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Module: Self & Performance A

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Deadline: Monday 15th May 2006

Title:

A logbook with evaluation. The logbook should detail the information in the taught sessions and your responses to the sessions. The logbook should then detail the ways in which you have applied the content of the sessions to your dance practice including classes and performances over the semester and evaluate the results

This logbook has been organised into the following sections:

Information on the Taught Sessions

"We Are Human Beings – Not Doings!"

(Eric Walker, 13/01/05)

- Touch and awareness can wake up the body without warming up.

- Imagine shaking out the dust from the lungs during deep inhalation.

- Feeling around the shoulder blades – awareness of the connections around the shoulder girdle:
    - Left scapula – think of Africa
    - Right scapula – think of South America
    - Coracoid process – think of a camels head
    - Massaging between bones and into tissues helped to open up the shoulders, especially on the top of my shoulder moving in towards my neck.

- Change of perspectives – swinging arms – think arms are stationary but the body is swinging instead.

- Tapping the body – awakening the nervous system, compare each side of the body before and after tapping/patting, one side feels warmer.

- Thinking loose, spongy, fleshy muscles.

- Positive thinking – its up to us to make it happen. Use the energy in fear and make it positive. Fear is only focused on the future outcome, not the now.

- Body wants to work! It's ready to learn! The knowledge is already there within!

- "Imagery is a language to tell your body what to do". If you don't like the given image create your own. It's a good thing if your image has a meaning to you for example an emotional connection. Always imagine something that can move and isn't stationary.

- Think of the pelvis as a twisted plate (the two separate sides, twisted in the middle between ilium and ishium). To pirouette, trace a twisted line with the palm of the hand (flat to inwardly rotated) moving downwards, following the shape of the pelvis (the twist) whilst turning (to pirouette en dehor reverse it).

- Imagine the tailbone dropping down like a long dinosaur tail.

- Imagine a piece of string tied to coccyx/sacrum area – think of being pulled backwards and forwards. Reverse it by imagining the string being tied to the pubis bone and repeat the 'pulling' movements. Decide which side felt more natural/easier and conclude that the more awkward side should be practiced more to help balance out the muscle and sensory channels within the body.

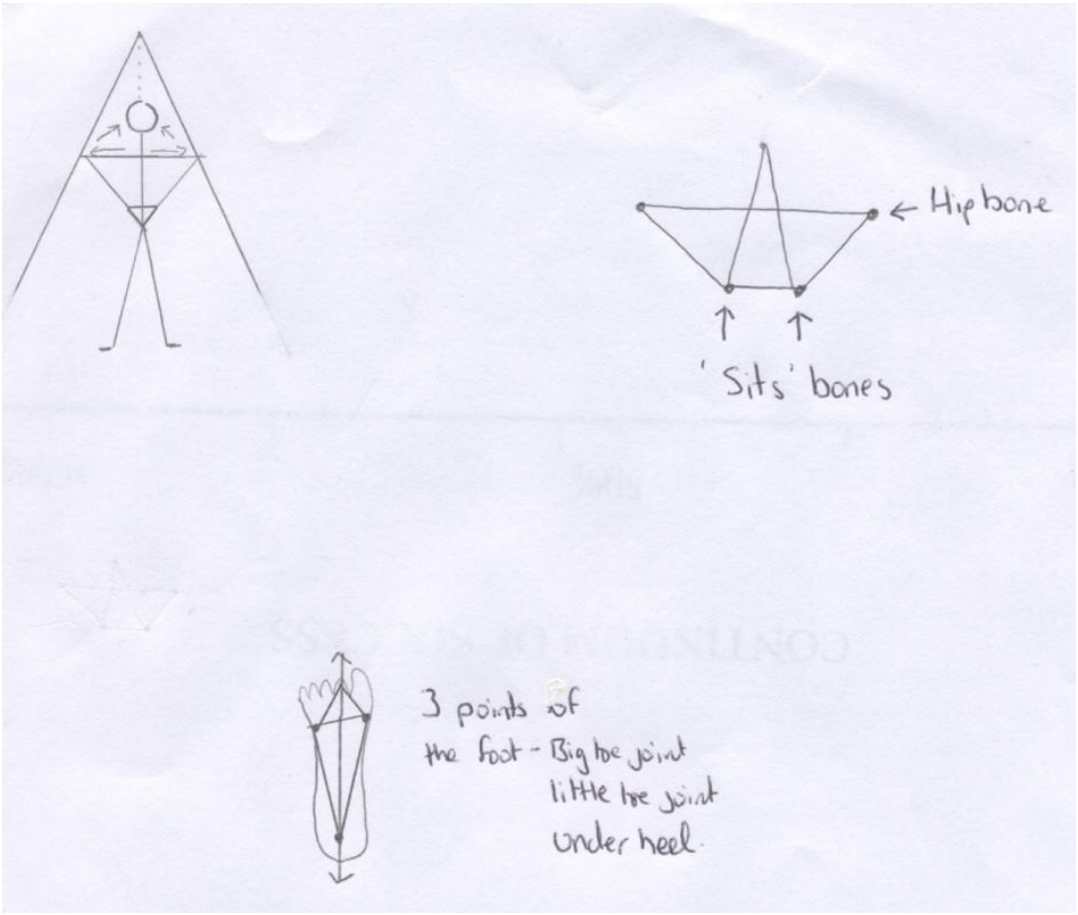
- During a plié the bones of the pelvis move. Aid this by imagining them opening and closing like a fan.

- During plié the bones twist slightly. In parallel it was possible to see that pelvis bones rotate in, the femurs rotate out and the tibia inwardly rotates. These movements are only slight.

"The Dancing Body"

(Anne Went, 16/01/06)

- Body is made up of triangles. Very strong, support structure.



- Stomach beats/pulses- centre of emotion.

- Must have freedom to move through the joints.

- Need to hold the centre when dancing.

- Need to think of the leg as one unit.

- Concentrate on the hip, knee and ankle alignment.

- Think adductor and abductor and not quads and hamstrings when moving the legs.

- Need to co-ordinate the legs and arms.

