectator technology is generally seen as advantageous because it increases the excitement of the sport.

The main point I have extracted from my primary research is that generally my cross section of society thought technology is good for sport especially when it causes added excitement such as record breaking. It also showed that people often watch sport on TV even if they are someone who doesn't enjoy playing sport themselves. Action replays add to the viewing experience but on the other hand sponsorship and adverts detract from the event. This is a necessary part of sport because it's this commercialism that pays for the development of new equipment and technology.

In the future sport will probably become more entwined with technology because sport reflects society and our world will adapt computers and technology for increasing number of uses. My generation has grown up in a world of electronic aids and gadgets which finds its way into sport. The danger is that genetic modification and human mechanics will turn sport into an unrecognisable superhuman contest. This is why the application of technology must be done carefully. ✓

After research, my considered answer to the project title is that technology is generally good for sport but crucially must be well moderated, both now and in the future.

Evaluation

I have come to realise that the term 'technology' is fairly loose and can be applied to almost any aspect of sport. Although I thought my title was effective, I could develop it by targeting a more specific aspect such as new sports equipment. I am pleased with the structure of my project and I feel it adequately addresses the title, as well as linking with citizenship.

The most effective part of the project I think was my primary research. This was successful as a result of our introductory lessons in interview and questioning techniques. I liked the tick box format that I used because it made it very simple for people to fill in and it was for this reason that getting 24 filled in was quick and easy. The questions I asked were very relevant to answering my title and crucially it gave a contrasting outcome to my own view. One downside was that the first question (gender) was tucked under the title so a few people missed it and I had to recall who they were. Next time I would also make it a tick box rather than crossing out words.

My time management was an area that could be improved since I spent far too long collecting secondary sources. One change I will try to make as a result is in future to plan a timeline to keep myself on target. A skill I have learnt is to analyse other peoples' arguments rather than construct my own using a range of sources which has given me an alternative way to approach such a project. This style did take some getting used to because I am accustomed to choosing unbiased sources to support my own case. I tried to use the 'connect-extend-challenge' technique to write up the sources which is something I will apply in any future research I do.

At the start of the project I specified my plan for the title and how it was appropriate and I feel that I stayed close to those initial ideas. Throughout, I kept a Personal Action Plan which documents how I spent my time each week. This gave me time to reflect on how effectively I was working and gave me small aims for the next session. In general I found that I spent longer than I intended on the research part of the project because I wanted to do it well rather than rush the planning stages. My Project Progression Record was a way of monitoring the tasks I had completed and seeing where the project should go next.

good use of the templates

Overall I am pleased with the reliability of the conclusion I was able to make and found the project to both further my own interest in the topic and benefit my AS level PE course, as well as giving a new way to approach such a project at university.

