Critical
Commentary

The Student Journal of
Newman University College and CREST Institutions

Contents

Critical Commentary

The Student Journal of
Newman University College and Crest Institutions

Volume 5

GUIDELINES FOR POTENTIAL CONTRIBUTORS

Critical Commentary welcomes articles from undergraduate and postgraduate students which discuss topics of importance and interest from all subject areas. Articles may be written from a variety of academic and professional perspectives and should be informed by theory and research. Articles accepted for publication should not exceed 7,000 words excluding references. Critical Commentary will hold the copyright of the article if it is subsequently published. Articles should be emailed to:

John Howard
Research Office Administrator; Graduate School
Newman University College, Genners Lane, Bartley Green, Birmingham, B32 3NT
Phone: 0121 4761181 ext: 2246
Fax: 0121 4761196
Email: john.howard@newman.ac.uk

Manuscripts should conform to the following requirements listed below.

- The articles should be typed (font size 12 Tahoma) on one side of the paper, double line-spaced, with ample margins, and bear the title of the contribution, name(s) of the author(s), the full postal and email address of the author who will check proofs and receive correspondence. Offprints should also be included.

- All pages should be numbered.

- Footnotes and headers to the text should be avoided.

- Each article should be accompanied by an abstract of no more than 200 words together with three to five keywords. The abstract should be submitted on a separate sheet to the main text.

- Tables and figures must be reproduced on separate sheets and not included as part of the text.

- Tables should be numbered by Roman numerals, and Figures by Arabic numerals. The approximate position of tables and figures should be indicated in the manuscript.

- References should be indicated in the typescript by giving the author's surname (without initials), with the year of publication in parenthesis.

- When referencing direct quotations, please use the following format, (Brookes, 1998: 3) this would indicate that the Surname is Brookes, the Year was 1998, and the page number is 3. Single citation marks must also be used around the quotation.

- If several books/papers by the same author and from the same year are cited, a, b, c, etc. should be put after the year of publication.

- The references should be listed in alphabetical order at the end of the paper in the following standard form:

For books: Ball, S. (1990) *Politics and Policy Making in Education*. London: Routledge and Kegan Paul.

For articles: Johnson, R. (1989) 'Thatcherism and English education: breaking the mould or confirming the pattern?' *History of Education*, 18 (2), pp3-34.

Titles of journals should not be abbreviated.

For chapters within books: Ranson, S. (1990) 'From 1944 to 1988: education, citizenship and democracy.' In M. Flude and M. Hammer (eds) *The Education Reform Act 1988: Its Origins and Implications*. Basingstoke: Falmer.

• A PDF offprint is supplied free on publication.

EDITORIAL

This issue of Critical Commentary is a particularly noteworthy one. Last year the Consortium for Research Excellence Support and Training (CREST) and a number of its partner institutions made the decision to support Critical Commentary and contribute to its continuing development and success. Therefore as Critical Commentary moves into its fifth year of publication we are pleased to present its first issue as a collaborative journal. I would like to give a special welcome to all new readers and potential future contributors!

This new stage is represented by more than just an extra logo on the cover. Critical Commentary has been opened to submissions from students at the nearly twenty member institutions of CREST; the Editorial Board has been expanded to reflect the wider range of expertise in the larger number of research are as now available to be covered in future issues of Critical Commentary.

Despite the changes the purpose of Critical Commentary remains the same: to continue to publish outstanding work embodying research of comparable quality and potential impact. This policy received an affirmation by the QAA when it identified the development opportunities provided by Critical Commentary as being good practice. Now these opportunities are no longer restricted to Newman University College alone.

In the first article Abigail Holmes uses her research into dance programmes in a West Midlands school to consider the resulting physical and mental benefits and barriers, providing insights into future developments of dance programmes.

The effects of plyometric and complex training programmes on a number of performance parameters are explored in Nicholas Mohammed's study, which is sure to extend the knowledge base concerning training methods currently used.

Diane Reid explores a mixed methods approach to determine the impact and effectiveness of Alternative Provision (AP) at Key Stage 4, providing a historical context for AP and examining the growing need for it within the now traditional structure of the National Curriculum.

In his article Alexander Webster provides a critical review of the literature concerning organisational structure and employee agency and poses the question: 'Are the symbolic and formal aspects of organisational life aligned?'

Steve Ingle's article outlines the findings of a comparative enquiry into the use of various information communication technologies (ICT) by learners, trainee teachers and qualified teachers in the post-compulsory education sector, and concludes with a discussion of the findings in which he provides a range of recommendations for teacher educators.

Professor Yahya Al-Nakeeb
Editor
Newman University College
April 2012

A Case Study to Evaluate the Integration of Dance Programmes for Children within a Mainstream Primary School in the West Midlands

Abigail Holmes

ABSTRACT

This research report evaluates the integration of dance programmes for children within a mainstream primary school. Dance is, and always has been, an underdeveloped and under-researched area within the curriculum. The study focus was on a mainstream school situated in the West Midlands, which is an average sized school with a total of 280 pupils registered. Thirty eight of these pupils were used for this study. The findings revealed dance has benefits for children within the following themes; dance as an art form and child development (physical, social and emotional). On the other hand, dance could also create barriers for some children, including; stress, gender and the curriculum. Any barriers that were identified to dance incorporation, however, should not act as a deterrent. The findings also revealed some interesting comparisons between those who have to participate in dance as part of the curriculum (cohort one) and those who have chosen to participate as part of the afterschool dance programme (cohort two), this was the third and final theme. This research provides strong foundations to an insight into future developments of dance.

Introduction

A definition of dance needs to be established in order to understand its true meaning. Hawker (2004) gives a basic dictionary definition of dance as a series of steps and movements performed rhythmically to music. This definition denies dance as an art form. Bloomfield (2007) counteracts this view and identifies dance as a form of art which uses the body as the instrument for expression. McKittrick (1972) agrees with Bloomfield through suggesting dance is more than random movements of the body.

Including arts in the primary curriculum is important for growth, self esteem and creative expression of children and is no way trivial to their education process (Dito, 2001). Dance has often been overlooked as important and has not always been included within the curriculum. Ferguson (1997) rationalises the importance of dance through identifying children who actively participate in dance perform at higher levels academically. Yet Dito (2001) as an educator contradicts this belief through arguing dance is a frivolous activity with no educational merit. Lowden (1989) identified that even though dance is becoming an increasingly popular choice in schools there is inadequate research encompassing its importance. Dance has been an area of the National Curriculum since 1992, it is under-researched and under developed. Due to limited research in the area of dance, this justifies the means of such research.