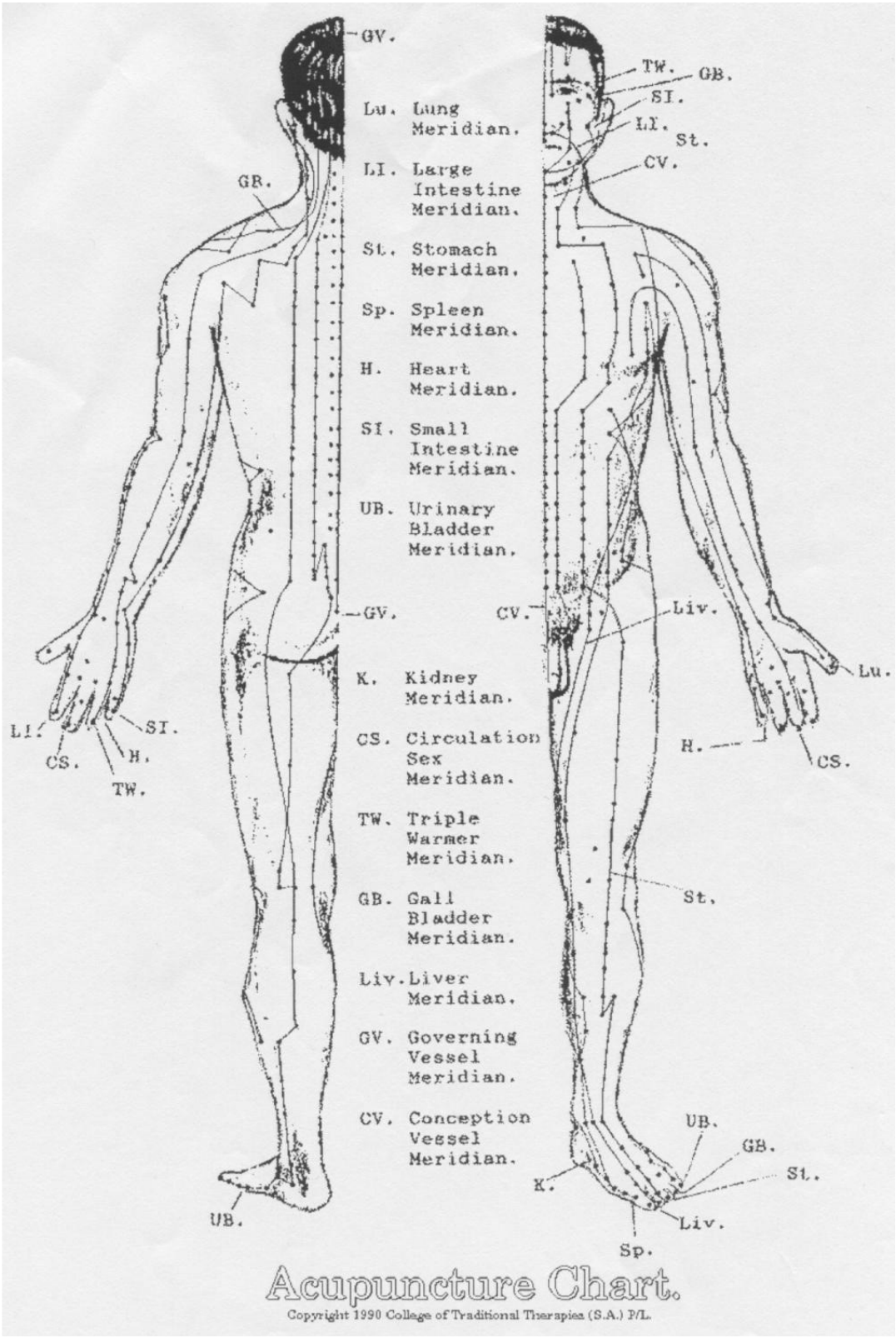
- Meridian lines- energy channelled through the body (see chart on page 7). Used in acupressure (or shiatsu), massage and acupuncture.

- When dancing think of the meridian lines flowing through your body. For example, when arms are out in second, think of the energy coming out of the fingertips and going through the back.

- Each meridian line equates to different parts of the body.

- Feel these energy lines in arabesque; the lines should never cross (i.e., front arm and back leg needs their own directional pathway, not crossing over).

- If the lines are crossed then the energy will become blocked.


GV.
Lu. Lung Meridian.
LI. Large Intestine Meridian.
St. Stomach Meridian.
Sp. Spleen Meridian.
H. Heart Meridian.
SI. Small Intestine Meridian.
UB. Urinary Bladder Meridian.
GV.
K. Kidney Meridian.
CS. Circulation Sex Meridian.
TW. Triple Warmer Meridian.
GB. Gall Bladder Meridian.
Liv. Liver Meridian.
GV. Governing Vessel Meridian.
CV. Conception Vessel Meridian.
GB.
UB.
LI.
SI.
CS.
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CS.
St.
UB.
GB.
St.
K.
Liv.
Sp.
Acupuncture Chart.
Copyright 1990 College of Traditional Therapies (S.A.) P/L.

"The Body – A Communication Network"

(Gary Carter, 16/01/06)

- 'It is the fear of fear that stops us from moving on'.
- Pelvis – 3 pieces (2 halves and sacrum).
- Skull – think of it as an extra bit of vertebra.

- Brain – pulses 12 times a minute therefore the joints in the skull need to be able to move slightly.

- The bones of the skull – need to imagine them as if they are floating in a sea of membrane (look up cranial sacral therapy).

- The hip joint is no longer being put through its full range of motion- before we used to crawl and climb up trees and rock faces, now all we (everyday people) do is just sit and stand (eastern countries will squat).

- Body gets used to certain positions i.e. crossed legs and arms. If you cross the other arm or leg over it feels weird.

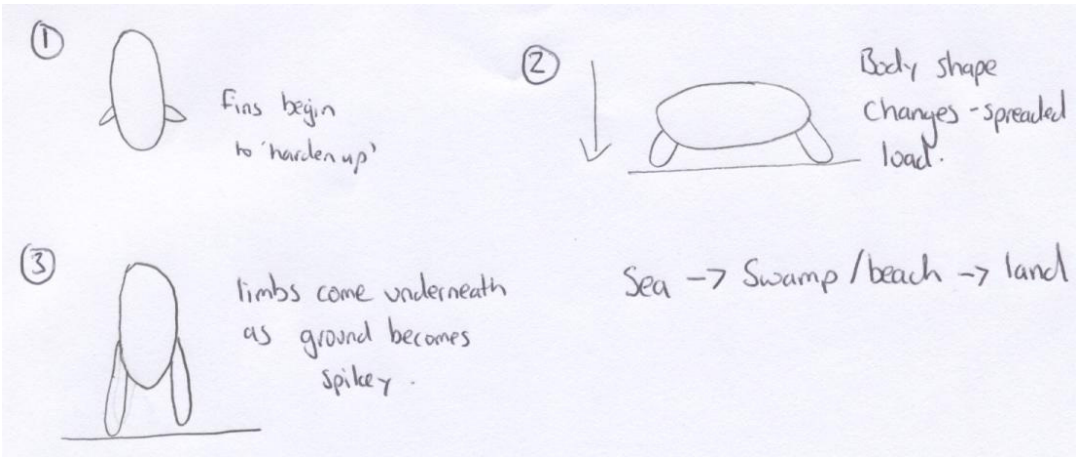
- Standing up on two feet is uniquely human.

- Throughout evolution the bones are constantly remodelling themselves.

- Being as they are living tissues and not dead, solid sticks, they are being pulled and are spreading out due to gravity and the continual pull off the attached muscles.
- Need to create balance between the muscle groups (muscles only contract).
- Note the 1-2-3-4-5 pattern within the bones of the limbs:

o Humerus o Ulna & radius o Scaphoid, lunate & triquetrum o Trapezium, trapezoid, capitate & hamate o 5x metacarpals	Arm
o Femur o Tibia & fibula o Talus, calcaneus & cuboid o Navicular & 3x cuneiforms o 5x metatarsals	Leg

Evolution:



Connective Tissue:

- Organ of shape- creates the shape of all the systems of the body.

- Twist your clothes around the body, feel how the body wants to follow them.

- Demonstrates how fascia works by use of corn flour, plastic bowl, water and a spoon. When water and corn flour are mixed together in a bowl it is hard to force the spoon through it to the bottom of the container. Instead you have to slowly let the spoon sink through it.

- Used this to create an image of our bones sinking through our tissues down to the floor when laying down on our backs, sides and front.

- Need to warm up the fascia, wants to be gloopy, slippy and slidy.

- Muscle fibres are very elastic; it's the fascia that surrounds each of the fibres, bundles, and whole muscles that needs to stretch.

- Used a toy to demonstrate muscle fibre surrounded by fascia. The rubbery plastic covering represented the fascia and the liquid contained inside was the muscle fibre.

- **Myofascia- one muscle – pulled in 600 directions.**

- Bones held apart by fascia.

- Tensegrity Structure – tension with integrity.

Bones:

- Need to focus on rib cage, think of it as the 'rib basket'. When slumped over due to poor posture our thoracic spine becomes our 'sitting bone' and will compress the chest area containing the heart and lungs amongst other important organs.

- Bone is slow moving fluid.

The Spine

- Think of your spine as a string of cotton reels, imagine a balloon being inflated along side it. The curving effect as the cotton is spreading is similar to what happens to the spine when breathing.

