A qualitative study to compare the levels of imagery used between elite and non-elite netball shooters

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A QUALITATIVE STUDY TO COMPARE THE LEVELS OF IMAGERY USED BETWEEN ELITE AND NON-ELITE NETBALL PLAYERS
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ABSTRACT

A qualitative research methodology was used to explore the differences in the use of imagery between three elite and three non-elite netball shooters. Semi-structured interviews were conducted on each player using an interview guide. The participants’ responses were inductively analysed, in which within-case and cross-case methods were conducted on the data. Five categories emerged, these included, imagery training and instruction, when imagery is used, types of imagery, uses of imagery and imagery outcome. All participants reported using imagery but the extent and use varied between the individuals. The elite participants tended to use imagery before competition and very little in training. The non-elite participants, on the other hand, reported using imagery during and after a game and training as an aid to reviewing performance. All participants reported using imagery to enhance performance, improve concentration, increase self confidence and reduce levels of stress and anxiety through relaxation. Individual differences in imagery ability and imagery perspective were found, as well as between the elite and non-elite groups. Imagery was not a strategy that had been implemented into the athletes training program and many did not understand its true beneficial effect. Therefore, coaches need to be educated on the effects of imagery so it can be implemented into an athletes training schedule due to the great enhancements that could result in performance.
CHAPTER I
1.0 INTRODUCTION

Horn (2002) noted that sport psychology, as a field of study, is extremely young and still evolving. Although traditionally it has not been recognized as a sub discipline within the field of academic psychology, Horn (2002) suggested that sport psychology is ready to be embraced by mainstream psychology. Cox (1994, p. 13) defined ‘sport psychology as a science in which the principles of psychology are applied in a sport setting’. Taken as a whole, sport psychology is an exciting subject dedicated to the enhancement of both athletic performance and the social-psychological aspects of human enrichment. Rushall (1989) believed that sport psychology is the key to sporting excellence, helping elite athletes achieve peak performance (Weinberg et al., 2003). Sport psychology professionals are interested in how participation in sport, exercise, and physical activity may enhance personal development and well-being throughout the life span (Weinberg et al., 2003). Further to this, they are also involved in assisting coaches in working with and helping athletes’ to improve their motivation (Cox, 1994). As a result, more and more sport psychologists and coaches have focussed on the four basic psychological skills, relaxation, goal setting, imagery and self talk (Hardy et al., 1996).

Imagery is regarded as one of the basic skills in sports psychology and forms a major component of most sports performer’s preparation for performance (Hardy et al., 1996). Imagery has been defined as ‘the reproduction in the mind of all relevant sensory information which contributes to the successful execution of a skill, or the correct behaviour for a specific situation’ (Bull et al., 1996, p. 67). The most widely used piece of research originated from Paivio (1985) who proposed a model of imagery functions (Salmon et al., 1994). Paivio (1985) stated that imagery exerts its influence on performance and learning via cognitive and motivational functions. Recently Hall et al. (1998) developed the Sports Imagery Questionnaire (SIQ) to explore imagery use according to Paivio’s framework, identifying five types of imagery (Morris et al., 2005).
There are many positive effects of imagery and athletes have used it for a variety of purposes. These include enhancing concentration, self-confidence, motivation and to reduce anxiety levels (Hardy et al., 1996). Barr and Hall (1992) stated that elite and non-elite athletes are distinguished by their imagery use. Elite athletes report using imagery extensively and to great effect (Orlick and Partington, 1988) and have also been reported as being more proficient at imagery than their non-elite-counterparts (Mahoney et al., 1987). Below is a statement from an elite performer, clearly indicating the importance that they attribute imagery to their psychological preparation for competition.

*I did my dives in my head all the time. At night, before going to sleep, I always did my dives. I started with a front dive, the first one that I had to do at the Olympics, and I did everything as if I was actually there. I saw myself on the board with the same bathing suit. Everything was the same. I saw myself in the pool at the Olympics doing my dives. If the dive was wrong, I went back and started over again. It takes a good hour to do perfect imagery of all my dives, but for me it was better than a workout. I felt like I was on the board. Sometimes I would take the weekend off and do imagery five times a day.*

(Orlick and Partington, 1988, p. 112)

Previous research has shown that the use of imagery often enhances performance regardless of skill level, but there is still relatively little known of the processes involved (Hardy et al., 1996). A reason for this has been flaws in the research designs which have been rather constrained and have failed to support whether imagery works (Murphy, 2004). Hardy et al. (1996) commented that most coaches in particular know it works, but have limited understanding of when, where and how imagery is incorporated into an athletes training and performance. In regards to the extensive uses of imagery (Arvinen et al., 2007; Short et al., 2005), it would appear that the integration of imagery into an athletes training programme would prove advantageous (Rotella et al., 1980; Salmon et al., 1994). Therefore, the purpose of the present study is to explore the differences in the use of imagery between elite and non-elite netball shooters, which has not yet been explored in the field of netball. Feltz and Landers (1983) found that imaging a skill often facilitates performance and in some cases is as
effective as physical practice, therefore investigation of this area could prove advantageous.
CHAPTER III
3.0 METHODOLOGY