The purpose of this study is to provide more than anecdotal evidence as to the benefits and barriers of dance, as more schools are incorporating dance but few fully understand the implications of having such programmes. This study looks specifically at the dance curriculum and the afterschool programme of one primary school in the West Midlands, in order to identify the benefits and barriers of dance for children. This is the first subsidiary question. This research also looks at the strategies that have enabled the programmes and why these programmes have been incorporated, which are the second and third subsidiary questions. The main aim of this research and thus the subsidiary questions informed the research design and methodology.

Benefits of Dance Programmes

There can be no adequate realisation of the power of dance movement in our schools (Brinson, 1991). Dance should be an integral component of comprehensive education for the same reasons as maths, history, language and science as they pervade everyday life (Dito, 2001). Dance makes a distinctive contribution to the education of all children through offering a different approach to learning (Brinson, 1991). Although the body of research around dance is small, there is evidence to suggest that dance can have benefits for children.

Social and emotional development

Listening and responding to directions, offering suggestions, exploring others' ideas while waiting for a turn and simply moving in a shared space together are opportunities for learning and practising social skills (Bergstein-Dow, 2010). Through dance children can explore and express their social and emotional skills via independent or group activities which encourage all aspects of learning. A child who cannot easily express themselves within a classroom environment may find an outlet in movement. Children enjoy the opportunity to express their emotions and become aware of themselves through creative movement (Bergstein-Dow, 2010).

Physical development

Children learn to control their bodies while participating in dance. They become aware of how fast they are moving, how to speed up and slow down, how to stop and start, and how to navigate their bodies in different directions (Bergstein-Dow, 2010). Guided movement helps children learn new motor skills and build on those already in use. Overall improvements would be made in: co-ordination, agility, flexibility, increased physical confidence, body control, balance, stamina and overall strength (Bergstein-Dow, 2010).

As a result of the recent UK government health initiatives to encourage more children to participate in physical activities, dance is increasingly on the agenda as a way of enhancing physiological and psychological well-being. While the benefits of sports activities are well documented the potential benefits of dance in this regard are less well known. Although dance educators are aware of the benefits, much of the research is anecdotal rather than evidence based. A research study carried out by Quin et al (2007) conducted a series of tests on 348 participants including physical fitness assessments such as: lung capacity, flexibility and aerobic capacity. They also undertook a number of psychological tests including self-esteem, intrinsic motivation and attitudes towards dance providing us with research evidence. It can be concluded from the data that creative dance increased lung capacity, flexibility and aerobic capacity. Psychological results found that dance enhanced psychological well-being in all three areas. These changes were positive but statistically not of great significance. Quin et al (2007) suggest if these programmes were pursued, and developed as longitudinal

programmes greater significance may have been found. Overall the dance programme had a positive effect on both physical fitness and psychological well-being. This study scientifically validates the potential health benefits of dance although there is still more research to be undertaken, including replicating the study in other areas of the UK and with other age groups.

Barriers dance programmes could create

Stress

Between 2008 and 2011 the Arts Council for England invested £1.6 billion from the government to create art experiences for as many people as possible across the country (The Arts Council, 2010). Dance mapping research set up by the Arts Council offers a deep insight into the breadth and range of dance work now happening in England (Burn and Harrison, 2009). Thus suggesting the minute barriers to dance have not acted as a deterrent of participation. However, when children are persuaded to participate in dance, physical and emotional stress can arise.

A rise in stress produces the cortisol hormone from the adrenal gland. Increasing cortisol levels is considered a negative indicator of health. Rohleder et al (2007) found an increase in cortisol levels in ballroom dancers who were within competitive situations. Rohleder et al (2007) suggested this was due to the stress and threat of the competitive situation. When dancing socially (as children would be in school) many feel relaxed resulting in minimal stress levels. However, if stress is induced through competition or examinations health complications may occur. It can also be argued by Ohman et al (2007) that moderate stress can have adaptive benefits for humans of all ages. Generally however the benefits outweigh the minimal risks which should not deter participation.

Gender

Mennesson (2009) identified only fifty percent of schools in our education system offer dance; this may be due to this particular physical activity being deemed feminine. Although this view seems outdated, ballet dancing is still seen as a female activity, with the figure of a ballerina as its ideal type (Mennesson, 2009). This suggests that dance is still a stereotyped activity with its highly gender discriminating practices and styles. As children are participating in a compulsory curriculum it is vital that the delivery of the lesson is enthusiastic and engaging for all to ensure enjoyment for males and females alike.

Curriculum

The National Curriculum can also be identified as a barrier due to its limited classification of dance as Physical Education (PE). As a result of this classification, dance cannot be experienced as an art form, as the curriculum places direct emphasis on learning and education rather than relishing the creativity of children through artistic dance. Although some secondary school curricula places dance within performing arts, emphasis is still placed on learning through expression. Dance is given little recognition as unlike medicine you cannot see the immediate results (The Arts Council, 2010).

Even though dance is becoming increasingly popular within schools there is inadequate research encompassing its importance within education (Lowden, 1989). Dance is still given little recognition as an art form, as it is placed within the PE section of the curriculum.

Methodology

Research Approach

When deciding a research approach it is important to look at the situation and the circumstances in order to decide (Greig et al, 2007). Case studies are particularly appropriate for individual researchers as it gives the opportunity for one aspect of a problem to be studied in great depth (Bell, 2004). This method is appropriate as it allows dance as an area of the curriculum to be focused on in depth. This section of the curriculum is under researched, so looking at this area in depth could prove beneficial. With a limited timescale, the case study is the most appropriate method for investigating dance programmes.

Research Setting

The study focus was within a mainstream primary school in the West Midlands. The setting was an average sized primary school with a total of 280 pupils registered, 38 of these pupils participated in this study. Within this suburban school, and at the time of data collection, the majority of pupils were white British (90%) and the remainder were classified as from a range of minority ethnic backgrounds (10%). The percentage eligible for free school meals was below average compared with most schools (6%). During the latest Ofsted inspection (2010) 'outstanding' judgements were made

of the setting. All observations took place within the school hall and the interviews commenced in any available classroom.