- Inter-vertabral discs – the fluid movement contained within is termed HYDROSTATIC (continually pushes out, like the rubber bands inside a golf ball).

Important Notes:

- Like the action of a sponge (squeeze it and it will push back to former shape) we need to allow the joints of the body enough space to 'push out'.

- Touching – develops an awareness, stimulates receptors under the skins surface, the benefits have been forgotten in today's society.

"Music Workshop"

(Yeval and Eleanor Alberger, 17/01/06)

History

- Music – church music – Gregorian chant
- Bach – Louis 14th (17th century)
    - Music driving the dance
    - Early classical ballet
- Classical – Bach, Beethoven, Brahms
- Romantic – Chopin

Modern

- Graham, Humphrey
- Dance becomes diverse
- Composers used to conform to traditions (music of that genre), now they can write and play what they want.

Choreography

- Music first, then choreography, either – copies the musical phases or juxtapose.
- Set dance to a live composer
- No music
- Devised separately and then put together during first performance (Cunningham/Cage).

Uses

- To conjure up images – feed the audience with what you want to say
- Music to emphasise the movements and drama
- Big difference between using a single instrument and a full orchestra

- Different instruments and melodies for different characters (Peter and the Wolf)

Imagery through music

1. **Lullaby-** Rocking a baby to sleep
   Bach, a prelude
   Floaty, romantic duet

2. **Haunted House-** Dark gothic
   Tim Burton-esque
   Biazzolla
   Modern Tango

3. **Ballet Class-** Outside a studio, listening in
   Chopin, 19th century
   Romantic period
   Big dramatic pauses
   Single piano

4. **Scary Cats! -** Mechanical
   Techno-goth style
   Hushmail
   Frustration during travelling
   Lots of entrances and exits

5. **Graham-** Travelling sequence
   Rushing movements
   Minimalist
   Influenced by African drumming
   'Road Movies'

6. **Crashing-** Roaring ocean
   Film score-ish
   Musical theatre ish
   Prominent sax
   Harrison Bertwhistle

7. **Duke Ellington-** Baritone sax
   Fast swing
   Big band sound

Class Task

In groups of four we choreographed a short sequence to the last piece of music. We pretended in our group that we were loonies in an asylum. It worked really well. We were asked to perform them one by one to the music. We were then asked to perform it again to a pre-selected track or improvised musical accompaniment.

"Developing Self-Confidence for Dance - Theory and Strategies"

(Tim Holder, 18/01/06)

1. Explain self-efficacy.
2. Describe a range of factors that can influence self-confidence.
3. Identify and utilise strategies for the development of self-confidence within dance.
4. Reflect on current preparatory strategies and how you evaluate your success.

- Role of psychology in physical activity:

    - Motivation to perform
    - Confidence to try new moves
    - Control over anxiety
    - Know the difference between sub and super elite
    - Thinking in a helpful way to perform
    - Coping with success and failure
    - Learning from your performance

Self-confidence - comes from your own personal belief that may have been influenced by your parents, society and peers. We need to stop searching for approval and stop relying on friends for self-confidence.

People have different levels of confidence in different situations – **Situation Specific** – This is the global level of self-confidence associated with overall performance expectancies. (Self-fulfilling prophecy)

Self-efficacy

- Levels of specificity for confidence
- Avoidance coping = List making
  Choose what you want to practice
- Self-handicapping behaviours i.e. choosing to decrease levels of effort
- Self-presentation – how do I look to others?

SUCCESS BREEDS THE EMOTIONAL CHANGE!!!

Vealey- Model of confidence 1988

Trait = usual
State = at one particular moment

1. Impact of trait confidence and competitive orientation on state confidence (measuring yourself against others, rather than your own particular standards).
2. Task orientation (master a particular task, majority of people train for the marathon just to finish it and not to win it!!!)

3. High self-confidence is likely with a high trait confidence and a performance orientation.

4. Low self-confidence is likely with a low trait confidence and outcome orientation (winning).

FOCUS ON WHAT YOU CAN CONTROL

Persistence – keep trying and trying again. Coaches should be a source of confidence, full of praise.

Attribution – the reasons you give for success/failure i.e. external factors (self-serving bias).

Awareness ratings – between the ages of 9 and 11 we are working out the difference between effort and ability.

<u>Bandura 1986</u>

- Technical analysis – Video etc
  Watched by a friend
- Verbal persuasion - 'you can do it' (short term)
- Eliminating the opposition (Nancy and Tonya – ice skaters)

- Practice and prep (you have done it well before)

- Strategy – goal setting

- Physiological state – Sick
  Butterflies
  Fight, flight or freeze (sickness, sweat, needing the loo and increased HR is the body's way of getting ready to move faster)

- Avoidance – unachievable goal

- Vicarious experience – Seeing other people succeed
  You see your friend do it so you feel as though you can do it.

Self-Efficacy Theory 1986

1. What are the sources of efficacy?
   - What are the effects of high efficacy?
   - Performance accomplishments – how do you measure this? Pre and Post performance?
   - Do our positive accomplishments stick in our minds as well as the negative ones?
2. Vicarious experience
   - What techniques do you use to observe others?
   - Are you pro-active in observing others?
3. Verbal persuasion
   - Can you 'talk' to yourself or do others persuade you about your ability?

Self-confidence

Using strategies to maintain confidence under pressure, 'I don't think I can achieve that but I can have ago at the one below'.

Goals: got to be:

S Specific
M Measurable
A Accept
R Realistic
T Time-phased
E Exciting
R Recorded

"Body Composition and Adipose Tissue Distribution in Female Professional Ballet Dancers with Low and Normal Bone Mineral Density"

(Dr Karl Cooke, 18/01/06)

- Original seminar presented at an IADMS conference in Stockholm in 2005
- Worked as part of the healthcare team at the Royal Ballet School.

- **Aims of the healthcare team:**
  - Prevent and treat injuries
  - Maintain and improve musculo-skeletal and psychological health
  - Educate the dancers on healthcare issues
  - Encourage self-reliance
  - Ensure that a current career does not result in problems later in life
  - Initiate/participate in research which will be of direct benefit to our dancers

- **To measure for investigation:**
  - Bone mineral density
  - Body composition
  - Bone geometry
  - Endocrine function
  - Metabolic status

- **Female Athlete Triad**
  - Osteoporosis - low bone mineral density
  - Amenorrhea – 0-3 menstrual cycles per year

- Disordered eating – anorexia, bulimia

- **Hypoestrogenemia** (hypothalamic), low levels of circulatory oestrogen
  - Risk factor for Coronary Artery Disease
  - Protective effects of oestrogen increasingly well documented
  - Protects against oxidative damage in cardiac and skeletal muscle

- **Main reason for morbidity in young dancers or athletes**
  - Increased risk of stress fractures
  - Soft tissue injuries
  - Osteoporosis

- **Main mechanisms**:
  - Disruption of LH (luthenising hormone) pulsatility which makes it difficult to measure
  - However, dietary records, BMI and body fat may not be sensitive enough
  - Highlighted by results when dancers are matched for height and weight.

- **Purpose:**
  - To compare the distribution of adipose tissue in two groups of female professional ballet dancers;
  - Low ultra distal radial bone mineral group
  - Age, weight and height matched controls

- **Results:**
  - Low BMD group had larger distribution of android fat (20%, whereas controls only had 15%)
  - No significant difference in the levels of ingynoid fat

- Greater amount of android fat in post-menopausal women as opposed to pre-menopausal women
- Could the larger distribution of android fat in dancers with low BMD be due to reduced oestrogen levels through F.A.T, poor nutrition or lifestyle?