3.1 Rationale

This study used a qualitative methodology in an attempt to provide rich, in-depth and detailed information from an insider’s view (Hardy et al., 1996). Qualitative research offers a number of advantages, making it a useful tool of inquiry in sport and exercise psychology (Jackson, 1995). Qualitative methods permit the evaluator to study selected issues in depth about a much smaller number of people, increasing the understanding of the cases and situations (Patton, 1990). Further strengths include the power to identify new directions and an ability to identify individual differences as well as examine between-case consistencies (Jackson, 1995). The purpose of interviewing is to access the perspective of the person being interviewed (Patton, 1990). An interview design allows the investigator to ‘really get into the head’ of the athletes, something a questionnaire is unable to do (Patton, 1990). Survey measures are likely to lack sensitivity or fail to identify critical variables (Silverman, 1993). Therefore an interview design was chosen to investigate imagery use by non-elite and elite netball shooters.

3.2 Participants

In the case of the present study the sampling selection was purposeful, which involves selecting rich information cases for in depth study, where one can learn a great deal about issues of central importance to the purpose of the research (Patton, 1990). The purpose of the present study is to assess the use of imagery by non-elite and elite netball shooters. Therefore a researcher is more likely to learn a great deal more by focussing in depth on understanding the needs, incentives and interests of a small number of carefully selected netball shooters than by gathering standardized information from a large, statistically representative sample (Patton, 1990).

There are several different strategies for purposefully selecting information rich cases (Patton, 1990). To take part in the present study the sample had to meet a predetermined criterion and importance (Patton, 1990). According to Saury and Durand (1998, p. 255) an ‘expert is someone who achieves exceptionally high
performance in a particular domain’. Following the example of expertise in teaching, where twenty three experts were chosen following composite selection criteria (Tochon, 1993); the present research used a combination of several criteria to select participants.

To meet the criterion of elite (participants 1-3) playing status in this study the participants had:

- To have played at regional or international standard - all participants had been competing at this level for at least ten years.
- Played either Goal Attack (GA) or Goal Shooter (GS) as their first choice position.
- To be currently competing in matches for UWIC.
- To be aged between 18-22.
- To have some experience of using imagery.

To meet the criterion of non-elite (participants 4-6) playing status in this study the participants had:

- To have played recreationally or at county level - all participants had been competing at this level for at least seven years.
- Played either Goal Attack (GA) or Goal Shooter (GS) as their first choice position.
- To be currently competing in matches for UWIC.
- To be aged between 18-22.
- To have some experience of using imagery.

The elite netball shooters were aged between 18-22 (x= 19.6, SD= 1.52), and the non-elite netball shooters were aged between 18-22 (x= 19.4, SD= 1.36). The elite netball shooters have between 10-14 years of playing experience (x= 11.7, SD= 1.36), and the non-elite netball shooters have between 7-13 years of playing experience (x= 9.5, SD= 2.12).
3.3 Interviews

In order to standardize the interview process, the interviews were conducted by the same person (Gould et al., 1993) to ensure that the same procedure was utilised throughout (Thomas et al., 2005). An interview guide was used to assess the use of imagery by netball shooters (see Appendix A). Previous research has helped in the development of the interview guide used (Hall et al., 1990; White and Hardy, 1998). The interview guide consisted of sections that explored background information, imagery instruction and training, when imagery is used, types of imagery, uses of imagery and imagery outcome. The interview guide ensured that all subjects were asked similar questions in similar terminology. Throughout the interview, participants were asked general probes to ensure the relevance of the answer. Specific probes were also used to allow the participants to elaborate on their answers and to increase the richness of the data being obtained (Patton, 1990). All probes were standardised to control for interviewer bias and encourage participants to respond with similar detail, therefore increasing validity.

The following definitions were read aloud and a copy given to the individual for use throughout the interview to ensure participants had a clear understanding of imagery. From the interviewer’s perspective, providing the participants with the definitions helped enhance credibility and the quality of the answers given.

*Imagery is a procedure for mentally representing things that are not physically present.*

(Morris et al., 2005, p. 16)

*The reproduction in the mind of all relevant sensory information which contributes to the successful execution of a skill, or the correct behaviour for a specific situation.*

(Bull et al., 1996, p. 67)
Semi-structured interviews were conducted, which have the advantage of reducing interviewer effects and bias, where respondents answer the same questions, increasing the comparability of responses (Patton, 1990). According to Lincoln and Guba (1985) a semi-structured interview is a conversation with a purpose. This ensured that the interviewer had a clear list of the issues to be addressed and the questions to be answered. All interviewees were asked the same basic open ended questions in the same order, putting more emphasis on the interviewee elaborating points of interest (Patton, 1990). In the present study, it was decided that a closed, fixed response interview would not be appropriate due to the fact that the participants must fit their experiences and feelings into the researcher’s categories and therefore cannot speak freely and widely on the issue raised by the researcher (Patton, 1990).