Study Participants

Purposive selection of the sample was used for this study resulting in participants being chosen fairly and appropriately. The participants involved were members of afterschool dance classes as well as those who participate in dance as part of the curriculum. Cohort one were the children that participate in dance as part the curriculum. Cohort two were the children who participate in afterschool dance. Cohort one consisted of 25 year six children. Cohort two were 13 children of a mixed age range from reception to year five. Both cohorts originally comprised 72 pupils, however consent was not returned from this entire amount reducing the sample size to 38. It was not practical to interview all these participants, therefore all participants completed a questionnaire while a subsample were identified for an interview. In response to the questionnaire four children (2 male, 2 female) were randomly selected from cohort one and three children (1 male, 2 female) were chosen from cohort two (due to the return of consent and questionnaires). It is important to gain the opinions of those children who have to participate and those who have chosen to. All 38 children had an equal chance of being selected. However this equal chance did not support a varied sample resulting in unreliable and invalid findings. It is likely that more females attend afterschool dance classes opposed to males. So the males in the group were picked purposely in order to create more than just a female opinion. This particular study also consisted of two teacher participants. One teacher from the afterschool club and another who teaches dance within the PE curriculum, this particular teacher was also the PE co-ordinator.

Methods of data collection

Though observations and interviews are most frequently used within a case study no method is excluded and so questionnaires and focus groups were also used. These methods of collecting information were selected because they are appropriate to answer the research title and subsidiary questions.

Questionnaire

The questionnaire technique was used to identify benefits and barriers of dance, which is the first key question. The idea of formulating precise questions for those whose opinions are of interest seems an obvious strategy for finding the answers

to the issues in the study (Blaxter et al, 2001). However, it is important to be aware of the limitations of questionnaires, as the main drawback is the poor response rate (Cohen et al, 2007). In order to prevent any further difficulties with the questionnaires, a pilot copy was handed out. Through the completion of a pilot questionnaire it was found that some of the questions were difficult to understand by children of this age and so they were reinterpreted to be appropriate for the children. Questionnaires are generally anonymous but in order to be able to select the participants on the basis of their questionnaire responses a name space was provided, but it was optional to participants if they wished to remain anonymous.

Interviews

Focus group interviews commenced with the chosen children as a result of the questionnaire findings to further analyse their thoughts and opinions as to why dance is important to them, allowing them to voice their opinions. Participants may prefer to be in the company of others, which acts as an advantage as only two interviews were conducted with the children instead of seven individually. Four children (2 male, 2 female) were chosen from cohort one and three children (1 male, 2 female) from cohort two. This type of interview placed particular value on the interaction within the group as a means for eliciting information, rather than just collecting an individual's view (Denscombe, 1998). The focus group interview was semi-structured so that the interviews have a specific direction and achieve the aims of the study. This means that preset questions are taken into the interview. Semi-structured interviews provide space to interpret the answers and room for any further questions.

Semi-structured interviews were also conducted with the dance teacher and the class teacher (who was also the PE co-ordinator). The reasons for these interviews were to look specifically at what benefits and barriers teachers think dance has for children, what difference is made by having the programme in place (implications), by whom the programme was initiated and what strategies have enabled them to be incorporated.

Observations

The observations in this study took place alongside the questionnaire and interview techniques as a separate method of data collection. Holistic observations took place looking at the whole class to identify any benefits, barriers, implications or strategies. Checklist and narrative observations were used as they can be adapted to the importance of dance.

The physical setting, the human setting and the interactional setting were all observed. Four observations were conducted with cohort one (lasting an hour and a half) and six observations with cohort two (lasting an hour). The only key question unable to be answered through observations is how the programme was initiated? This was answered through the teacher interviews. Both checklist and narrative observations were recorded manually using a pen and paper.

Observations, interviews and questionnaires are advantageous when used together. Each method can be used to complement each other as in this study (Denscombe, 1998). Triangulation is where more than two methods are used. Meaning three perspectives are identified on given phenomena (Greig et al, 2007). This multi-method approach is advantageous, as a single method provides only a limited view of the complexity of human behaviour (Cohen et al, 2007).

Ethical Considerations

In this study written informed consent was gained from parents identifying that they were fully informed of the research in order to give their consent. Informed verbal consent was also gained from children to diffuse any confusion or complications. Dissemination of the findings was arranged with the setting when the report was completed. A debrief was offered to all participants.

Findings and Analysis

Through three rounds of analysing the qualitative data several themes became apparent within the first subsidiary question. This question collated the most information and was broken down into further themes. Firstly the question was split into two, in terms of its benefits and barriers, themes then arose within each part. The main themes that arose from these findings are; dance as an art form and child development. Child development being such a broad topic was narrowly focused on emotional development, social development and physical development.

The barriers of dance proved more difficult to research as clearly the benefits outweigh them, and do not deter participation (The Arts Council, 2010). Through careful consideration and in-depth analysis of the children's perceptions and the teachers' ideologies three themes arose; stress, gender issues and problems with the curriculum.

A third and final theme also emerged through analysing the findings. Afterschool versus the curriculum was chosen as the final theme as it incorporates the second and third subsidiary questions. Figure 1 is used later on to present the differences between the curriculum class and the afterschool dance programme.

Benefits of Dance Programmes and Dance as an art form

When the professional participants were interviewed, they all interestingly had slightly different opinions as to the classification of dance as an art form. The dance teacher strongly believed dance is art, agreeing with Bloomfield (2007) who identified dance is an art form which uses the body as an instrument for expression. This came through the dance teachers underlying discourse as to the role dance plays in schools. The class teacher from the study however believed dance had elements of both PE and art. This teacher proceeded to place more emphasis on dance as PE she implied: "although dance has elements of art, it should be placed within the PE segment as this is where it is placed within the curriculum", concurring with Hawker (2004) who basically defined dance as a series of steps or movement. As previously mentioned this teacher is also the PE co-ordinator. This may present a biased view as to her particular role.

This research clearly identifies dance as the art form applicable to the benefits. Aside from child development, the other aspects were due to the art form of dance not the physical activity. For example, Child A (in the afterschool focus group) identified dance was her "favourite thing to do", not purely due to the physical repercussions. Underdown (2007) placed emphasis on holistic health. Health is not purely based on the physical being, but the social, emotional and mental state also. Dance offers opportunity to promote these states along with the physical advantages. Happiness is also a consequence of good health (Underdown, 2007). Although happiness is associated with well-being, those who feel healthy will also feel happier. Only 38.7% of the sample however felt happy as a result of dancing (identified through table 1). But 80.6% felt healthier because of dance. This should suggest not all the children felt happy as a consequence of health. Otherwise 80.6% would feel happy as a result of dancing. However, when 'does dance make you feel healthy?' is asked to children the answer yes may be given instinctively. Interestingly Underdown (2007) also identified children do not fully understand the health implications of physical activity, believing this to be true suggests an instinctive answer was given. Bloomfield (2007) identified

the relationship between artistry and health as symbiotic which may be the reason for this instinctive answer. This could be the reason for the high percentage of those feeling healthy due to dance.