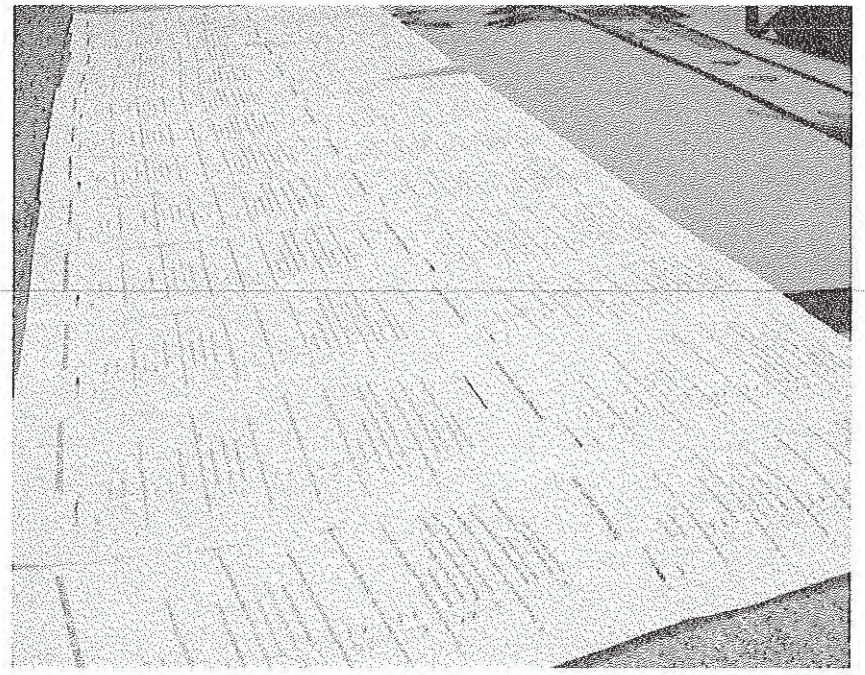
References

- Ace Tennis magazine (Jul/Aug 2009) *Roof on centre court*
- Autosport magazine (June 2007) *Kubica in serious crash at Montreal* by Noble, J.
- Ross, S. (2008) *Higher, Further, Faster...is technology improving sport?* John Wiley & Sons Ltd
- The Telegraph (published 24/7/09) *Fina bans hi-tech swimsuits with only textile suits allowed from 2010* by Steve Wilson and agencies
  Archive: http://www.telegraph.co.uk/sport/othersports/swimming/5900497/Fina-bans-hi-tech-swimsuits-with-only-textile-suits-allowed-from-2010.html
  Date accessed 10/03/10

Websites and articles:

- BBC (15/4/2008) *Swimming's fastest year,*
  http://news.bbc.co.uk/sport1/hi/olympics/swimming/7346071.stm,
  Date accessed 3/3/10
- SoccerLens (22/08/07) http://soccerlens.com/the-goal-line-technology-debate-a-goalkeepers-perspective/2874/ Date accessed 30/03/10
- UK Sport (2010) *Research & Innovation*
  http://www.uksport.gov.uk/pages/research-innovation/ Date accessed 17/03/10
- UK Sport (2010) *The secrets of Amy's success*
  http://www.uksport.gov.uk/news/secrets-of-amys-success Date accessed 26/03/10

Evidence of the 24 completed questionnaires



Project Progression Record

Level 2

Academic Research Course

Centre Name:

Centre Number:

Learner Name:

Learner Number: _____

Your topic chosen must allow you:

- to be fairly assessed at the standard applicable to the Project level
- the opportunity to meet comparable demands to those made on other learners working at the same level
- to meet all of the Learning Outcomes and Assessment Objectives of the Project

Activity	Date	Detail	Supervisor's Initials	Comments by supervisor
1. Start date	September 2009	10 introductory lessons on research and communication including exercises on note taking, website reliability, library searches and interview techniques.	KEB	Excellent attendance - thankyou for your input + your presentation.
2. Topic/working title	December 2009	I am interested in a range of topics and title for my project and will be narrowing down my preferred option.	KEB	It's ok to be broad + narrow down later

Activity	Date	Details	Supervisor's Initials	Comments
3. Does the title support learner progression (skills, knowledge, understanding?)	January 2010	This is relevant for me because I play sport competitively where advanced equipment is appreciated. It also compliments my PE AS course. I intend to have a career in engineering which links in with the technology parts of the project. It will require skills in time management and I will learn how to undertake primary research.	KEB	Insightful – this topic extends your learning.
4. Question, task, brief or commission identified	January 2010	To decide on a topic I listed areas of interest and then considered sub-topics within them. "Is technology good for sport?"	KEB	✓
5. Intended outcome(s)/objectives specified	February 2010	I hope I will become more competent at finding and organising sources into a logical project structure. The project should build on my knowledge for my PE course.	KEB	✓
6. What form will the assessment evidence for the project take?	February 2010	A written report of no more than 3000 words using a variety of sources.	KEB	✓ Consider primary research?
7. Plan worked out to show how to deliver the outcome eg timeline	January/ February/ March 2010	I will be monitoring my progress, keeping a record of my work and from this I can identify what needs to be done next.	KEB	Spend 10 mins during lessons to do this – it will be time well spent.

8. Choose ways to arrive at the outcome eg select tools, equipment, techniques and technologies, to arrive at the outcome	January / March 2010	I will use my own knowledge from my AS PE course backed up with secondary sources: books from the library, newspaper articles and websites. I will also undertake primary research to gather my own data. My project will use Microsoft Word and Excel to word process and analyse data. My primary research will be in the form of a questionnaire completed by an appropriate sample of people and then the data compiled as pie charts to quickly portray the percentages.	KEB	✓ You need to analyse the data as well as display it. How will you do this?
9. Information obtained from a range of sources	March 2010	I found a particularly relevant book *'Higher, Further, Faster...is technology improving sport?'* alongside articles from the telegraph, magazines and discussions on websites. I also discussed the subject with my PE teacher.	KEB	✓
10. Information selected to fit the question/task/brief	February 2010	Information was selected if it made an argument for or against technology in sport. I tried to find sources that gave an opinion so I could discuss its view. For my primary research I made paper copies of my questionnaire. I decided this is better than sending it electronically because it can be filled in when I hand it out. This worked well and I easily managed to get a total of 24 questionnaires filled in.	KEB	✓ ✓ Well done - you ensure a higher response rate - how does this compromise the validity of the data you collect?