### 3.4 Procedure

To assess the playing standard of the participants and whether they used imagery, a background questionnaire was emailed to sixteen shooters who were members of UWIC Netball Club (see Appendix B). Three non-elite and three elite shooters were then chosen for the interview depending on whether they fitted the predetermined criterion.

As the purpose of the investigation is to learn, in as much depth and detail as possible about the use of imagery by non-elite and elite netball shooters, it was essential that the participants spoke using their own terms and in their own natural setting (Scanlan et al., 1989). The interviews took place at a location of the participants’ choice to encourage the interviewee to feel relaxed and able to speak freely.

All athletes participated in live interviews, which lasted approximately thirty minutes. Before the interview began, the purpose of the study and the types of questions that they would be asked were explained. Complete confidentiality regarding the participant’s responses was also stressed and was ensured by replacing the name of each participant during transcription to a number. All players involved gave their informed consent to participate in the study and gave the right for their data to be used and analysed in this study (see Appendix C). Participants were asked the same series of open ended questions, which were outlined in the interview guide. Interviews were
recorded using a Dictaphone and were later transcribed verbatim, to increase the accuracy of data analysis.

3.5 Pilot Study

Before interviewing, two pilot studies were conducted as it was essential for the interviewer to be prepared as they are the instrument for collecting and analysing data. A pilot study can reveal any deficiencies in the interview guide and to test certain questions and establish effective communication patterns. As a result, the pilot study was used to prepare the researcher to conduct a more effective interview and to extract as much in depth data as possible (Thomas et al., 2005).

Prior to beginning the main research, two netball shooters from the university netball team were interviewed using the pilot study. This provided the researcher with an opportunity to test the effectiveness of the interview guide and to gain confidence to conduct further interviews. During the pilot study, some problems were identified. Some of the questions needed to be re-worded as they were too leading or removed from the interview guide as information on that topic had already been given. More probes and explanations were required to help the participant with the understanding of the questions being asked. Other flaws included having the Dictaphone on the incorrect volume and conducting the interview in a place with a considerable amount of external noise. This enabled the researcher to learn to operate the Dictaphone correctly, refine their interview technique and build confidence in this area.

3.6 Data Analysis

For conclusions to be drawn from the study, an effective method of data analysis had to be conducted. The main analysis used was an inductive content analysis theme-building procedure to organise the raw data into ‘interpretable and meaningful themes and categories’ (Scanlan et al., 1989, p. 68). Inductive methods of analysis require the researcher to make sense of the situation without imposing existing expectations on the study (Patton, 1990). The analysis involved a series of steps, resulting in five main data themes being collected and displayed as tables:
Within-case and cross-case analysis methods were conducted on the data. The data analysis began with within-case analysis, which involved recognising the patterns or themes within the data, known as ‘pattern coding’ (Miles and Huberman, 1984). Patton (1990) suggested that within-case analysis means ‘writing a case study for each person interviewed or each unit studied’ (p. 376). This data was then placed into a matrix for each section (see Appendix E), which required the researcher to make a full analysis and organising the information coherently (Miles and Huberman, 1984). This data was then cross-case analysed, which involved the grouping together of common issues to general themes from all individuals (Miles and Huberman, 1984). This was based on each participant’s most relevant quote referring to the theme, which was collected by the use of memo notes and ensured that each participant’s data was available for direct comparison so conclusions could be made. Data was then displayed in a table under the five main themes previously highlighted, where statements and quotes from participants will be grouped together.

3.7 Reliability and Validity

Hardy et al. (1996, p. 261) have modified a model from Lincoln and Guba (1985) and suggested that the ‘trustworthiness’ of qualitative research relies on four criteria:

- Credibility
- Transferability
- Dependability
- Conceivability
3.7.1 *Credibility/Internal Validity*

Lincoln and Guba (1985, p. 290) defined internal validity as ‘the extent to which variations in an outcome (dependent) variable can be attributed to controlled variation in an independent variable’. To enhance internal validity within the study, there was prolonged engagement and persistent observation of the participant’s mannerisms and tone of voice, which was summarised at the end of the interview guide or written by certain questions (Hardy et al., 1996). In attempt to achieve further credibility, participants were given a definition of imagery to ensure that they fully understood what the interview was about along with debriefing the participants on the purpose of the study.

3.7.2 *Transferability/External Validity*

External validity has been defined by Lincoln and Guba (1985, p. 291) as ‘the approximate validity with which we infer that the presumed causal relationship can be generalised to and across alternate measures of the cause and effect and across different types of persons, settings and times’. The external validity was enhanced by providing ‘thick description’ which was provided by detailed quotes from the netball shooters regarding their imagery use. In addition, this thick description provided a database for the reader with which to assess the transferability of the findings to other contexts (Hardy et al., 1996).