Table 1: Children's perceptions in regards to the benefits of dance

	Yes	Sometimes	A little	No
Percentage of children who enjoyed dance at school	74.2%	25.8%	0%	0%
Percentage of children who thought dance was important at school	45.2%	54.8%	0%	0%
Percentage of children who felt happy because of dance	38.7%	48.4%	12.9%	0%
Percentage of children who thought dance improved their school work	35.5%	48.4%	12.9%	3.2%
Percentage of children who felt healthy because of dance	80.6%	19.4%	0%	0%

The percentage represents the total of the entire sample (who returned consent and questionnaires)

Child Development and Social and Emotional Development

Bergstein-Dow (2010) identified many aspects of social development including: listening, responding to directions, offering suggestions and exploring ideas while waiting for a turn. Dance observed in the study incorporated all these factors, as the class teacher identified in her interview; working in groups allows socialisation through talking, interacting and creating together. 74% of children within the curriculum class

identified having 15-30 friends in the group, which suggests social interactions were high. Although dance can foster social development, it was not proved through this research that dance was the reason for these friendships. When the children were questioned about their responses in the focus group they identified the friendships had been made through other activities in school. However, Child B (in the curriculum focus group) identified how his friendships had improved through the dance programme; "I get to work with people I never have done before". Child D on the other hand, identified that she would still avoid people in the class she did not want to work with. So, social development was not necessarily of great improvement for all children.

The afterschool dance class however offered more opportunity for social development as not only were the children working with different children from their year group; they were working with children from different years. Concurring with Sandal and Johnson (1987) who identified the intervention and use of dance helps individuals learn about and develop their social interactions with others. Child B from the afterschool focus group emphasised this through identifying 'special friends' in the group he would not have had usually. The older children in the class were often used as role models and the younger children relied on them for help and support (Observation 5).

In terms of emotional development, one child in the focus group (Child C) identified how expressing herself through dance made her feel happy (linking back to happiness and health). Child A however said he was happy because the class was fun, not because it gave him the chance to express himself, which Bergstein-Dow (2010) identified, as some children find an outlet in movement, but not all children do. Child C obviously enjoys the opportunity to express emotions and become aware of herself through movement.

Physical Development

Physical development of children is increasingly becoming part of the government's agenda especially with the rise in obesity levels (Bradshaw and Mayhew, 2005). As Britain has a poor rate of childhood obesity it was interesting to see if the children believed dance affected their weight. Only one child had emphasised weight loss on the questionnaire as an outcome of the dance programme. This percentage is considerably low compared with children who believed their health had improved as an

outcome of dance (80.6%). Even though the government's agenda is to improve weight loss, children did not see this as priority; most children placed emphasis on their health and the enjoyment of the class rather than the physical effects on their weight. Child A in the curriculum focus group however identified that if they did not dance they would be "fat". It was interesting to see the proportion of children who mentioned weight loss especially as it is of prime importance within the government (Holyoake and Reyner, 2005).

Although Bergstein-Dow (2010) presented many physical benefits of dance including; control, agility, co-ordination, flexibility, confidence, balance, stamina and strength. The main physical benefits found in the study were control, co-ordination and spatial awareness. One particular activity the children did in the afterschool group identified control, speed and rhythm. The children were sat on two benches parallel to each other and the dance teacher was stood at the front. The dance teacher instructed the children to copy the routine she was about to do, which co-ordinated feet stamping (which created the rhythm) with fist pumps on their thighs, then extending the arms to either side, finishing with stand-up, sit-down (keeping to the speed of their rhythm) ready to start again. The children coped well with this activity and kept in time to the rhythm which they created, teaching them about control and co-ordination. Children learn to control their bodies while participating in dance, they are also aware of how fast they are moving, how to speed up, slow down, stop and start (according to Bergstein-Dow, 2010). Within the curriculum class (where the children were older) there was less sign of control. Some of the children were not controlling the speed to which they activated the movements, making it seem like they were rushing. These particular children were then out of time with the music which pushed the whole performance out of sync. Without intervention from the teacher the children would have struggled to bring the movements back in time (Observation 7). However, this routine was very challenging as it was a Bollywood style dance. This particular group showed greater signs of co-ordination even though the movements were not as controlled (this maybe due to the style of dance). Some of the children in the afterschool group had difficulty co-ordinating opposite arm to leg but this group were younger than the curriculum class (Observation 5). Both groups however occasionally presented difficulty with spatial awareness, especially when moving to different positions. No matter what their age, there are physical challenges for some children and benefits for others, contradicting Quin et al (2007) who believed dance had physical benefits for all.

Barriers dance programmes could create

Stress

All physical activity induces tensions according to Krietler and Krietler(1972). Through looking at Rohleder et al's (2007) research it became apparent that some children find dancing stressful. The effects of stress on children can produce minor health implications. However, Ohman et al (2007) identified that stress can have adaptive benefits. Krietler and Krietler (1972) suggested that it is the initial concept of the art which creates stress or tension, but it is then released through the completion of the art. This research found that a small percentage of children do feel stressed from dancing; 12.9% reported they are sometimes stressed and 19.4% claimed they felt a little bit stressed from dancing (see Table 2). When asked about this response in the curriculum focus group interview, Child D identified that she sometimes felt stressed because of performing in front of other people; "I feel stressed when I have to dance in front of others". Observation 10, adapted some of these views as the children were performing for their parents the next day, nerves were starting to arise. Child A however identified dance as his stress release. All children in the focus group were feeling stressed due to the pressures of SATs. Child A thought dance was a way of having fun and relieving stress. The class teacher agreed with Krietler and Krietler (1972) through believing some children can get stressed because of dance, this does not necessarily mean all stress is a negative thing. The class teacher also gave the example (in her interview) of a child who she had previously taught who because he was stressed in the situation stood frozen and still, he would not react to anything. This child was clearly showing signs of stress and did not find his release in dance. For the small percentage of children who did feel stressed, stress can have adaptive benefits (Ohman et al, 2007) so there is no reason for this to act as a deterrent.