11. Links with other areas of study/areas of interest recognised and applied as relevant (including Citizenship)	December 2009	The topic links to AS Physical Education where we study the impact of technology in sports and how they have changed as a result. I am interested in both engineering and playing sport so the topic brings these together. Elite sport is closely linked with citizenship because the games develop from the leisure activities that are in place in society.	KEB	✓ ✓ ✓
12. Skills applied to information that has been collected in order to achieve desired outcomes (objectives)	March 2010	Secondary research requires a judgement over the reliability of the sources which can be made based on where the information came from. Books tend to be reliable because they require time and effort to publish but that doesn't guarantee the author's evidence is correct. Websites are used with caution because it is easy for anyone to put their opinions on the internet. I sourced reputable organisations such as the Telegraph and the BBC; a company obliged to give unbiased information. All information is more credible if the author references their evidence. I used a 'connect-extend-challenge' technique to analyse each secondary source. Early in the course we developed our presentation skills and studied good interview technique which will both be required in my primary research. The project needs an organised approach to keep on track which is why I am filling in a PAP diary.	KEB	Remember to raise these issues in your project evaluation. → tie this back to the work we did on web searches • .co • .org • .ac etc + their credibility

13. Tools, equipment, techniques and technologies applied to information that has been collected in order to achieve desired outcomes (objectives)	March 2010	My pie charts produced in Excel were extremely effective at quickly portraying the percentage of each answer. These were colour coded and the exact percentages were marked on for clarity. In analysing the data I also looked at other connections between the questions such as how does the enjoyment of sport compare between the sampled age groups. The results gave a coherent answer that technology is generally good for the spectator.	KEB	✓
14. Identify outcomes/objectives achieved so far	March 2010	I have completed my research and reviewed my sources all to a reasonable standard so far. I may go back and add more detail to them later. I have yet to write my conclusion and evaluation.	KEB	✓ good work so far - look against bibliography layout.
15. Evaluation of outcomes so far	March 2010	At the moment I feel my project need to be more detailed and I may look back and add to my arguments. Although the course requires efficient working I spent too long finding sources and need to work quicker in my analysis of them.	KEB	That's the research process - it's not always linear: you're doing the right thing to go back.
16. Evaluation of own learning and performance so far	March 2010	One of the skills I have had to develop is taking primary research in both choosing useful questions and taking a relevant sample of people. I'm finding researching the topic very interesting and hadn't realised technology could change and invalidate sport so much. I need to write quicker whilst still maintaining good quality arguments.	KEB	Excellent work Esther!

Personal Action Plan (PAP)

Planning:

Date:	Skills:	Something I've learnt:	How it is useful:
16/09/09	Introduction	How to plan the project	To organise my working to spend my time well.
23/09/09	Independent research	To judge a source's accuracy by the person that wrote it and where you found it.	It is essential to use reliable, referenced sources so projects can have credible conclusions.
30/09/09	Interview techniques	Confidence in communication. Examples of good and bad interviews.	I should be contributing more in lessons. Good interviews are vital for my primary research.
7/10/09	Note taking methods	The indenting method refines my current technique. I wasn't aware of the other techniques.	Structuring my note taking will help in class and make my revision easier. I did not like the other methods so much.
14/10/09	Preparing presentation	It is useful to break the subject into sub-headings	Each member in a group can be work more effectively if they are focusing on a sub-topic.
11/11/09	Presenting our presentation and Quantitative & qualitative	Be confident in speaking. Keep speaking short. Different ways of asking questions.	Improvement in any presentation in the future, going onto university. Lets me write an effective primary research survey.
25/11/09	ICT skills	Being able to interpret messy data and organise it into a graph.	Primary research will need organising and secondary sources might have to be arranged.
2/12/09	Deciding on project topic	Details on the level of projects available and what qualifications they give.	It is the basis of my project. I can develop my ideas before we start next term.
9/12/09	Identifying project areas and layout of the project	Considering various project areas and working towards a potential title. We looked at details in how marks are awarded for the course.	It is useful to know the structure of the project and I was surprised at how much focus is on the planning and monitoring side of the project.
6/01/10	Planning	Filling in details of our topic and how we are going to go about writing it.	It is easier to write the project if you have a clear plan to work on.
13/01/10	Sourcing materials	It is important to use reliable websites such as '.ac' or '.edu'.	This will give me more confidence in my conclusions in my project.
20/01/10	Referencing	Looked up how to reference a book correctly.	To make sure I'm using the proper Harvard referencing system