3.7.3 *Dependability/Reliability*

According to Miles and Huberman (1984), reliability refers to whether the process of the study is consistent, reasonably stable over time and across methods. It was important in the case of the present study that each participant understood the questions in the same way and that answers can be coded without the possibility of uncertainty (Silverman, 1993). This was achieved by the use of a pilot study, which allowed the interviewer to practice and gain confidence in encouraging participants to ask, if unsure, about what the question entailed (Silverman, 1993) and make adjustments to any of the questions in the interview guide.
3.7.4 Conceivability/ Objectivity

Conceivability asks the question of whether the conclusions drawn depend on the subjects and conditions of the inquiry rather than on the inquirer (Lincoln and Guba, 1985). In order to achieve conceivability, the data was recorded using a Dictaphone, where all data would be verbatim and not influenced by the researchers’ subjectivity.
5.0 CONCLUSION

All of the netball players reported using imagery but the extent and purpose of use varied between individuals. With respect to imagery training and instruction, three participants stated that they had been taught to use imagery, either through the Welsh National Squad or from regional and county coaches. However, none of the athletes reported having regular imagery sessions. On average very little time was spent on training the skill, with the elite participants suggesting that more time would be beneficial since expressing their importance of imagery to their preparation for competition (White and Hardy, 1998).

With regards to when imagery was used, the elite participants reported using imagery before competition, identifying imagery as a performance enhancing technique (Munroe et al., 2000). The non-elite participants reported using imagery during and after a match and training to review any strengths and weaknesses (Bull et al., 1996). Imagery was used to increase confidence, improve concentration, control or reduce anxiety and stress, to improve performance and to increase motivation. The elite shooters reported gaining more beneficial effects on these psychological aspects compared to the non-elite shooters, suggesting that they were possibly more accomplished at using imagery.

All athletes believed their images to be vivid, although after further investigation, the clarity and reality of the image varied between individuals. All images were seen clearly on the majority of occasions and all stated that their images seemed real. None of the participants incorporated all of the senses into their image but this did not appear to have a detrimental effect. Three participants reported being able to control their images, therefore, these results would suggest that participants found it easier to see a clear image than to control it. As a result, imagery ability varied between the elite and non-elite sample.
All of the elite shooters reported using kinesthetic imagery and being able to feel the action of shooting more often than the non-elite shooters (Barr and Hall, 1992). Regarding imagery perspective, the elite participants used a combination of an internal and external perspective, whereas the non-elite participants used one or the other.

The elite shooters reported using imagery to imagine game plans and strategies and when practicing a new skill. This confirms that elite athletes tend to use both the motivational and cognitive functions of imagery to a greater extent than non-elite athletes (Salmon et al., 1994).

The elite participants all recalled a positive imagery outcome and reported having the ability to change a negative image into a positive one, mainly to increase confidence (Moritz et al., 1996). Four of the participants imagined themselves winning, whereas the other two felt that their own performance was more pertinent.

However, responsibility does not lie solely with the athlete. It was evident that the athletes did not understand the beneficial effects of imagery despite expressing its importance in enhancing their performance. It would therefore be advantageous for sport psychologists to provide education and support services to enable coaches to integrate imagery skills into an athletes training and competition program (White and Hardy, 1998).
5.1 Limitations

A number of limitations of the study were found.

- Imagery was not a strategy that had been taught or implemented into the participants training schedules regularly. This may have caused some confusion when attempting to explain their use of imagery, as the participants may have been unsure.
- Since many of the netball players were inexperienced imagery users, it is possible that they believed themselves to be using imagery when perhaps this was not the case.
- Elite and non-elite classification maybe too simplistic and some athletes may not fit into either category.
- Only three elite netball shooters and three non-elite netball shooters were interviewed which could constitute a small sample size.

5.2 Future Recommendations

In light of the limitations in the current research, recommendations for future research have been identified.

- Other playing positions within netball could be interviewed to explore any consistencies or differences in the extent, use and purpose of imagery.
- Possibility of using athletes from other open skill activities, allowing comparisons to be made within and across sports.
- Only females were used in the current study, therefore future research should aim to include males to consider whether there is a gender difference in imagery use.
- Athletes and coaches need to be educated on the effects of imagery so it can be implemented into an athletes training schedule.
CHAPTER VI
6.0 REFERENCES


APPENDICES
APPENDIX A
INTERVIEW GUIDE

Background Information

Initially, I would like to ask a few questions to provide some background information about your participation as an elite/non-elite netball shooter.

1) What is your first choice playing position?
2) How long have you been playing this position for?
3) How often do you train each week?
4) How many matches do you play each week?
5) What is the highest level you have played at?
6) When did you play at this level?
7) Do you currently play at this level?

The next stage of the interview concentrates on your use of imagery as part of your mental preparation for training and competition. To help you answer the following questions I will define the term imagery so we have a common understanding for use throughout the interview.

Imagery is

A procedure for mentally representing things that are not physically present. (Morris et al., 2005; p.16).

The reproduction in the mind of all relevant sensory information which contributes to the successful execution of a skill, or the correct behaviour for a specific situation. 
Bull et al., 1996; p.67)

Are you happy with these definitions and do you have any questions regarding the definitions or any other general questions?
Imagery Instruction & Training

First of all I would like to gain an insight into how you learned to image or if you have ever used imagery.

1) Do you use imagery?