Sixteen of the children in the afterschool dance class completed examinations. This was another way which the children could be placed under stress. Through looking at the results the percentages of those who sometimes felt stressed may account for these children who have completed examinations. The dance teacher believed that asking the children to dance individually makes them feel stressed. The observations had not acknowledged anyone performing individually so as to get stressed in that situation. However, through the observations it became apparent that some of the younger children in the group were stressed when they were unable to do what the older children were doing. This is the limitation to having such a varied age group. Observation 5, studied the reaction of the younger children when they could not do leaps across the room. Children were getting frustrated, instead the younger ones persisted to skip or step ball change across the room. Not all children feel stressed by dance as the results show 67.7% did not feel stressed, counteracting this 74.2% of children who enjoyed dance at school (see Table 1).

Table 2: The children's perceptions in regards to the barriers of dance

	Yes	**Sometimes**	**A little**	**No**
Percentage of children who wished they did not have to dance at school	0%	6.5%	12.9%	80.6%
Percentage of children who felt under stress from dancing	0%	12.9%	19.4%	67.7%

The percentage represents the total of the entire sample (who returned consent and questionnaires)

Gender

Dance is generally a stereotyped activity towards female participation. Brinson (1991) identifies this through his perception of the male sex. However, within this compulsory education the males had no choice but to participate. The curriculum group was particularly significant as it was a male dominated year group; there was almost double the number of males to females in the class. Through many of the observations the boys seemed less enthusiastic to participate. However the class teacher did not differentiate between the males and females in the group, she suggested it depended on the year group but the girls in this year group are not particularly "arts minded". On the other hand, she has noticed a difference with previous year groups.

Gender was one of the most obvious differences between curricular lessons and the afterschool club. The afterschool club only had four male participants; these children had chosen to be there rather than participating in a compulsory element of the curriculum. Supporting Quin et al's (2007) views that dance is a female dominated activity. The dance teacher saw a huge difference between males and females in her group; she claimed the males were less focused. But in terms of their ability she did not see a difference. This was obvious within the observations, all children whether male or female were enjoying the class just as much (Observation 1).
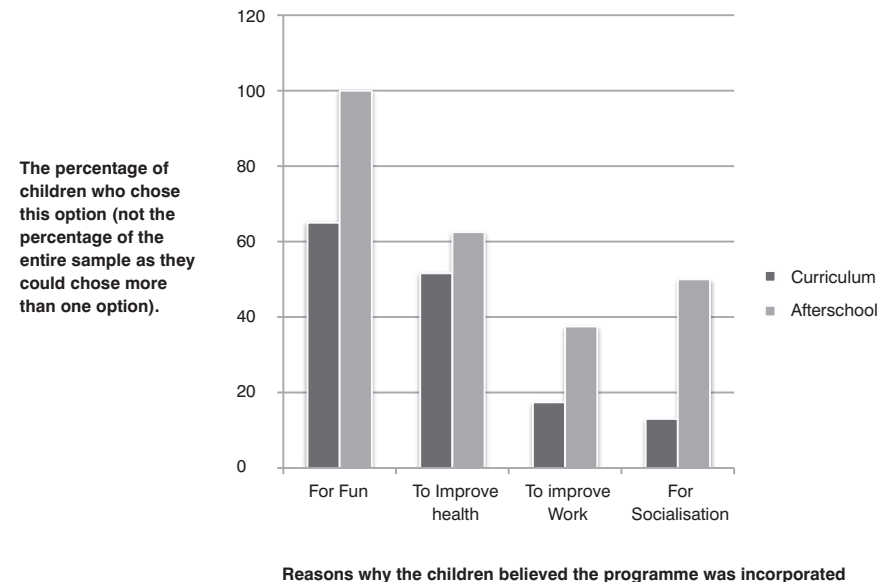
Curriculum

The National Curriculum can act as a barrier to dance, due to its classification as PE. This means dance is not experienced as an art form giving it little recognition (Burn and Harrison, 2009). As the curriculum is so structured and the school timetable is demanding with emphasis being placed on education little time is spent on physical activity such as dance. When looking back at table one over half of the sample (54.8%) saw dance as only 'sometimes' important. When interviewing the curriculum group, Child D believed; dance is only "a little bit important" as her school work was imperative. The little recognition that dance is given was evident with the cancellation of dance lessons due to other academic arrangements showing dance was not top priority as other arrangements were scheduled during this time. Other schedules also affected the afterschool group as it meant the class had to finish early on certain occasions and the hall had to be rearranged frequently before it could even be used. Although curriculum arrangements cannot be avoided, promoting the benefits of dance along with many other physical activities may place them higher on the agenda.

Afterschool Versus the Curriculum

The original focus of the study changed slightly, as the managerial aspects as to why the programme was integrated were difficult to identify using the selected sample and methods. However, some interesting findings were found when looking at the difference between dance in the curriculum and dance as an afterschool activity (see figure 1). Key questions two and three were still incorporated as part of this final theme.

Figure 1: A Children's perceptions in regards to why they believed the programme was initiated

The percentage of children who chose this option (not the percentage of the entire sample as they could chose more than one option).

Reasons why the children believed the programme was incorporated

Incorporation of dance programmes

The suspected reason for the incorporation of dance programmes originally was government initiatives (Department of Health, 2010). This view was untrue for dance within the curriculum and dance afterschool, and was even further away from the view of the children. Figure 1 represents children in the participating sample from afterschool and within the curriculum. The children believed dance was incorporated mostly because it was fun which was believed by both cohorts. However through interviewing the dance teacher and class teacher they presented different views. The afterschool club was originally incorporated due to social connections between the dance teacher and the head teacher, the programme expanded from there. The new and current head teacher kept the programme because he valued the benefits it had for the children. Dance within school has always been incorporated due to the National Curriculum and it being compulsory within PE (Lowden, 1989). Although the government introduced the National Curriculum, further initiatives (such as Achieving Great Art for Everyone,

the Arts Council 2010) have encouraged physical activity but have not, according to the class teacher, affected the incorporation of dance programmes.

The main difference between in school and afterschool dance is the choice children have. The children in the afterschool club have chosen to be there, dance within the curriculum does not allow choice, it is primarily because PE is compulsory (Ashley, 2008). Payment also forms a big part of afterschool dance. Not only does the dance teacher have to pay to use the facilities, this means the children have to pay to attend the class, which can act as a barrier to equal opportunities for all as not everyone can afford to attend (BBC News, 2010). Dance UK (2006) believe dance should be available and affordable to everyone.

Strategies that have enabled dance programmes to be incorporated

In terms of the afterschool dance club, willing parents have allowed the programme to be incorporated. Without support from parents the programme would not be incorporated as there would be no funding. Without a qualified and willing dance teacher this may deter the incorporation of these programmes as there would not be anyone to provide the class.

