An Investigation into Maximising Learning within a Year Ten G.C.S.E Theoretical Physical Education Class.

Aim:

The aim of this research project was to maximise learning within G.C.S.E theoretical Physical Education through the means of action research. This objective was to be achieved by considering how to facilitate learning through the exploration of compatibility between teaching strategies utilised by the teacher and the preferred learning style of the pupils.

Introduction:

The motivation behind selecting this area of study within Physical Education stemmed from many personal and professional experiences. During my own schooling I found that my own physical education teachers were extremely resourceful and innovated in the field but restricted and unimaginative in the classroom. During University I strived to develop my own teaching repertoire both practically and theoretically. I found whilst training that there was lots of support, guidance and initiatives for the practical delivery of PE, as for the theoretical delivery of PE there was relatively no guidance in comparison. In my experience so far the theoretical delivery of PE has yet to be fully researched and investigated. This action research project was the start of my reassessment of the delivery of theoretical Physical Education, in an attempt to identify and implement strategies to prevent myself (and perhaps others) from being dynamic in the field but limited in the classroom.

Justification:

Improving the delivery of theoretical Physical Education, and increasing the amount of learning taking place, contributes to the fulfilment of the Every Child Matters Agenda, (DfES, 2007), whereby it is aimed that pupils should be given the opportunity to enjoy and achieve, and as a result go onto achieve economic wellbeing. Similarly, it will also facilitate the achievement of the Key Stage 4 Curriculum Opportunity for pupils to follow pathways to other activities in and beyond school (DCSF/QCA, 2007).

Providing effective and engaging Physical Education may also offer pupils the opportunity to improve self esteem, motivation and the empowerment to seek out additional sporting opportunities within, and beyond, the curriculum. This contributes to the fulfillment of the PESSYP Strategy (DfES/QCA, 2008); which helps pupils make the transition between school, extracurricular, and out of school sport.

This project also adheres to and supports the National Curriculum Statutory Inclusion Statement (DfEE/QCA, 1999), whereby teachers should set suitable learning challenges, respond to pupils' diverse learning needs and overcome potential barriers to learning. After all, how you teach is just as important as what you teach in achieving the intended learning outcomes (Whitehead and Zwozdiak-Myers, 2004). This statement must be taken into consideration if we as educators are to impart knowledge efficiently.

In summary, this project fosters the opportunity to explore an area of Physical Education that has not been fully explored and examined to date. If successful, other educators may be encouraged to implement suggested strategies or re-evaluate their own delivery techniques. This may result in an increase in quality of education received by pupils in Physical Education and the wider remit of other subjects.

Review of Literature:

The breakdown in teaching and learning may be a result of the way pupils learn, compared with the way in which the pupils are taught. Imparting knowledge efficiently maximising the learning taking place, is after all the ultimate aim of teaching (McKeough, Lupart, and Marini, 1995).

Learning styles can be defined as personal qualities that influence a pupil's ability to acquire information, to interact with peers and the teacher, and otherwise participate in learning experiences (Grasha, 1996; Pask, 1976; Entwistle, 1992). The concept of learning styles stem from the observation that individuals prefer to learn in different ways. Some individuals prefer to work independently, whereas others prefer groups; some absorb information, and others like to actively experience activities (Davis, 2009). There is some conflict between researchers of the value and use of learning style theories and models. Kratzig and Arbuthnott (2006), and Leamnson (1999), suggest that learning styles and models have little practical application and use in teaching. Dunn and Griggs (2000) however, argue that there is an overwhelming amount of credible data that demonstrate educators increasing student academic attainment by

focussing on learning styles. The learning style theories and models referenced in this project are outlined below:

Visual, Auditory and Kinaesthetic (VAK) - The VAK model of learning suggests that individuals prefer to take in information either visually, auditory or kinaesthetically. Visual learners prefer visual input, and will tend to maintain eye contact with the teacher; they can create accurate mental pictures and models. They like to have hand outs and would prefer to read than to be read to (Jensen, 2009). Auditory learners prefer to take in auditory information. They often have conversations with themselves (both aloud and in their head) and others, they can recall information from discussions accurately often mimicking the tone and tempo of the conversations (Jensen, 2009). Kinaesthetic learners prefer physical input. They like learning by experiencing and doing. Kinaesthetic learners are usually physically active, they are affected by teacher expression, posture and proximity, they place much more emphasis on how something is said not what was actually said (Jensen, 2009).