2) How long do you think you have been using imagery?
   Do you use imagery as part of your mental preparation for netball?
   
   *Probe: Why do you use it, what effect does this have?*

   Have you always used imagery?
   How did you develop your use of imagery?
   Have you had any mental skills training or support? If so, how much and how often have you had this training?
   Has anyone ever taught you to use imagery?
   If so, how did they do it?

3) Have you been taught or used any imagery exercises to help improve your imagery?
   If so, can you describe them to me?
   
   *Probe: In detail*

4) How much training time do you spend on imagery?
   Do you spend any time practicing outside of training and competition?

5) Do you think that imagery forms an important part of your mental preparation for competition?
   Why do you think this is?
   
   *Probe: Anymore positive or negative effects?*
   Do you think this is an appropriate amount of time?
When do you use imagery?

1) When do you use imagery? For example, before, during or after a game/training?
   
   Probe: Specific times
   Do you use imagery prior to shooting?
   What is the purpose of imagery in these particular situations?
   
   Probe: Do you use imagery to make a successful shot?

   What effect does imagery have on your:
   - Performance?
   - Concentration?
   - Self confidence?
   - Ability to deal with stress/anxiety?
   - Ability to relax?
   - Motivation?
   
   Probe: How does it?
   
   Do you have positive or negative feelings as a result of imagery?

2) Tell me about the type of imagery you use in a game and how, if so, does it differ from the imagery that you use in practice?
   
   Probe: Can you give me some examples?

3) Do you ever use imagery away from the netball court or for any other skill apart from shooting?
   If so, what do you use imagery for?
   
   Probe: What did you see, feel, and smell?
   Is the imagery use different to that you would use on the court?
   What effect does imagery have on you and how does it make you feel?
   
   Probe: Positive or negative feelings?

4) Do you use imagery for any other purpose? For example when you are injured, at intervals in a game or when you are out of season?
   What does imagery consist of in these circumstances?
What effect does imagery have on your

- Performance?
- Concentration?
- Self confidence?
- Ability to deal with stress/anxiety?
- Ability to relax?
- Motivation?

Types of Imagery

_I am now going to ask you to describe to me in as much detail as possible the imagery that you use whilst playing and shooting. This section will be broken up into visualisation i.e. what you see; kinaesthetic i.e. what you feel; olfactory i.e. what you smell and auditory i.e. what you hear._

Visualisation

1) Describe to me how you see the image?
   - Is the image clear or cloudy?
     
     _Probe: Why do you think this is?_  
   - Is the image like watching a video caption, through your own eyes or a mixture of the two?
   - Is the image of yourself or someone else?
   - Is the image in colour or black and white?
   - Can you consistently control the image of a particular skill, such as executing a shot?
   - Could you close your eyes and shoot at goal successfully?
   - Can you image the size, shape, texture of the ball?
   - Does the image seem real?
     
     _Probe: How?_
Kinaesthetic

1) Do you feel any body movements?
   
   Probe: If so, what body movements do you experience?
   
   When using imagery, what emotions do you feel before competition?

Olfactory

1) Are you able to smell anything when you are imaging?

Auditory

1) Can you hear any sounds or noises during the imagery process?

What effect do these types of imagery have on your
   - Performance in training and competition?
   - Concentration?
   - Self confidence?
   - Ability to deal with stress/anxiety?
   - Ability to relax?
   - Motivation?

   Probe: How?

Uses of Imagery

1) What purpose does imagery serve for you?

   Probe: Anything else?

   Do you image game plans or strategies?
   
   Do you execute these strategies correctly during imagery?
   
   Why? Why Not?

3) Do you make a deliberate effort to use imagery?

   If so, is there any structure to your use?
4) Do you use imagery when practicing a new skill or strategy?

**Imagery Outcome**

1) **Describe to me the outcome of your use of imagery?**
   - What happens when you shoot?
   - What effect does this have on you?
   - How often does this image occur?
   - Before competing do you image yourself winning a game?
   - What effect does this have on you?
   - Do you image yourself giving 100% effort during the game?
   - If your image has a negative outcome, what effect does this have on you?
     
     *Probe: Do you try and make it more positive?*

**Anything else?**

*Before we finish is there anything else important that you would like to discuss about imagery that you think might help me understand how imagery works for you?*

*Thank you very much for your time and help.*
APPENDIX B
Background Information Questionnaire

Name: ____________________________________________

Age: __________

How long have you been playing netball for?
__________________________ years

What is your first choice position?
__________________________

What is the highest level you have played at? (please circle as appropriate)

Recreational      County       Regional       International

How many years have you played at this level?
__________________________

What team do you currently play for at UWIC? (please circle as appropriate)

A    B    C    D

Do you imagine yourself playing netball before/after/during training/competition? (please circle as appropriate)

YES    NO

Have you had any formal imagery training? (please circle as appropriate)

YES    NO
If so, which imagery perspective did you use? *(please circle as appropriate)*

<table>
<thead>
<tr>
<th>Internal</th>
<th>External</th>
<th>Both</th>
</tr>
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<tbody>
<tr>
<td>(Watching from within)</td>
<td>(Watching from the Outside)</td>
<td></td>
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</tbody>
</table>

Thank you very much for completing the questionnaire.
APPENDIX C
Dear Subject,

I am a Level 3 undergraduate student in the School of Sport, PE, & Recreation, at the University of Wales Institute Cardiff. I am conducting a dissertation on the differences in imagery use between non-elite and elite netball shooters and wonder if you would be kind enough to help with my research.