Willing parents also help support dance within the curriculum, with costumes and acting as an audience for children. But this does not rely on funds as dance is free in school. The teachers have played a role in incorporation as without their willingness and confidence there would be no one to head the class (Smith and Pocknell, 2007).

Although dance within the curriculum can be inclusive of every child's needs the constraining targets leaves little for interpretation. Children do not get the freedom of choice when it comes to a style of dance as the boundaries of the curriculum keep them confined. Afterschool dance clubs however allow room for choice and interpretation, unfortunately most clubs rely on funding so these services are not universally accessible (BBC News, 2010).

Dance should be considered as an art form, not as a physical activity (Bloomfield, 2007). Dance as an art form can have considerable benefits on health and development

(physical, social and emotional) (The Arts Council, 2010). However, not all of these benefits are applicable to each and every child. This is why the benefits of dance should not be disregarded and dance should be given higher status. However, higher status would be difficult as very few professionals are aware of the benefits. As Bergstein-Dow (2010) identifies teachers are less familiar with dance than any other form of art. With little knowledge it is difficult to understand the benefits dance can have for everyone not only children. More needs to be done to raise the awareness of dance as the barriers (stress, gender and curriculum) do not act as a deterrent and so should be emphasised on the basis of its benefits.

Conclusion

There is a need for a broad and vital understanding of dance within our society but unfortunately such understanding is absent. Primary schools in the West Midlands may limit the potential of dance the art form, through classifying it merely as a physical activity. The PE co-ordinator in this study, believed dance best fit within PE as this is where it is situated within the curriculum. In order to have a broad and vital understanding of dance, it needs to be understood as more than physical activity as in this found study it is the art form which creates the benefits not purely the physical activity.

This study identified dance can have considerable benefits on child development (physical, social and emotional) whether within the curriculum or an afterschool activity. The children in this study identified how dance made them feel happier, healthier and it gave them the opportunity to work with children they would not usually. This is why dance should not be disregarded as a frivolous activity with no educational merit.

Although dance does have some barriers, (stress, gender and the curriculum) these would not discourage participation. As found evident in this study, children can find dancing stressful but this can have adaptive benefits, and some children use dance as their stress release. Also, these stereotypical gender issues could be easily overcome with more enthusiasm. Lastly, although the curriculum issues cannot be avoided promoting the benefits of dance would place it higher on the agenda. Dance cannot currently be regarded with higher status as many professionals do not fully understand the implications of dance within the curriculum. Teachers need to have clarity of

thinking about the contribution dance makes to the curriculum in order to achieve good practice. Not all educators implement dance effectively as few have the correct training.

As with all research this study had its limitations. Response rate was the biggest limitation to this study. Although 38 participants were recruited only 13 of these participants were from cohort two. Opportunistically the class teacher was able to complete the questionnaire in school time (with those children who had returned consent) which meant 23 out of the 25 participants from cohort one had returned their questionnaires. However, the afterschool children could not complete the questionnaire as efficiently, as there was not enough time during the afterschool programme. Unfortunately these children were instructed to take the questionnaires home to complete them and then return to school. This issue is not that one cohort was larger than the other but that cohort two consisted of only 13 participants and therefore the data cannot be generalised.

As this was a small case study looking at the benefits and barriers of dance, this limited the amount of benefits and barriers focused on in depth. Therefore future recommendations can be taken from this study for further research. Firstly it would be interesting to look at the affect dance can have on children's work academically, as there are such differing opinions as to whether this was a benefit or a barrier when having dance programmes in school. This would require a broader study, not just observing the dance programme itself but looking at other academic lessons. This would also be interesting if the classes academic results were studied before the integration of a dance programme and then after. Further study of male participation in dance would also be interesting as it was seen as a barrier in this particular study. This study proved difficulty with certain styles of dance and boys participation. If the boys were participating in a style they were interested in (Street Dance, as mentioned in focus group interview) would the research have created different outcomes? A final recommendation for future research could be to look at the benefits of dance for children with special needs, specifically looking at the benefits for them, how they cope in a class like this and whether they would participate if they did not have to. This would also provide some interesting and beneficial research.

Although the importance of dance has been debated for many years, this research suggests dance provides adaptable benefits and so its importance should not be

overlooked. Dance should be promoted as an integral part of education for everyone. Overall this case study did evaluate the integration of dance programmes for children within a mainstream primary school in the West Midlands. Dance does have benefits for everyone; these results would be useful for other schools in the United Kingdom.

REFERENCES

Ashley, L. (2008) *Essential Guide to Dance*. 3rd Edition. London: Hodder and Stoughton.

BBC News (2010) *Parents' After-school Activity Cost Worry* [Online] Available at:http://www.bbc.co.uk/news/uk-wales-11120231 [Accessed: 11th February 2011].

Bell, J. (2004) *Doing your Research Project, A Guide for First Time Researching in Education and Social Science.* 3rd Edition. Berkshire: Open University Press.

Bergstein-Dow, C. (2010)'Young Children and Movement: The Power of Creative Dance'. *Young People,* March 2010. pp30-35.

Blaxter, L., Hughes, C., and Tight, M. (2001) *How to Research.* 2nd Edition. Maidenhead: Open University Press.

Bloomfield, A. (2007) 'Health or Art? The Case for Dance in the Curriculum of British State Schools 1909-1919' *History of Education,* Vol. 36, November, pp681-696.

Bradshaw, J. and Mayhew, E. (2005) *The Well Being of Children in the UK.* 2nd Edition. London: Save the Children.

Brinson, P. (1991) *Dance as Education: Towards a National Dance Culture.* London: The Falmer Press.

Burn, S. and Harrison, S. (2009) *Dance Mapping: A Window on Dance 2004-2008.* The Arts Council England. [Online] available at: http://www.artscouncil.org.uk/media/uploads/publications/dance_mapping_full_report.pdf [Accessed: 29th January 2011].

Cohen, L., Manion, L. and Morrison, K. (2007) *Research Methods in Education.* 6th Edition. London: Routledge.

Dance UK (2006) *Dance Facts.* [Online] Available at: www.danceuk.org/metadot/index.pl?id=225529 [Accessed: 3rd May 2010].

Denscombe, M. (1998) *The Good Research* Guide for Small-scale Social Research Projects. Buckingham: Open University Press.

Department of Health (2010) *Next steps for Healthy Start.* [Online] Available at:http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_120297.pdf [Accessed: 10th March 2011].

Dito, K. (2001) *'Why Teach Creative Dance?'* [Online] Available at: www.suite101.com/article.cfm/dance_stage_beyond/57796/2

Ferguson, O.D. (1997) 'The Dance of Meaning, the Meaning of Dance'. *Independent school;* Winter 97, Vol. 56 Issue 2, p42.