Visual, Aural, Read/Write and Kinaesthetic (VARK) - The VARK model is similar to the VAK model, but it also suggests that individuals may also prefer to take in information through reading and writing. These learners prefer to process information by reading and/or writing.

Note: For the purpose of this study when referring to the term kinaesthetic within the VAK and VARK learning models, it is written with the interpretation that kinaesthesia is concerned with, and relates to the conscious awareness of the position of the body, and movement with the

body in space. When the term proprioception is used it refers to the subconscious mechanism with which the body regulates posture and movement (Floyd, 2007).

Active Learning - Active learning is considered as a process in which learners strive for understanding and competence, and seek out knowledge about the world (Piaget, 1972; Rogers, 1975). This is something that should be promoted as an ethos, to encourage pupils to take ownership of their own learning, fostering curiosity and interest. This will also in turn facilitate the notion of active engagement, whereby it is deemed that pupils learn most effectively when they are interested, involved and appropriately challenged (DfES, 2004). By allowing pupils to test out their knowledge in practice situations the more thoroughly they will understand it. By fostering opportunities for learners to apply and relate the theoretical principles in practice, the better they will become at remembering these principles (Davis, 2009).

Plan of Action:

Initially the learning style preferences of the individuals were determined using VAK and VARK questionnaires, this information was used to ascertain the general preference of learning style for the whole class. Teaching strategies that compliment the class preferences were selected in an attempt to maximise learning. The principles and theories described in the review of literature have informed the table of proposed teaching strategies outlined below:

Table 1 - Proposed Teaching Strategies:

Strategy	Visual	Auditory / Aural	Read / Write	Kinaesthetic
Activities Using Real Items (Hand Grip Dynamometer)	✓	✗	✗	✓
Computer Presentations (Power Points)	✓	✓	✓	✗
Debate	?	✓	✗	?
Demonstrations (Watching and Presenting)	✓	✓	✗	✓
Interpreting Diagrams	✓	✗	✓	✗
Dictation	✗	✓	✗	✗
Discussion	✗	✓	✗	?
Drawing and Sketching	✓	✗	✓	✓
Explanations (Teacher and Pupil Lead)	✗	✓	✗	?
Feedback (Verbal and Written)	✓	✓	✓	✗
Games	✓	✓	✗	✓
Group Exercises	✓	✗	?	?
Handouts	✓	✗	✓	✗
Internet Research	✓	✗	✓	?
Listening	✗	✓	✗	✗
Measuring (Height / Weight)	✓	✗	✓	✓
Mind Maps	✓	✗	✓	✓
Observing	✓	✗	✗	✗
One to One	✗	✓	✗	✗
Photographs / Pictures	✓	✗	✓	✗

Practical Activity	✓	✗	✗	✓
Presentation	✓	✗	✓	✓
Question and Answer	✗	✓	✗	?
Questionnaires	✓	✗	✓	?
Reading	✓	✗	✓	?
Recording Data	✗	✗	✓	✓
Researching	✓	?	✓	?
Resource Card Based Learning	✓	✗	✓	✓
Role Play	?	✓	?	✓
Video	✓	✗	✗	✗
Whiteboard	✓	✗	✓	✗
Worksheets	✓	✗	✓	✓

Table 1 Key –

✓ Teaching strategy facilitates learning style.

✗ Teaching strategy does not facilitate learning style.

? Teaching strategy may or may not facilitate learning style. It is dependent upon the way in which the strategy is used and the situational circumstances.

Preliminary Research:

The information gathered from the preliminary research showed that the class as a whole had strengths of preference towards kinaesthetic, read/write and visual stimuli. This information

will also provide the basis for understanding the behaviour of pupils throughout the study, in relation to on task and off task behaviour demonstrated whilst being observed.

Discussion of Results:

Pupils were on task and engaged for a larger percentage of time whilst being observed, when a range of teaching strategies were implemented, that all types of learners could access. This was especially evident in week 4, where all pupils demonstrated on task behaviour for the entire lesson. This suggests that in order to maximise learning, by managing the amount of on and off task behaviour demonstrated by pupils, educators should aim to implement teaching strategies that are accessible for each type of learner. Choosing flexible teaching strategies that pupils can interpret in different ways, allows pupils to selectively attend to stimuli that appeal to their learning needs.