The research aims to discover whether there is a difference in the amount of imagery used between non-elite and elite netball shooters assessing their imagery instruction & training, when imagery is used, types of imagery, uses of imagery and imagery outcome. As a subject, you will be asked to fill out a questionnaire and if chosen, take part in a standardized open ended interview, answering a number of prepared questions lasting no longer than thirty minutes. The research might prove beneficial as it will hopefully educate coaches towards implementing imagery into an athletes training programme due to the great enhancements that could result in performance. There are no risks involved in participation.

Participation is entirely voluntary. You are free to withdraw at any stage of the research process.

Confidentiality will be upheld as far as is humanly possible. Your name will not appear anywhere at any time, and the features cited are only those relevant to the research. During the research process, the data will be kept by the researcher only. Access will be restricted to the researcher and my possible dissertation supervisor. The final dissertation will be kept by my School and me. Access will be restricted and a tape of your interview will be submitted in a raw data box, accessible only to the teaching staff of my School.

If you are willing to participate, then please read the slip overleaf carefully, and sign.
If you have any queries, do not hesitate to contact me.

Thank you. I look forward to hearing from you.

Rebecca Morris

I have read and understood the request to be a participant in the above research. I understand the risks involved. I understand that participation is voluntary, and that withdrawal is possible at any time. I understand the measures that will be taken to uphold confidentiality. I agree to participate.
INTERVIEW GUIDE

A qualitative study to assess differences in imagery use between non-elite and elite netball shooters.

PARTICIPANT

3

AGE

18

DATE

4/2/2008

TIME BEGAN

12.00pm

TIME ENDED

12.25pm
Background Information

Initially, I would like to ask a few questions to provide some background information about your participation as an elite/non-elite netball shooter.

Ok

What is your first choice playing position?
Goal shooter or goal attack, either shooting position.

How long have you been playing this position for?
Since I was seven, so about eleven, twelve years, something like that.

How often do you train each week?
Erm, about three times a week. We have training once a week, then games twice a week, so three times in total.

Is that for UWIC?
Yes.

What is the highest level you have played at?
Erm, regional. I had Welsh trials but I didn’t actually make the selection, but you go to regional and talent centres and things like that.

When did you play at this level?
Erm, about two years ago.

Do you currently play at this level?
No.
The next stage of the interview concentrates on your use of imagery as part of your mental preparation for training and competition. To help you answer the following questions I will define the term imagery so we have a common understanding for use throughout the interview.

Imagery is

*A procedure for mentally representing things that are not physically present.*

(Morris et al., 2005; p.16).

*The reproduction in the mind of all relevant sensory information which contributes to the successful execution of a skill, or the correct behaviour for a specific situation.*

(Bull et al., 1996; p.67)

Are you happy with these definitions and do you have any questions regarding the definitions or any other general questions?

*Yeah that’s all fine.*

**Imagery Instruction & Training**

First of all I would like to gain an insight into how you learned to image or if you have ever used imagery.

Do you use imagery?

*Erm, I am not sure if I actually use it, but sometimes in my head I do go through what I am going to do. I wouldn’t say I go through it all the time, just every now and then.*

How long do you think you have been using imagery?

*Erm, not really sure, but suppose in the last few years as I have got older, I think I have thought about it more but that’s it really.*
Do you use imagery as part of your mental preparation for netball?

_Erm, yes sometimes, to help me because I am not a very confident shooter and if I think about it and go through the technique in my head, sometimes it helps me to like stop, breathe and think about my action and hopefully it will help me then._

So what effect does this have on you then?

_Erm, obviously it makes me a little more confident and helps me to relax, because if my shots don’t go in then my head drops, if I think in my head this is what I need to do then my obviously my confidence will get better and as a result I will perform better._

Have you always used imagery?

_Erm, no not really, like I said its only really been the last few years, like probably the later years in school and since I have come to uni. Obviously before I didn’t really know what it was to begin with, but now I have more knowledge of it, especially in the last few years._

How did you develop your use of imagery?

_Not really sure._

Have you had any mental skills training or support?

_No._

How much training time do u spend on imagery?

_Not really sure, I think in training and when I am playing I ask questions, hopefully these will help with my technique and I really focus on my technique when I am training and playing, so that’s it really._

Do you spend any time practicing outside of training and competition?

_Erm, yeah often I will just go up to NIAC or somewhere to practice my shooting and go over my technique. I think talking about the game and stuff like talking to people often helps to improve yourself and things like that._
Do you think that imagery forms an important part of your mental preparation for competition?

Yeah I think so, because it can help with your confidence and develop you as a player.