Greig, A.,Taylor, J., and Mckay,T. (2007) *Doing Research with Children*. 2nd Edition. London: Sage Publications.

Hawker, S (2004) *Pocket Oxford Dictionary, Thesaurus and Wordpower Guide.* Oxford: Oxford University Press.

Holyoake, D.D. and Reyner, C. (2005) 'Moving Body and Mind: A Nurse Led Dance Group for Young People with a Mental Illness'. *Paediatric Nursing;* Volume 17 no. 4. pp36-39.

Krietler, H. and Kreitler, S. (1972) *Psychology of the Arts.* Durham NC: Duke University Press.

Lowden, M. (1989) *Dancing to Learn.* New York: The Falmer Press.

Mennesson, C. (2009) 'Being a Man in Dance: Socialization Modes and Gender Identities'. *Sport in Society.* Vol. 12, No. 2, March 2009. pp174–195.

McKittrick, D. (1972) *Dance.* London: Macmillan Education.

Ohman, L., Bergdahl, J., Nyberg, L. and Nilsson, L.G. (2007) 'Longitudinal Analysis of the Relation Between Moderate Long-Term Stress and Health'. *Stress and Health: Journal of the International Society for the Investigation of Stress* Vol.23 Issue 2, p131.

Quin, E., Redding, E. and Frazer, L. (2007) *Dance Science Research Report*. Hampshire Dance and Laban.

Rohleder, N., Beulen, S.E., Chen, E., Wolf, J.M., Kirschbaum, C. (2007) 'Stress on the Dance Floor: The Cortisol Stress Response to Social-Evaluative Threat in Competitive Ballroom Dancers'. *Personality and Social Psychology Bulletin,* Vol 33(1), pp69-84.

Sandal, S.L. and Johnson, D.R. (1987) *Waiting at the Gate: Creativity and Hope in the Nursing Home.* New York: The Haworth Press.

Smith, F. and Pocknell, L. (2007) *A Practical Guide to Teaching Dance.* Association of Physical Education. National Dance Teachers' Association. Leeds: Coachwise Business Solution.

The Arts Council (2010) *'Achieving Great Art for Everyone: A strategic Framework for the Arts'.* Gavin Martin Colournet Ltd.

Underdown, A. (2007) *Young Children's Health and Wellbeing.* New York: Open University Press.

The effects of plyometric training compared to complex training on physiological performance

Nick Mohammed

ABSTRACT

The purpose of the present study was to explore the effects of 8-week plyometric and complex training programmes on a number of performance parameters including: body fat (BF), vertical jump height (VJ), peak power output (PPO), leg and trunk strength (LT), peak velocity (PV) and acceleration (ACC). This study comprised of two training groups: a plyometric ($n = 5$) and a complex ($n = 6$) training group. A number of anthropometric (height, body mass, BF) and physiological variables (VJ, PPO, PV, LT, ACC) were measured at different time points in the training period. Data were analysed using repeated measures analysis of variance (ANOVA). Compared to the pre-training values there were statistically significant improvements in LT ($p = .018$), PPO ($p = .019$), PV ($p<.001$) and ACC ($p = .026$) across both training groups. No changes in VJ and BF were found. Future studies employing larger sample sizes (to increase statistical power) and randomised controlled designs are advocated. Furthermore, studies examining the effects of different types of complex training on physiological performance as well as longitudinal studies related to these training modes are required.

KEYWORDS

Plyometrics, Complex Training, Acceleration, Power.

Introduction

As modern sport becomes more competitive, the demand for athletes to perform to the best of their ability is increasing. In an attempt to develop a training programme that will maximise an athlete's ability to perform, strength and conditioning professionals are now using complex training methods in unison with the athlete's sport-specific training drills to maximise performance in competition. Although research in this area has become increasingly popular, the optimal training protocol remains elusive to many as each individual athlete is unique (Jensen and Ebben, 2007).

Plyometrics is a training concept which originated in Russia around the 1950s when Yuri Verkhoshansky, known worldwide as the founder of the acclaimed 'shock method', created a series of exercises known as depth jumps (Verkhoshansky and Siff, 2009). Plyometric activities include jumping, hopping or bounding movements which constitute a natural part of movements required for most sports (Chelly et al., 2010). The specific characteristics of the shock method describe the neuromuscular system being forced to display a high level of power against a significant external mechanical influence. The purpose of plyometric exercise is to increase the power of subsequent movements by using both the natural elastic components of muscle and tendons and the stretch reflex. To effectively use plyometrics as part of a training program it is important to understand: (1) stretch reflex, (2) stretch shortening cycle and (3) post-activation potentiation. This affords strength and conditioning professionals and the athletes a greater understanding of how human movement occurs and more importantly how it is enhanced (Komi and Ishikawa, 2009).

The stretch reflex describes the naturally occurring safety mechanism in the human system, which protects the muscle from injuries likely to appear when the muscle is stretched too far or too quickly (Ishikawa and Komi, 2007). During plyometric movements the muscle spindles are stimulated by a rapid stretch causing a reflexive action. This response potentiates (enhances) the activity of the agonist (working) muscle which precedes an increased muscle force production (Cormie et al., 2011a; 2011b).

The stretch shortening cycle (SSC) employs the energy storage capabilities of the series elastic component (SEC) of the muscle and stimulation of the stretch reflex to facilitate a maximal increase in muscle fibre recruitment and subsequent excitation (Turner and Jeffreys, 2010). The stretch shortening cycle describes an eccentric (stretch) followed by an isometric transitional period (amortisation phase), leading to an explosive concentric action (Ball and Scurr, 2009). Perhaps the most crucial phase of the SSC is the amortisation phase. Its duration must be kept short. If this phase is too long, then the energy is wasted (dissipates as heat) and the stretch reflex will not enhance muscle activity during the subsequent concentric contraction (Ball and Scurr, 2009).

The SSC and naturally occurring stretch reflex are synonymous with plyometrics and can be used to explain the phenomenon of increased jump height as a result of increased loading during the countermovement (Moir et al., 2011). Specific plyometric

exercises can be used to train the slow or fast SSCs. The fast SSC is characterised by short contraction times (<0.25s), small angular displacements and can be observed in activities like depth jumping while the slow SSC involves longer contraction times, larger angular displacements and is observed in countermovement jumps (Turner and Jeffreys, 2010). For speed and strength increment, the optimisation of fast SSC is paramount (Flanagan and Comyns, 2008) and appropriate plyometric training programmes have been shown throughout the literature to increase running velocity, running economy, proving beneficial to endurance runners as well as sprinters (Brughelli et al., 2011). It has also been shown that the faster the muscle is eccentrically stretched the greater the force will be on the following concentric contraction (Turner and Jeffreys, 2010).