This is also linked with internal motivation, as pupils have an element of control in how they learn, by choosing to interpret stimuli that are in line with their own learning preferences. The practical reinforcement and application of learning within the lesson was essential in maximising learning. Figure 1 illustrates the mean percentage of time pupils were on task whilst being observed over the course of the study.

Figure 1 - Mean percentage of time pupils were on task whilst being observed:

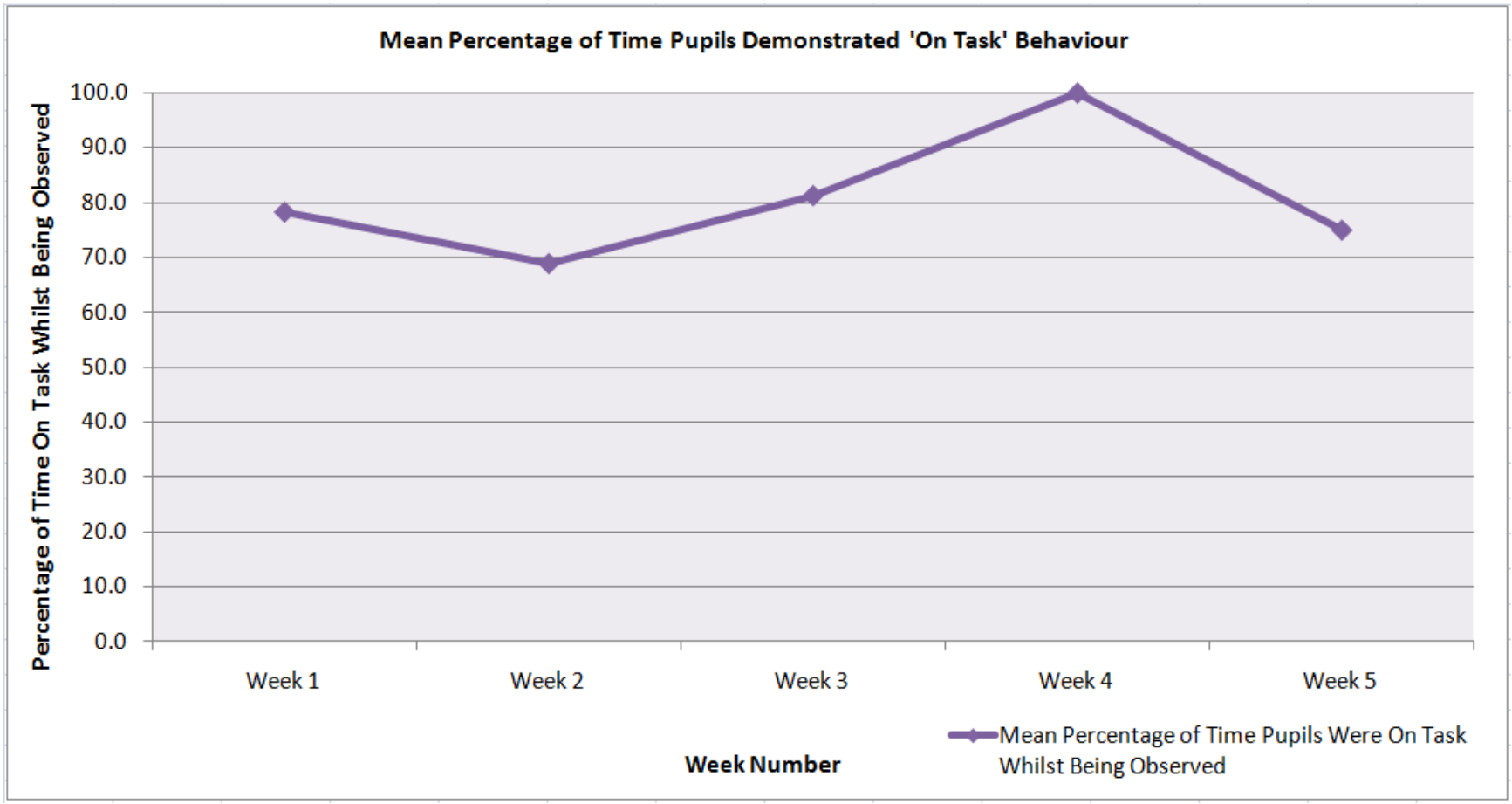

Figure 1 illustrates that pupils were on task for the greatest amount of time during week 4, and were on task the least amount of time during week 2.