Do you think this is an appropriate amount of time?

I think I would probably like to do a little bit more on it, like I have a little knowledge now but I would like to develop it further hopefully to improve my game again.

**When do you use imagery?**

When do you use imagery? For example, before, during or after a game/training?

* I probably would say before and during the most. Before I obviously think about it, but when I am playing if something goes wrong then I have got to really think about it and sort out what is going on and maybe after as well, because if people give me feedback about my technique then I think right, I will think about it now before the next game.

So, is that mainly in a game or is in training as well?

* I would say more in the game, but now and again in training.

Any specific time, how long before the game starts?

* Erm, probably a little bit before just to help with my confidence and then maybe when I am playing, because if I feel like my shot has gone wrong then I have got to think to myself, I am doing this, I am doing that, so mainly during, or like say when we come off at half time and when we have a talk, when I am come back on, I am thinking about it then.

Do you use imagery prior to shooting?

* Yes, I would say so, sometimes I probably do it and I don’t even realise that I am doing it, I just take a moment and think to myself, right I need to breathe, I need to bend and I need to push.
What is the purpose of imagery in this particular situation?

* I think it’s just to help you really be a bit more fluent and give yourself a bit of confidence really to know that you have got the technique and that you are doing it correctly.*

So when you use imagery, do you usually make a successful shot?

*Yes.*

What effect does imagery have on your;

Performance?

* I would say that it helps with my confidence really, like I said I haven’t got much confidence so when I have got the confidence then obviously it helps to reinforce the technique and make me feel a bit better, like I can go in that circle, put the shot up and that I know I am doing what I should be doing.*

Ability to deal with stress and anxiety?

*Erm, yeah I suppose, sometimes I do get a bit stressed out if something isn’t going my way or my shots aren’t going in then I get a bit stressed, but I think if I take a deep breath and think about what I have got to do then hopefully it should go right from there.*

Are you able to relax when using imagery?

*Yeah, sometimes, if you think about it and take a deep breath, and then think about it and then you can get on with it, so yeah I think so.*

Does imagery effect your motivation?

*Yeah at times, because if you think about it, you know exactly what you got to do and then you’re able to pick yourself back up then. I imagine challenging situations that I have faced, such as constantly missing goals, and then how I was able to concentrate and get myself back on form whilst on court.*
Tell me about the type of imagery you use in a game and how, if so, does it differ from the imagery that you use in practice?

Erm, more in a game, I think because you know exactly who you’re playing against you can visualize more and the situation that you’re in. In practice you just go over your technique, in a game you actually there, because your in a situation your able to visualize it better, if that makes any sense.

Yes it does.

Do you ever use imagery away from the netball court or for any other skill apart from shooting?
Erm, I wouldn’t say so, it’s just mainly my shooting.

Do you use imagery for any other purpose? For example when you are injured, at intervals in a game or when you are out of season?
No I haven’t been injured or anything like that, so haven’t used imagery then.

Types of Imagery

I am now going to ask you to describe to me in as much detail as possible the imagery that you use whilst playing and shooting. This section will be broken up into visualisation i.e. what you see; kinaesthetic i.e. what you feel; olfactory i.e. what you smell and auditory i.e. what you hear.

Visualisation

Describe to me how you see the image?

Is the image clear or cloudy?
I would probably say clear.

Why do you think it is clear?
Erm, because I can picture myself doing the exact technique that I should be doing, I can see myself holding the ball, how it feels and where I am and the surroundings, so that type of thing.
Is the image like watching a video caption, through your own eyes or a mixture of the two?
*A bit of both really.*

So could you elaborate a little more on that?
*Erm, I can see myself but then obviously I can think about what other people tell me about my technique, so its me there, but then I can hear other people in my head saying that you need to do this you need to do that, so it’s a bit of both really, with other people giving me feedback and information and stuff like that.*

Is the image of yourself or someone else?
*Normally myself, but if a coach has shown me something then sometimes I think, right I can picture that coach doing it and then myself doing it, if that makes sense.*

Is the image in colour or black and white?
*Erm, a bit of both, it depends at the time, it can be in black and white or in colour depending on the situation, like if I remember I was somewhere, I know its sounds silly, but the team wearing certain colours when I was taking that particular shot so that kind of thing really.*

Can you consistently control the image of a particular skill, such as executing a shot?
*Erm, I am not sure really. I suppose you can have an image, I can see myself shooting, but then there can be parts of it that I am missing, which can effect the fluency, so I know there are bits missing and it just doesn’t feel right.*

Could you close your eyes and shoot at goal successfully?
*Now and again, if I know my technique is on and if I can feel when the ball is released it feels fine then I know I can, but sometimes if I am shooting and I am not that certain then I know, I know as soon as I release the ball, I know whether its successful or not because of the feel of the shot.*

Can you image the size, shape, texture of the ball?
*Yeah.*
Does the image seem real?
Yeah, most of the time.

So how does the image seem real?
Erm, I think because I am so used to doing it, because I have been shooting for so long, I know the feel, the movements how it exactly feels and stuff.