Questions/conclusions/evaluations

Can BMD be restored? When BMI was increased, the BMD in the hip and spine area improved.

Energy deficit- the dancers burn off more than they take in, therefore hormonal changes occur rather quickly possibly leading to reduced bone formation and menstrual irregularities.

Bone is constantly changing (bends with blood vessels in it). The bone marrow is responsible for the immune system and blood cells.

The energy deficit may lead to negative mood patterns, fatigue, an increase to the susceptibility to injury, a decrease in muscle carbohydrate storage, menstrual irregularities and may also lead to poor bone formation.

If more than 14 kcal are expended per 14kg of fat-free mass – then there is an energy deficit.

Athletes and dancers expend 3000-5000 kcal per day; dancers need to take responsibility in keeping a balance within the body.

Responses to the Taught Sessions

Eric Walker

- Found the idea of changing perspective very interesting.
- The use of touch to increase the awareness around a joint could be beneficial during a warm-up or to ease/aid an injury. I try to avoid anyone touching my shoulders as I am very sensitive and feel pain very easily; never the less I was curious so I let Kate gently massage them. The difference that was felt between them when only one shoulder had been done was astonishing. Afterwards my back and neck area felt very broad and open.
- Tapping the body is a useful technique that I have come across before. The choreographer Gil Cohen Allerro uses the tapping technique as well as shaking the body to warm-up his dancers before rehearsals. I have never understood why it works, just that it did. I now know that it awakens the nervous system, activates the skin receptors and increases blood flow, all giving you a 'buzzing' feeling afterwards.
- Using imagery whilst dancing is a technique I have often implemented in the wings before going on stage to perform, where I will mentally run through the piece. I have never thought about using it to help me during class or rehearsals. I don't think it will help in all aspects of my training, however some areas, such as rehearsals and travelling sequences may benefit from the use of imagery.
- I like the idea of feeling as though my coccyx was a dinosaur tail dropping down to the floor. It does make sense as it could act as an anchor or stabiliser during movement.

Anne Went

- Half discussion and half lecture. Gave us a chance to try to implement what she had told us.
- Discussed briefly the importance of the triangles of the body. Being a fan of 'pyramid power' and the ideas that triangles can be used to channel concentrated energy; I was thrilled to discover that the body was made up of many triangles.

- Using meridian lines to give the body breadth and stability is a useful tool to aid clean and clear lines. Will try to incorporate this feeling and imagery during class.
- The useful tool of thinking about moving the adductors and abductors is one that I have been using for a while now. Due to my sway back legs I have had to constantly think about what my body is doing, especially during ballet. I think I need to use this idea more often throughout the rest of my training.

Gary Carter

- I really enjoyed his lecture, I felt as though I could have sat there for hours listening to him, as he was so enthusiastic about his subject matter.
- We have talked a lot about fascia and connective tissue during our Dance Science modules. As a third year I have also researched the connective tissue system for my dissertation. I have included some quotes from 'Job's Body' on connective tissue in the research section of this logbook.
- He mentioned briefly 'CranioSacral Therapy'. I have also included notes on this subject in the research section of this logbook.
- I liked the idea of being able to let my bones melt through the tissues of my body. I find that this gives me the sense of really being grounded and relaxed as opposed to tense and unconnected. Could become beneficial if incorporated into a warm-up.
- Found his ideas on evolution very interesting. I found a quote from Bill Bryson's book ***A Short History of Nearly Everything*** (2004) that exclaims that,

> *The average species on Earth lasts for only about four million years, so if you wish to be around for billions of years, you must be as fickle as the atoms that made you. You must be prepared to change everything about yourself – shape, size, colour, species affiliation, everything – and to do so repeatedly…to get from 'protoplasmal primordial atomic globule' (as Gilbert and Sullivan put it) to*

sentient upright modern human has required you to mutate new traits over and over in precisely timely manner for an exceedingly long while.

(Bryson, B, 2004:19)

Abi Hoffman

- Ashtanga yoga
- I have never done yoga before as I had been told that it might be a problem with my hypermobile joints. However, after a brief personal discussion with Abi she assured me that as long as I didn't 'sit' in the positions, but use my muscles to hold the poses then I should find it no problem and possibly beneficial.
- I felt confident in this class as I could do the majority of poses or 'Asana's' given.
- I have included a picture and description of the 'Sun Salutation' that we performed in our class in the research section of this logbook.

Yeval and Eleanor

- This was a fun and interesting seminar.
- Enjoyed listening to two musicians talk so passionately about their art and how they enjoy watching us interpret their music as they accompany our classes.
- Studied music at school so the brief history section acted as a refresher.
- I don't feel that this seminar will benefit me much during this semester, as I will not be doing any choreography work. However, it may prove useful (playing about with different tracks to the same dance) in the future.

Tim Holder

- This was my second seminar with him on goal setting. Tim is a very intelligent man who always tries to make his points relevant. For instance, pointing out how tidy our bedrooms are and how many cups of tea we make our housemates leading up to an assignment deadline (avoidance coping).

- Tim's area of expertise is in sport psychology and he often gives examples of his own experiences as a coach, however, there needs to be a way of incorporating it more into the context of dance.
- Goal setting could be easily related to dance i.e. increased flexibility, increased fitness levels, raising the standard of written assignments.
- I have learnt that outcome orientated goals can not always be controlled. It all depends on that moment. Task orientated goals would be more beneficial to a dancer as they can then be used to monitor their own progress and compare their own 'before and after' during the stages of their development.
- I have included further notes on 'Bandura's thoughts on self-efficacy in the 'research' section of this logbook.

Dr. Karl Cooke

- Again, I have been to a few of his seminars and have worked with him at the Human Performance Lab in Archway on our Dance Specific Fitness Test.
- After listening to him discuss the links between disordered eating and low bone mineral density, I thought that it might be interesting to look up some more information on the Female Athlete Triad. When I was eighteen I began studying at a full time professional performing arts school and found the balancing of work, studying and training very hard and often, mostly due to lack of money and time, forgot to eat regularly. As a result I lost a lot weight very quickly, which continued over a period of two and a half years. I felt that this subject area would be worth looking into as I can find out how my past may affect my health in the future. I have included some quotes and notes in the research section of this logbook.
- Found it remarkable to discover that how we look after and treat our bodies when young can affect our health in the future.
- Would have liked to be given a lecture based on modern contemporary dancers as opposed to ballet dancers.
- Will probably be more aware and conscious of my diet and food intake.

Tricia Liggett

- Only present for 15 minutes as I had to leave and prepare for the fitness test with the rest of my third year science class.
- Don't think of stretching a muscle, LENGTHEN IT!!! It is surrounded by fascia that needs to be teased out by use of body weight and resistance, not by force or else the fascia will become rigid and tense like the corn flour in Gary Carter's bowl.
- Nerve flossing - by assuming a lengthened pose, for example forwards flexion with palms on the floor, lifting the head to the ceiling will slightly pull on the nervous system causing a 'flossing' effect, breaking up any possible 'blockages'.
- I have looked-up the various methods of stretching and have included them into the research section of this logbook.

RESEARCH

Self-Efficacy and Sports Performance

These notes have been taken from the website http://coachsci.sdsu.edu and were written by Brent S. Rushell (Ph.D., R.Psy. 1988). Even though there was a huge amount of information available I have decided to only include the points that I feel are relevant to this course. I have added my own notes in brackets.

- Self-efficacy can be considered to be a person's perception of his/her abilities to successfully perform in a particular sporting (or dancing) activity.

- 'Feelings of high self-efficacy raise the duration and strength of effort in aversive situations while low feelings lead to lowered efforts even to the point of giving up or not engaging at all in the threatening situation' (Bandura, 1977). (Doing auditions amongst Royal Ballet and Rambert dancers, you know you haven't had the same intensive training, you don't stand a chance so you don't try as hard as you could).