Evaluation and Conclusion:

Overall, I believe this study to have been a success with some insightful results and conclusions. Perceived limitations of the study and areas that could have been improved are as follows:

Kolb (1999) and Honey and Mumford (1992) suggest learning styles are not fixed characteristics, but instead develop through experience. Styles are therefore not necessarily static but may change over time and from one situation to the next. Entwistle (1998) believes that it is also important to consider how students tackle a specific learning task, along with any habitual preference (learning style). What these authors have in common is an emphasis not simply on the learner but on the interaction between the learner, the context and the nature of the task. This study supports these theories in that the results show that in order to engage pupils for the entire lesson, the teaching strategy (task), topic (context) and pupil learning style (pupil interaction) must be addressed in a cohesive manor, in order to maximise learning. It also reinforces the importance that learning styles are not fixed, but are unstable characteristics, and therefore pupils should regularly complete learning style questionnaires to track their preferred learning styles.

On reflection, I believe it would have been beneficial to have had researched the types of kinaesthetic learners in more detail prior to the study. This information would have informed teaching strategies and helped understand pupil behaviour within the lesson. The two types of kinaesthetic learners are outlined below:

Kinaesthetic-internal learners value non-verbal communication and focus on how something is said rather than what is said. They need to have positive internal feelings about the task before conducting it. They internalise information before responding to a questions or tasks (Jensen, 2009). Kinaesthetic-tactile learners prefer physical input and information. They like learning by manipulating objects or by touch, feel and activity. They are influenced to a large degree by teacher proximity, attention and personal contact (Jensen, 2009). The differences between these learning styles may have been the reason why some pupils interacted with the teacher more than others. In future research I would establish what type of kinaesthetic style pupils had a preference towards.

The teacher could also complete the learning style questionnaires in a future study, as research has suggested that there may be a link between the way in which teachers learn, and the way in which they teach (Davis, 2009). For example, teachers with a preference towards visual stimuli may incorporate more information in this style within their lessons, when compared with auditory and kinaesthetic stimuli.

If this study was to be repeated, I would have trialled it over a longer time frame. It would also be interesting to conduct this study with a larger class to further understand the difficulties of implementing teaching strategies that all learners can access, perhaps with a larger range of learning styles and preferences. A mixed gender class may also highlight learning differences between male and female pupils.

In conclusion, teaching strategies alone will not fully maximise learning. Pupils' prior knowledge, skills, abilities and motivations must also be taken into consideration when

striving for pupil achievement (McKeachie, 1995). That being said, by developing pupils' effectiveness as learners, they can be empowered to take responsibility for their own learning by understanding how they learn most effectively, and the essential skills required to learn in regions that are less comfortable for them (Keeton, Sheckley, & Griggs, 2002). This can be applied to all subjects and age ranges.

It is important to note that implementing teaching strategies that consistently appeal to the learning preference of the pupil may limit learning in other contexts and situations. Instead, educators should strive to encourage pupils to develop their effectiveness as learners holistically across all learning styles.

Sadler-Smith (2001) suggests that knowledge of learning styles enables pupils to adapt to different situations more easily. Similarly, Ramsden (1983) believes that pupils who are aware of a range of strategies are more likely to select the correct one for a particular task, based on their learning preferences. Therefore, not only should educators aim to adapt and implement teaching strategies suited to the learner, but also learners need to have an awareness of which learning styles are most appropriate for their learning needs, in order to fully maximise learning.

Taking this into consideration, encouraging metacognition (awareness of one's own thought and learning processes) is therefore the most important concept to be taken from this study. The challenge for educators is to provide metacognitive support for learners, enabling them to reflect not only on what they learn but also on how they learnt it, and why. This will enable pupils to become holistic learners, capable of managing their own

learning environment, an invaluable skill for lifetime learning within and beyond compulsory education.

Key References:

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