Project:

Date:	Working on:	Comment:	Evaluation of session:
20/01/10	Introduction	I set out what I intend to find in the project. Mostly complete, will finish it next time.	I found it very motivating to have independence about my working. Having to decide my own plan meant I was focused when it came to working.
27/01/10	Secondary sources	Time spend reading a useful book for a source. Looked into what I should be doing for the project, such as filling in a Project Progression Record.	My first source will be crucial for evidence regarding the topic. I will use its facts and make my own evaluations of the information. I was held up this session by being confused as to the various forms that need to be filled in each lesson.
3/02/10	Template for sources	I created a document that will allow me to systematically record and evaluate secondary sources using the 'connect-extend-challenge' technique. I also began planning the sub-titles in my project.	The time spent in planning and setting up the resources to use will make my project run smoothly. It also ensures I properly assess each one.
10/02/10	Project structure	To begin with I updated my Project Progression Record. I spent a few minutes reading a relevant book and then filled in my secondary sources form. I also decided the layout of my project.	I managed to fill in my records quickly today which leaves more time on the report. Using the secondary sources form I can isolate key points from an extensive source and develop the ideas. Identifying sub-titles gives me a clearer idea about the layout of my project.
3/03/10	Reviewing secondary sources	I was using the connect-extend-challenge technique to put down arguments for technology improving sport.	I would like to be getting along quicker using the 'connect-extend-challenge' review technique and will need to catch up on my sources.
10/3/10	Writing my arguments	Building on my arguments for technology damaging sport	I was pleased with how the structuring of connect-extend-challenge was showing through since I had never known of this technique.

Date:	Skills:	Something I've learnt:	How it is useful:
11/3/10	Filling in my PAP and PPR. Writing my questionnaire.	Updating my planning records. I wanted 8 questions and designed a tick box format so they were quick for people to fill in.	I spent half an hour catching up on this. From my primary research I hope to get an impression of peoples' opinions on my topic. I like my questions and will undertake it this week.
17/3/10	Collating my arguments against	Using my secondary sources I was able to present the case against the use of technology in sport.	This took longer than I expected and I had to finish it at home. However I am reasonable happy with the outcome of the arguments section.
21/03/10	Writing up my primary research	I collated my questionnaires into pie chart format on Microsoft Excel and analysed the information they showed.	I felt my questionnaire worked well because it was quick and easy for people to fill in. My questions tried to get people to make a decision but looking back it would have been better to include an 'indifferent' option if they had no opinion.
24/03/10	Conclusion	An assessment of the secondary and primary research I had done and how this answered my title.	I was extremely pleased with the clear conclusion that I could make from the research I had done. Next I will evaluate my project overall.
31/03/10	Evaluation and final check	I wrote my evaluation of how well I undertook the task and finished by checking through all my documents to ensure they were all filled in and to a good standard.	The evaluation raised some valid points about how well I worked and made me think about what I have taken from the project. The final check was really useful to make sure I haven't omitted anything crucial.
1/04/10	**Project handed in**		

Plan at start of project

Now you have your project title and aims, you need to plan how to undertake your project.

Outline the next steps in your planned research/initial development:

Firstly I will research the counter argument; that technology is bad for sport. This will identify whether both sides are supported and a conclusion could be made. To do this I will mainly use the internet to find articles against the increasing role of technology in particular sports and why it is seen as a hindrance. After that I will look at the advantages that technology is bringing to sport and society in general. Later I will undertake primary research to discover how my peers feel about developing technology and whether is really benefits us.

Supervisor's main comments and advice:

(1) Start with Secondary Source research. If you use C-E-C technique to take notes it will make it very easy to compare the arguments.

Changes, clarification or additions you plan on making to your title/plan as a result:

Record of Initial Planning for the ARC

Your first idea for a topic area/title:

Is technology in sport a good thing?

Your first ideas for research and development of your project
(Where can you find information to help you? Which sources can you utilise?)