- Self-efficacy influences an individual's effort and persistence in the face of difficult challenges, potentially aversive situations, and events with high probabilities of failure.

- High self-efficacy raises the duration and strength of effort in difficult and challenging circumstances. It is one of the principle ingredients that contributes to the ascription of "when the going gets tough, the tough (athletes with high self-efficacy) get going".

- When a new activity is started, or a new form of competition experienced, it is important that the athlete appraise him/herself as being successful.

Otherwise, with failure self-efficacy will be lowered and the athlete's performance standard at training and in competitions will be reduced.

- Performance goals should have a reasonable probability of being attained when established. Goals which can be attained through the athlete exerting control over all the relevant factors are usually the best.

Self-efficacy is based on four major sources of information:

1. ***Performance accomplishments*** are especially influential because they are based on experiences of personal mastery. Thus, the history of an athlete (or dancer!) in performing the tasks which are required for an impending contest (or performance/audition) will influence self-efficacy. It is necessary that individual athletes experience considerable success and positive reinforcement prior to an important event to increase the positive self-appraisal of performance competency.

2. ***Vicarious experiences*** are most influential when they are stimulated by positive self-modelling. For example, a suitable form of development would result from viewing a 'highlights' film of one's own accomplishments and successes. During competitions the witnessing of teammates' successes can have a positive effect on the viewer. However, failures have an equal, and in some cases more, detrimental effect on self-efficacy. Thus, watching other competitors prior to a competitive performance is risky if positive outcomes are not assured. (Could be relevant in an audition situation).

3. ***Verbal persuasion*** will have the greatest impact on those persons who have a reasonable basis for high levels of self-efficacy. Perhaps the best form of verbal persuasion would come from the athlete him/herself. ('I can do this, I've done it millions of times before!' etc). Public self-justification of why an

athlete should perform well is probably a more effective technique than any pep-talk or inspirational speech for increasing self-efficacy.

4. ***The physiological state of arousal*** is important for energising the level of effort that is applied to a task. The 'psyche-up' state reached by an athlete must be controlled and interpreted by the athlete as being beneficial. (Could be incorporated into the warm-up).

Self-efficacy will be unpredictable when a competitive situation is ambiguous, lacking in information, or contains a high degree of uncertainty (e.g., poor organisation).

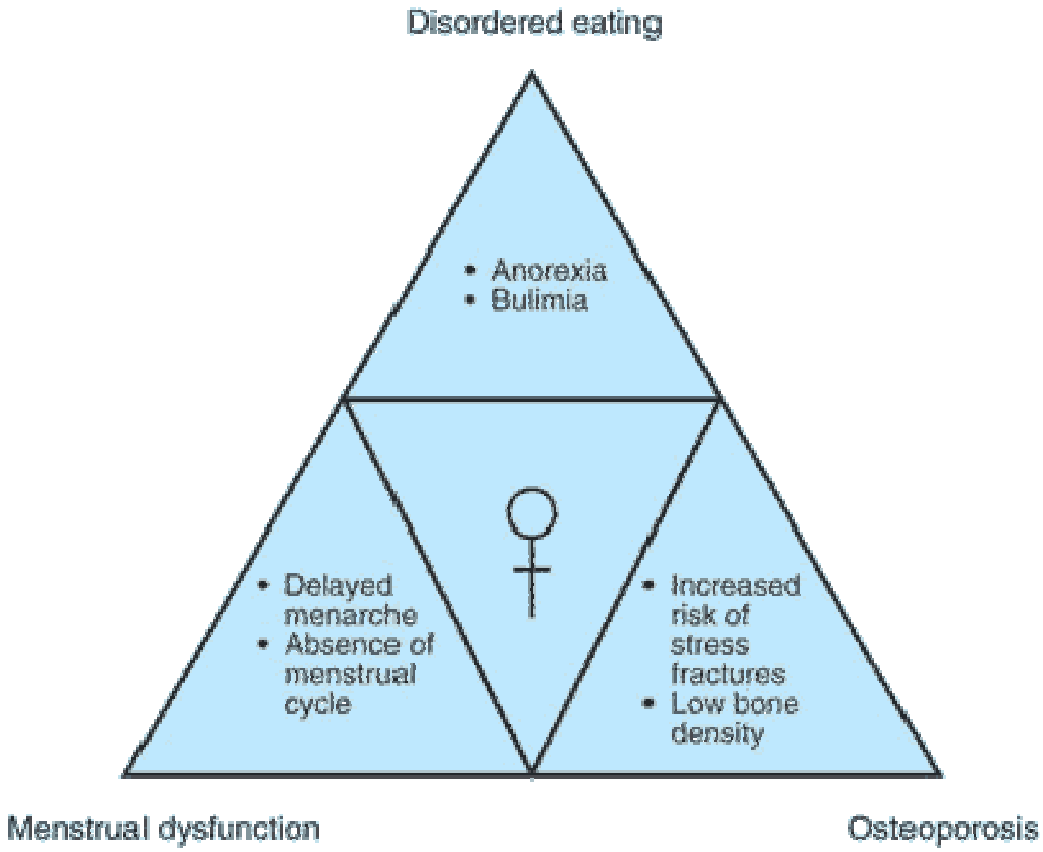
(This can apply to dance in many different ways:

- Not enough time spent rehearsing.
- When someone misses too many rehearsals and you have to adapt to having an extra person dancing with you.
- New performance space.
- Not being sure of the music.)

Self-efficacy is a factor which must be considered when attempting to have athletes achieve their best readiness states for a competition. Its variation will produce performance inconsistencies.

The Female Athlete Triad

The following information I have gained from the website http://kidshealth.org/teen/food_fitness/sports/triad.html. I have underlined the parts that I find more important.



Disordered Eating

Girls who have the disordered eating that accompanies female athlete triad often have many of the signs and symptoms of anorexia nervosa or bulimia nervosa, such as low body weight for their height and age and episodes of binge eating and purging. But girls with female athlete triad try to lose weight primarily to improve their athletic performance. Sometimes the disordered eating that accompanies this condition isn't

technically an eating disorder. Many girls with female athlete triad are simply trying to become better at their chosen sports. But like teens with eating disorders, girls with female athlete triad may use behaviours such as calorie restriction, purging, and exercise to lose weight.

Amenorrhea

Because a girl with female athlete triad is simultaneously exercising intensely and reducing her weight, she may experience decreases in oestrogen, the hormone that helps to regulate the menstrual cycle. As a result, a girl's periods may become irregular or stop altogether. Some girls who participate intensively in sports may never even get their first period because they've been training so hard - this is called **primary amenorrhea**. Other girls may have had periods, but once they increase their training and change their eating habits, their periods may stop - this is called **secondary amenorrhea**.

Osteoporosis

Low oestrogen levels and poor nutrition can also lead to osteoporosis, the third aspect of the triad. Osteoporosis is a weakening of the bones due to the loss of bone density and improper bone formation. This condition can ruin a female athlete's career because it may lead to stress fractures and other injuries due to weakened bones. Because of poor nutrition, a girl's body may not be able to repair the injuries efficiently.

Usually, the teen years are a time when girls should be building up their bone mass to their highest levels - called peak bone mass. Female athlete triad can lead to a lower level of peak bone mass and a lot of time on the sidelines. After she becomes an adult, a girl may also develop health problems related to osteoporosis at an earlier age than she would have otherwise.

Who Gets Female Athlete Triad?

Most girls have concerns about the size and shape of their bodies, but girls who develop female athlete triad have certain risk factors that set them apart. Being a highly competitive athlete and participating in a sport that requires you to train extra hard is a risk factor. Girls with female athlete triad often care so much about their sports that they would do almost anything to improve their performances. Martial arts and rowing are examples of sports that classify athletes by weight class, so focusing on weight becomes an important part of the training program and can put a girl at risk for disordered eating.