Kinaesthetic

Do you feel any body movements?
Yeah, I know if I haven’t got enough bend in my knees or elbow whether the shot is successful, or where it takes off on my hand and just things like that.

When using imagery, what emotions do you feel before competition?
Erm, normally quite calm, I am getting better now as I get older, normally feel nervous and stuff, but if I actually stop myself, think about it, take a deep breath, the first few shots I might be a bit nervous, but when I get into a rhythm and because I have imaged my shots then I am usually fine from there.

Olfactory

Are you able to smell anything when you are imaging?
No, not really.

Auditory

Can you hear any sounds or noises during the imagery process?
Erm, I try to block things out so I focus on my imagery, but now and then I can hear people shouting, go on or remember to bend or remember to push, just things like that.
So considering the things that you have just said to me, what effect do these types of imagery have on your;

Performance?
Erm, I think encouragement is quite a good one, especially when people are shouting and encouraging you, then if I know like I said, the ball, I know when I have released it whether it has gone in or not, I think they do play a big part in improving my performance.

How about your concentration?
Erm, I say I am normally quite concentrated, but I find I can be easily distracted, for example when you’re playing if someone is waving or if there is too much noise or if I feel something should have been blown up and then I can get quite snappy about it, but apart from that I am usually okay.

How about your self confidence?
Erm, I would say that is one of my biggest issues with my Netball game, I am getting better, but I am not that confident so I need a lot of motivation and feedback to know that I am doing well. Once I get into a rhythm with my shooting and I feel right then I am normally fine, but it takes a while for me to get confident when I play.

Ability to deal with stress/anxiety?
Erm, I would say that I am getting better again, but like if an umpires decision doesn’t go my way then my head can drop really easily and my game can drop, so sometimes I need that bit of encouragement to get back to it.

Ability to relax?
Erm, I think when I am in my game and its going fine then I am relaxed, before the game I am quite anxious and quite nervous, but it depends what kind of game it is, if its just like training and stuff, but if I know it is a big game then I am obviously more nervous.
Does imagery effect your motivation?

_Erm, yeah I think it helps if other people motivate you, I am more of a person that needs to be constantly motivated._

**Uses of Imagery**

What purpose does imagery serve for you?

_Erm, I think it does help me to relax and to be a bit more confident, if I see what I am doing then know what I am doing it makes it a lot better when I am playing._

Do you image game plans or strategies?

_Erm, now and again, if I know I am playing first in a game then, for example, if the defender is tall then I will say no long balls, I think it depends really on who you’re playing, if it’s someone I know I just go on there thinking, right I just have to give it my all._

Do you execute these strategies correctly during the game?

_Erm, not really sure to be honest, I mean I think I do, but I need to have more training on imagery to really know if I am or not._

Do you make a deliberate effort to use imagery?

_Erm, I am tending to more now, but I would obviously like to learn more about it, hopefully it can help with my game._

If so, is there any structure to your use?

_Erm, I am not sure really._

For example, would you say that you followed the same routine?

_Yeah I suppose, because every time I shoot, I have got this little thing that I have got to breathe and stuff and I have got to think before I shoot and stuff. If I take my time then it normally goes in, but if it’s rushed then it doesn’t normally go in, so it’s that kind of pattern that works for me._
Do you use imagery when practicing a new skill or strategy?

_**Erm, yeah now and again, but I would say it’s more for my shooting rather than anything else.**_

So if you did use it when imagining a new skill, would you imagine it as a whole or in separate parts?

_**Normally I would break it down into parts, and then imagine it as a whole at the end.**_

**Imagery Outcome**

Describe to me the outcome of your use of imagery?

What happens when you shoot?

_**Erm, normally it’s more successful because I actually think about it, but sometimes it doesn’t work for me, because if I think too much about my shot then it doesn’t normally work, so I just take my time, take a deep breath, think about what I am doing, then normally it’s successful.**_

What effect does this have?

_**Obviously if my goals are going in then I am more confident, so it just helps with my confidence, I think it helps with my overall game then and makes me perform better.**_

How often does this image occur?

_**Erm, I think the first few shots, but then if a shot doesn’t go in then that’s when it kicks in because I think this is what I need to do, but then I think once I get into a rhythm I don’t usually use it that much because I know that I have already got it.**_

Before competing do you image yourself winning a game?

_**Yeah I would hope that I would win the game, but I just want to go out there and give a good performance to know that I have come off the court thinking, right I have done everything that I can.**_
So what effect does this have on you?

_Erm, like I said I think it helps with my confidence and helps to improve my game and I think it can help the team as well, because your performing well then you can try and give it out to other people so you all perform well together and encourage each other._

Do you image yourself giving 100% effort during the game?

_Yeah._

If your image has a negative outcome, what effect does this have on you?

_Erm, I suppose it makes your game drop, but the main reason why I use imagery is because if something negative has happened I use the image more positively so I can make it more positive next time._

Before we finish is there anything else important that you would like to discuss about imagery that you think might help me understand how imagery works for you?

_No, think you have just about covered everything._

Thank you very much for your time and help.