Books	☑	Teachers	☑
Newspapers	☑	Parents/peers	☑
Journals/magazines	☐		
The Internet	☑		

The link with citizenship:

Human endeavour + restrictions to it;

Your teacher's comments and advice:

Good range of sources required for this!
Try + use good internet sites with an academic basis .ac .edu rather than just .com. Think about bias. 4-7 sources

As a result of discussion with your teacher, have you made any changes, additions or clarifications to your project title?

NOW COMPLETE PROJECT CHECKLIST

THE ARC PROJECT CHECKLIST

Project title:	**Is technology good for sport?**
Project aim:	I aim to investigate if the development of equipment and technology is beneficial to sport or is detrimental to the game.
Project Outcome:	I would like to know more about the design and engineering of new equipment in sport. It would then be interesting to find out if this helps the competition or just takes the skill away from the athlete. Sport reflects society so more generally the question asks if technology helps society or not. My primary research skills will be developed too.

The Project title, including its aim and outcome, must be reviewed until Yes can be ticked for the questions in the checklist below.

Verification of Title Checklist	**Yes**	**No**	**Comments**
1) Is the title a question, a task or a brief?	✓		If the answer is No you must review the title to ensure that the title is one of these three options.
2) Is there an aim and outcome of the project?	✓		If the answer is No you must ensure that the title is accompanied by a clear aim and outcome.
3) If this is a completely new area of study/activity for the learner, does it allow development appropriate to the level?	✓		If the answer is No you must amend the title to ensure that it does.
4) If this is an extension of an area of experience/study or part of an existing course, does it allow the learner to extend their skills beyond those already developed?	✓		If the answer is No you must amend the title to ensure that it does.

Secondary sources

1)

Name of source: Higher, Further, Faster…Is technology improving sport?
Author: Stewart Ross
Publisher: Wiley
Date of publication: 2008

Key information

After searching for sources I identified this source and discovered the PE department had a copy I could borrow

- Technology has made sport safer: England footballer Jeff Astle died in 2002 at 59 "probably because of 'industrial disease' – prolonged heading of a heavy leather football". Until late in the 20th century footballs almost doubled in weight when wet, often causing head and neck injuries. Technological advancement has enabled them to become water proof.

- Technology has to have restrictions. In golf, 'graphite' shafts emerged in the 1970s enabling the golf ball to be hit much further. The National Governing Body (NGB) of golf had to limit these advancements so as not to render all golf courses too small.

Quotes (with page reference)

p10 "Just kicking a mud-and-water sodden rugby ball was enough to seriously damage the knee cartilage of Scotland international Ian Robertson"
p20 "By the early noughties, the combination of ball and club technology was threatening to make even the best courses too short"
p21 "The 2006 World Cup ball was said to gain no more than 0.1% of its weight in the wet when the maximum permitted weight gain is 10%"
p31 "In the end, technology must be our servant, not our master"
p72 "I've never been an advocate of technology but...when huge decisions at the top level have an impact on teams, management and players then something has to be done" Mark Hughes, manager of Blackburn Rovers, 2007
p91 "[The referral system] could undermine the authority of the umpire on the field"
p150 "Every effort is made to maintain rowing as a sport dominated by talent rather than technology"
p152 "As rowing was already under attack from the IOC for being an expensive, Western and elitist sport, FISA took fright at the cost implications of rendering every conventional single sculling boat redundant and outlawed sliding riggers forthwith" - 1983

Technology in sport - questionnaire

1. ~~Male~~/female

2. Age:
   - [x] Under 18
   - [ ] 18 or over

3. Do you enjoy playing sport? (Tick one box)
   - [ ] Yes
   - [ ] No
   - [x] It depends on the sport

4. How important is it for you to have the best equipment? (Tick one box)
   - [ ] Extremely important
   - [ ] It helps but isn't necessary
   - [x] It doesn't matter to me

5. Have you watched sport on TV in the last month?
   - [x] Yes → 7 SIX NATIONS!!
   - [ ] No

6. Have you been to a live sporting match/game in the last month?
   - [x] Yes
   - [ ] No

7. From this list, tick things you like about sport and cross things you dislike.
   - [x] Action replays - only in slow mo when they're funny
   - [X] Sponsorship and adverts
   - [X] New equipment causing records to be broken
   - [X] Costly science and coaching for elite sports men and women

8. Please choose the statement you most agree with:
   - [x] New technology changes sport for the worse by taking away from the skill of the athlete.
   - [ ] Technology is good for sport because the limits are pushed and records can be broken.