Participation in sports where a thin appearance is valued can also put a girl at risk for female athlete triad. Sports such as gymnastics, figure skating, diving, and ballet are examples of sports that value a thin, lean body shape. Some girls may even be told by coaches or judges that losing weight would improve their scores.

Even in sports where body size and shape aren't as important for judging purposes, such as distance running and cross-country skiing, girls may be pressured by teammates, parents, partners, and coaches who mistakenly believe that "losing just a few pounds" would improve their performance. Losing those few pounds generally doesn't improve performance at all - people who are fit and active enough to compete in sports generally have more muscle than fat, so it's the muscle that gets starved when a girl cuts back on food. Plus, if a girl loses weight when she doesn't need to, it interferes with healthy body processes such as menstruation and bone development.

In addition, for some competitive female athletes, problems such as low self-esteem, a tendency toward perfectionism, and family stress place them at risk for disordered eating.

What Are the Signs and Symptoms?

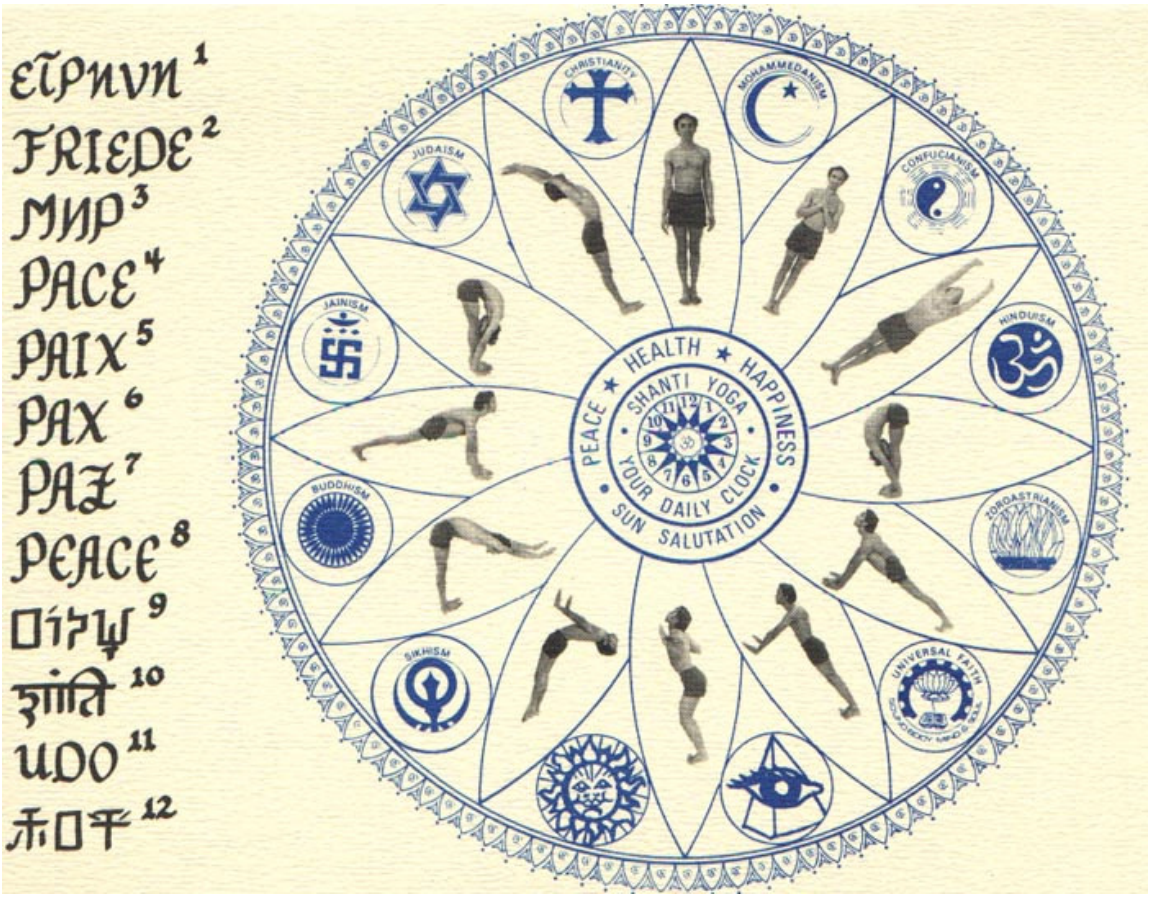
If a girl has risk factors for female athlete triad, she may already be experiencing some symptoms and signs of the disorder, such as:

- weight loss
- no periods or irregular periods
- fatigue and decreased ability to concentrate
- stress fractures (fractures that occur even if a person hasn't had a significant injury)
- muscle injuries

A doctor may recognize that a girl has female athlete triad during a regular exam. An extensive **physical examination** is a crucial part of diagnosing the triad. A doctor who suspects a girl has female athlete triad will probably ask questions about her periods, her nutrition and exercise habits, any medications she takes, and her feelings about her body. This is called the **medical history**. Because poor nutrition can affect the body in many ways, a doctor might also test for blood problems and nutritional imbalances. Because osteoporosis can put a girl at higher risk for bone fractures, a doctor who suspects female athlete triad may also request tests to measure bone density.

Sun Salutation

1. Palms together, prayer position.
2. Arms overhead, arch back.
3. Hands on ground beside feet, legs straight, and head to knees.
4. One leg back, crescent moon back bend, look up.
5. Push-up position, feet together, back straight.
6. Touch knees, chest and forehead to ground.
7. Slide forward into Cobra.
8. Lift hips into downward facing dog or inverted "V".
9. Step forward into crescent moon back bend, look up.
10. Feet together, hands on ground beside feet, head to knees.
11. Stretch up, arch back with arms overhead.
12. Arms at side.



Picture:

http://images.google.co.uk/imgres?imgurl=http://www.shanti-yoga.ca/images/sunsalutation.jpg&imgrefurl=http://www.shanti-yoga.ca/photos.html&h=544&w=700&sz=144&tbnid=EmsAwWUQWnwuxM:&tbnh=107&tbnw=138&hl=en&start=4&prev=/images%3Fq%3Dsun%2Bsalutation%26svnum%3D10%26hl%3Den%26lr%3D%26sa%3DG

Stretching, Lengthening and Flexibility

Ballistic Stretching

- Attempts to force the body to go beyond its normal range of motion.
- Bouncing on/off a joint.
- Not very effective as muscles are not relaxed and will tighten with each rebound.

Dynamic Stretching

- "Involves moving parts of your body and gradually increasing reach, speed of movement, or both" (www.cmcrossroads.com).
- Could be beneficial in a warm-up; leg and arm swings.
- As soon as you get tired stop, "tired muscles have less elasticity which decreases the range of motion in your movements".

Active Stretching

- Static-active stretching.
- Using your muscles to hold a particular body position.
- Shouldering the leg, then letting go, trying to keep it in the same position could be classed as active stretching.
- Strengthens agonist muscles (good for adage in dance).

Passive Stretching

- Relaxed stretching.
- Use of the body, furniture or equipment to maintain stretch.
- Shouldering the leg. Box splits (floor keeps you in that position).
- Good for cooling down.

Isometric Stretching

- Pressing against resistance.
- Putting the leg onto the ballet barré, press down. Helps to increase strength in the contracted muscles.

PNF Stretching

- Proprioceptive Neuromuscular Facilitation.
- "Is a technique of combining passive stretching and isometric stretching in order to achieve maximum static flexibility" (www.cmcrossroads.com).
- CRAC- Control, Relax, Agonist, Contract.

CranioSacral Therapy

The following information has been taken from www.consciuoschoice.com. Gary Carter briefly mentioned CranioSacral therapy during his lecture. I was intrigued so I decided to look it up. I have included some quotes from the source as well as my own thoughts.

- **"**Gentle, hands-on method of evaluating and enhancing the function of the CranioSacral system".

- System is made up of the membranes and fluid that surround the spinal chord and brain, from the cranium to the sacrum.

- Developed by Dr. John Upledger between 1975 to 1983.

- CranioSacral Rhythm:
    - Faint pulse "transmitted via the muscular, nervous and fascial systems and can be felt any where on the body".
    - The practitioner can feel the pulse and will determine areas that have a stronger or subtler beat. This way a blockage may be detected.

- Fascial Evaluation:
    - The connective tissue system, "it is layered with pockets between the layers containing the structures within the body such as organs, muscles, bones, etc".
    - Adhesions can be identified when the fascia is restricted, needs to be able to glide and be gloopy.

- "CranialSacral therapists believe that irregularities, or glitches, in the regular flow of the cerebrospinal fluid that lubricates these membranes can cause difficulties for parts of the body related to the area where the glitch is".

- "By gentle manipulation of the cranial bones, spinal and sacral bones, you can affect the overall body function and specific organ or muscle function through the central nervous system".

Connective Tissue

The following section contains extracts from Deane Juhan's book ***Job's Body*** (2003):

- 'A human being is a container invented by water so that it can walk around' (page 59).

- 'The fluid bathing our own cells throughout every nook and cranny of our bodies can still be resolved into the basic proportions of elements, salts, and carbon compounds – the organic building blocks – that are found in the ocean. So we did not really leave the sea behind at all; we were, and are, obliged to carry part of it with us' (page 60).

- 'The look and feel of connective tissue is familiar to any cook: It is the whitish glossy sac which surrounds each individual muscle in a carcass, the smooth, slick covering over raw bones, the membranes that encase the internal organs and line the body cavities, the tough tendons, ligaments, and bursae which cook up into gristle' (page 61).

- 'Collagen is to animals what cellulose is to plants – the tough lattice in which all other kinds of tissue are developed and contained, the walls of the compartments which fill with fluid to give the plant its juiciness and its upright turgor' (page 61).

- 'There is no tissue in the human body that is as ubiquitous as connective tissue, and as it migrates and develops in various forms in various locations, its "connective" qualities cannot be overstated. It binds specific cells into tissues, tissues into organs, organs into systems, cements muscles to bones,

ties bones into joints, wraps every nerve and every vessel, laces all internal structures firmly into place, and envelops the body as a whole' (page 62).

- 'If all the other tissues were extracted, the connective framework alone would preserve the three-dimensional human form in all its details' (page 75).

- 'We are not made up of stacks of building blocks resting securely upon one another, but rather of poles and guy-wires, whose stability relies not upon flat stacked surfaces but upon proper angles of the poles and balanced tensions on the wires' (page 82).

- 'Tactile stimulation (or the lack of it) produces certain emotional and conceptual responses in the higher brain; these feelings and concepts then exert an effect upon central nervous system activities as a whole, and upon the production levels of the pituitary in particular. These pituitary secretions in turn affect the health of the connective tissues and their ability to respond to trauma. These effects are all very different from mere "relaxation," the result most commonly associated with bodywork' (page 85).

- 'Individuals who are chronically stressed or disturbed in any way weaken their entire connective tissue network over a period of time, exposing it to pathological invasions of all kinds' (page 86).

Dance Specific Fitness Testing

During the last 12 months, myself, Tricia and the rest of the Dance Science class have been devising a Fitness Test for Dance. As the bleep test was deemed to be inappropriate for testing dancers' fitness levels, we decided to research and create our own. It was decided that the fitness test devised by the third year Dance Science class would be taught to the second years. By doing this it was hoped that the following questions would be answered:

1. Is it a valid dance test?
2. How does it compare to other fitness tests done previously (Bleep/Laban etc).
3. Does it make the dancer think about their own level of fitness?
4. Is it easy to pick up?
5. In which ways will it help the dancer with their own performance?

Organisation

It was decided that the easiest way to teach the test would be to split the group into three, one for each section of the levels. This way each section could be taught quickly and moved on to the next. So when the groups had learnt all three sections they would have a mark with the music altogether with the third years strategically placed amongst them. This was done throughout all five levels and acted as a warm-up.

Then the class was asked to split into two groups, as there wasn't enough room for everyone to do it at the same time. We also asked them to write a brief statement during the minute break between the levels to describe how they were feeling. We also asked them to write down their perceived rate of exertion as displayed in the Borg scale below:

6 ~ 20% effort ~ very, very light

7 ~ 30% effort

8 ~ 40% effort

9 ~ 50% effort ~ very light - gentle walking

10 ~ 55% effort

11 ~ 60% effort ~ fairly light

12 ~ 65% effort

13 ~ 70% effort ~ moderately hard - steady pace

14 ~ 75% effort

15 ~ 80% effort ~ hard

16 ~ 85% effort

17 ~ 90% effort ~very hard

18 ~ 95% effort

19 ~ 100% effort ~ very, very hard

20 ~ Exhaustion

Outcome

The test was very successful. The majority of the students did think that the test was a valid indicator of dance fitness. The main consensus was that it was better than the bleep test and Laban test as it was more specific to dance as it included travelling sequences, floor work, leg extensions and jumps. It was deemed relatively easy to

pick up; however, the directions and number of repetitions were harder to remember. This issue was important, as we have now been able to adjust the test to make it easier to remember. We have also been able to adapt it so it can be performed in a smaller space, as well as use both sides of the body equally. The music at that point was not properly edited which made it difficult; in addition to this the opening sections of each level had not been set to counts. This has now been rectified so it can be clearly followed and picked up. It was also mentioned that some of the movements could be modified to suit male dancers, however we agreed to look into the issue once we had established a fully finalised product that worked for the majority.

Application of the Module Content to the Semester

Cunningham

- Meridian lines – arms, legs, head
- Imagery – hitting shapes with body during travelling sequences
- Imagery – bones moving correctly during technique
- Imagery – anchoring/tying down standing leg into the floor to act as resistance for the working leg
- Lengthening – breathing into and letting the weight of my body 'stretch' out my muscles at the end of class

Humphrey

- Meridian lines – during body swings, floor work
- Fascial release – letting my bones sink through the tissues of my feet, many exercises focus on just the upper body, the feet don't actually move for a long time.
- Imagining that the bones are sinking through my tissues in my feet has helped to inhibit the occurrence of cramp in the soles of my feet.
- Relaxing stretch- breathing into my upper back during curves.
- Goal setting – plank
- Muscle lengthening – after class cool down

Performance

- Yoga – as a warm-up at the start of class.
- Anna uses imagery of bones sinking through tissues, a useful tool I have already been implementing during my technique classes
- Imagery – running through the long sequences 'mental rehearsal'.

Friends' Choreographies

- Use of different music for the same sequence – gave different effects
- Mental rehearsal to recap on my way to practices/pre-performance
- Meridian lines – when hitting clean body positions
- Nutrition – nuts and dried fruit to help keep my energy up
- Fascial release – during the floor work sequence in Rachel Scarlett's choreography. I find floor work awkward, relaxing and giving the floor my body weight helped to make my movements more fluid.

Fitness Test

- Field test our 'work in progress'
- Modify areas that didn't work
- Research the benefits of increasing dance fitness
- Adaptations for male dancers
- Sort out and organise music and pathways
- Make it work both sides of the body equally

Evaluation

As a third year Dance Science student I have found that the knowledge gained through this module has been very useful during my final semester at Middlesex University. During the following evaluation, the main tools that have been implemented and their outcomes will be discussed to show how they have possibly improved my overall development and aesthetic qualities in relation to each practical sector of the semester.

As Cunningham technique involves a lot of clean lines and body positions, imagining the meridian lines going through my body has helped me to make a connection with my extremities. During the '*Exercise on Six'*, the arms have a very clear pathway moving from second position facing the front, then with a torso twist, to a forwards tilt. Feeling a connection from fingertip to fingertip, running through my back has made me look and feel stronger. The same applies during adagé or grande battements. By feeling that there is a line of energy running from my centre, up and through the top of my head and down my supporting leg into the floor, I have been able to anchor myself and feel secure and grounded. The use of imagining the meridian lines through my arms and legs have also helped me create clean lines during the various rehearsals and performances for my friends' choreographies.

Humphrey technique involves implementing the 'fall and recovery' of a movement. Thinking of softening the connective tissue system has given me a new way of moving. By melting into a plié or upper body curve, I have been able to feel a lot more liberated in my movements and not so 'held'. I have a problem with exercises that involve core stability and postural control and find that my upper back tends to tire quickly causing it to hunch, making my neck jut forwards. In Lesley's Humphrey class we do a section on the floor that involves the 'plank' both forwards and sideways. I find this really difficult, however, I set myself a target of not being the first one to lower their knees when tired. This way I have to try to hold on as long as

possible, helping me to improve my control, as well as making me think about my alignment. I can now do the sequence on the floor – twenty counts of four forwards plank, followed by another four sets of four counts forwards, then one sideways for four, then the other. By forcing myself to stay up I have found that my core postural control in certain exercises has improved during Humphrey, such as the '*leverage study*, and '*body swings'*.

During my 'Performance 2' module, the choreographer (Anna Williams) ensures that we all do a proper warm-up before our rehearsal. During this warm-up we are asked to imagine our bones melting through our feet, similarly to the way that Gary Carter instructed us to. This way my movements are more grounded due to the understanding my body already has of this instruction. We also perform the 'Sun Salutation' as a warm-up. As I have already been practicing the movement patterns and phrases through out the term, I have found that I have been able to maintain the positions cleanly without tiring as early as I had done previously. During the piece we are instructed to dance as though the air is really thick. Using imagery, I see myself slicing through 'strawberry mousse' with my arms, legs and various other body parts to create the required aesthetic.

I have also been using imagery before going on stage, whilst taking part in my friends' choreographies. As a lot of the pieces were only finished a couple of days before the performance, there was not enough time to practice and rehearse the movements adequately. Imagery really helped to go over every section of the dances, highlighting the areas that I did not feel comfortable with. The use of imagery has also helped me during my technique classes. By imaging where my body is anatomically, I have been able to visualise what my internal structures are doing when I am dancing. For example, during a plié I have been imagining my knees bending forwards over my toes, with each muscle lengthening or contracting. This has helped to ensure that I am using the correct technique at all times and helps me to avoid possible injury through faulty body positions.

It was amazing to be able to 'field test' our Dance Fitness Test on the second years. By doing this, we as a class have been able to modify it so it can become a more valid test in the future. There are various tests for fitness in sporting disciplines; however a specific dance fitness test (excluding the Laban test) has yet to be devised. The importance of this lies in the belief that dance is a multidisciplinary art form that calls upon all the areas of physical fitness intermittently. The bleep test only tests athletes' cardiovascular fitness whilst running, therefore not specific enough to be a valid indicator of dance fitness. Hopefully our test will become the main assessment tool to indicate the fitness levels in the 'Fitness for Dancers' class taught by Judy DiFiore.

In conclusion, I believe that the application of imagery, fascial release, goal setting as well as sensing meridian lines have all aided in my development as a dancer during my last semester here at Middlesex University. I have been given the opportunity to study and explore various components involved within the Dance Science field during this Self and Performance 'A' module, thus expanding my knowledge. I may not be perfect, but I have developed an increased sense of awareness that I have lacked previously, an awareness that has given more depth and enjoyment within my movements.

Bibliography:

Books

- Alter, M. (2nd Ed) 1996 ***The Science of Stretching*** Human Kinetics: USA
- Bryson, B. 2004 ***A Short History of Nearly Everything*** Black Swan: UK
- Franklin, E. 2004 ***Conditioning for Dance: Training for Peak Performance in all Dance Forms*** Human Kinetics: USA
- Juhan, D (3rd Ed) 2003 ***Job's Body – A Handbook for Bodywork*** Station Hill Press Inc: USA
- Kendall, F, McCreary, E and Provance, P. (4th Ed) 1993 ***Muscles, Testing and Function*** Lippincott Williams and Wilkins: USA
- Koutedakis, Y and Sharp, C. 1999 ***The Fit and Healthy Dancer*** Wiley: UK
- Smith, J, Kelly, E and Monks, J. 2005 ***Pilates Yoga; a Dynamic Combination for Maximum Effect*** Lorenz Books: UK
- Watkins, A and Clarkeson, P. 1990 ***Dancing Stronger Dancing Longer*** Princeton Book Company: USA
- Weltman, A, 1995 ***Blood Lactate Response to Exercise*** Human Kinetics: USA

Articles

- Koutedakis, Y. 2005 'Fit to Dance'; ***The Journal of Dance Medicine and Science*** Vol 9 No 1Wyon, M. 2005 'Cardiorespiratory Training for Dancers'; ***The Journal of Dance Medicine and Science*** Vol 9 No 1
- Koutedakis, Y, Stravropoulos-Kalinoglou, A and G Metsios. 2005 'The Significance of Muscular Strength in Dance'; ***The Journal of Dance Medicine and Science*** Vol 9 No 1

- Redding, E and Wyon, M. 2003 'Strengths and Weaknesses of Current Methods for Evaluating the Aerobic Power of Dancers'; ***The Journal of Dance Medicine and Science*** Vol 7 No 1

- Wyon, M. 2005 'Cardiorespiratory Training for Dancers'; ***The Journal of Dance Medicine and Science*** Vol 9 No 1

- Wyon, M, Redding, E, Abt, G, Head, A and Sharp, C. 2003 'Development, Reliability, and Validity of a Multistage Dance Specific Aerobic Fitness Test (DAFT)'; ***The Journal of Dance Medicine and Science*** Vol 7 No 3

Internet

- Appleton, B ***'Stretching and Flexibility- Types of Stretching'***
  http://www.cmcrossroads.com/bradapp/docs/rec/stretching4html#SEC28
  (Date visited 19/03/06)

- Mac, B, '***Endurance Tests'***
  http://www.brianmac.demon.co.uk/20mshuttle.htm
  (Date visited 04/02/06)

- Mac, B, '***Lactic Acid'***
  http://www.brianmac.demon.co.uk/lactic.htm
  (Date visited 04/02/06)

- Mac, B '**VO_2 Max'**
  http://www.brianmac.demon.co.uk/vo2max.htm
  (Date visited 04/02/06)

- Rushall, B '**Self-Efficacy and Sports Performance'**
  http://www.coachsci.sdsu.edu/csa/vol14/rushall5.htm
  (Date visited 19/01/06)

- http://www.consciuoschoice.com

- http://kidshealth.org/teen/food_fitness/sports/triad.html.

- http://images.google.co.uk/imgres?imgurl=http://www.shanti-yoga.ca/images/sunsalutation.jpg&imgrefurl=http://www.shanti-yoga.ca/photos.html&h=544&w=700&sz=144&tbnid=EmsAwWUQWnwuxM:&tbnh=107&tbnw=138&hl=en&start=4&prev=/images%3Fq%3Dsun%2Bsalutation%26svnum%3D10%26hl%3Den%26lr%3D%26sa%3DG