Post activation potentiation (PAP) considers a phenomenon which acutely enhances muscular performance characteristics as a result of their contractile history (Tillin and Bishop, 2009). PAP is induced by a voluntary contraction performed typically at a maximal or near–maximal intensity (Hodgson et al., 2005). PAP can be harnessed to enhance sprint performance; providing adequate and individualised recovery is given between preload stimulus and subsequent performance (Salaj and Markovic, 2011). There are two theories proposed to explain this mechanism. Firstly, the preload enhances motor unit excitability possibly increasing recruitment and synchronisation of muscle fibres, decreasing pre–synaptic (nerve) inhibition and increasing central input to the motor neuron (Rainoldi and Gazzoni, 2011). Secondly, the preload causes increases in the sarcoplasmic calcium (Ca+2) within the muscle; which activates the enzyme MLC kinase causing an increment in actin-myosin cross bridging necessary for muscular contraction (Hodgson et al., 2005). If the PAP mechanism is effectively utilised it could be implemented into strength and power training routines to enhance the training stimulus, notably more so in plyometric exercise than other training modes (Docherty and Hodgson, 2007).

Complex training involves the coupling of biomechanically similar exercises performed in an alternating manner and is based upon the premise of performance enhancement via PAP in an attempt to augment the subsequent plyometric movements (Robbins et al., 2010). The main factor to consider before any individual undertakes this form of training is their eccentric strength. Eccentric strength base is considered a necessary prerequisite before any plyometric training is undertaken (Verkhoshansky and Siff,

2009). To develop eccentric strength may require the use of an external load during lowering phases to overload the neural and muscular systems in order to produce slow and controlled movements. The secondary phase of the movement involving the external load is more explosive to maximise the force-velocity relationship, therefore developing muscular power and utilising the potentiating effect of resistance training manoeuvres on subsequent SSC performance (McCann and Flanagan, 2010).

This study aims to explore the effectiveness of plyometric and complex training programmes over a period of eight weeks and examine how key physiological performance components change over the course of each training programme.

Measures and Procedures

Descriptive Statistics

An opportunity sample of 11 sports studies students were recruited for this study. All were required to provide written informed consent and complete a medical history questionnaire prior to participation in the study.

Experimental Design

This study comprised a repeated measures design with a number of physiological and anthropometric measures taken pre, mid-point, end-point and two weeks post training cessation. All testing sessions were conducted on the same day and within a time difference of ± 2 hours. Each training group performed a thorough, standardised warm-up before every training session. The warm up procedures for either group were reflective of the types of activities performed within each session (i.e. the complex group performed static and dynamic stretching protocols with an emphasis on warming the musculature associated with the squat and lunge; the plyometric group had a similar focus however aerobic exercise was performed at the same time as the dynamic exercises). Participants were asked not to change their current training/exercise habits and to avoid resistance exercises which could fatigue the key musculature between sessions.

Anthropometric Variables

The anthropometric measurements taken pre, mid-point, end-point and two weeks post training cessation included height, body mass and percent body fat. Height and body mass were measured using the Leicester height measure (SECA, Birmingham, England)

and SECA 770 scales (Vogel and Halke, Hamburg, Germany) respectively. Percentage body fat (BF) was assessed using Harpenden skinfold callipers (Harpenden Instruments Ltd, England). The Jackson and Pollock (1978) three skinfold site procedure and subsequent equation were used to estimate percent body fat. All measurements were conducted in the presence of a BASES accredited physiologist in accordance with strict laboratory protocols (ACSM, 2009; Acevedo and Starks, 2011).

Physiological Variables

Vertical jump performance

Vertical Jump (VJ) performance including peak velocity (PV) and peak power output (PPO) were assessed using a force platform (Kistler AG Holding, Switzerland) utilising a countermovement jump with arm swing. The countermovement jump was used to maximise the stretch shortening cycle and assess explosive power of the lower extremity muscles. The participants were instructed to land with flexion at the knees and to finish in an upright stance. The best jump height achieved out of the three trials was then recorded in centimetres (cm). The corresponding PPO and PV of this jump were then recorded in watts per kilogram (w/kg) and metres per second (M/S) respectively.

Assessment of strength

Leg and trunk strength (LT) was assessed using a leg and trunk dynamometer (Takei Instruments Ltd, Japan) (Figure 1). Three attempts were performed with the best score recorded for each participant. The correct technique was demonstrated to participants at the start of each testing session to ensure correct form and technique. The result was recorded to the nearest kilogram (kg).

Figure 1. Assessment of leg and trunk strength using leg and trunk dynamometer

Acceleration

Acceleration (ACC) was recorded to within one hundredth of a second (ms) using the photoelectric speed gates (Speed trap 2, Brower Timing Systems, USA). The set-up of this test is illustrated in Figure 2. Acceleration was assessed over a distance of 10m with the fastest of three times being recorded to the nearest 0.01 of a second. Participants were instructed to sprint through the second set of speed gates (using the 2m run through) to record a time. They were then given two minutes rest before the next trial commenced.

Figure 2. Diagrammatic representation of 10m acceleration test
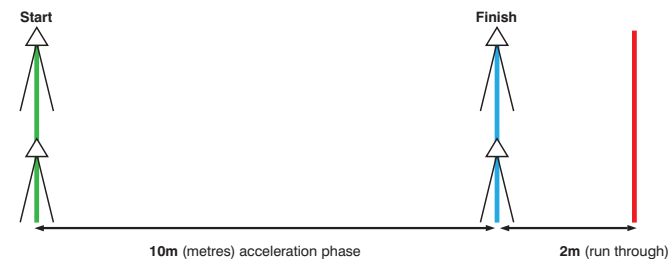
Throughout all testing sessions the participants were instructed to give maximal effort in each test. All testing procedures used for this study were approved by the Institutional Research Ethics Committee.

Training interventions

This study comprised a training mesocycle of eight weeks. As with all athletic training programmes it was important to consider the individual differences to ensure effective work and rest periods. The factors considered included the number of points of contact (single or two footed take off and landings), speed of the exercises, height of the jumps and the athlete's body mass which have been previously suggested as key factors (Gee et al., 2011).

Lower limb force production is a fundamental component of sports-related performance. The squat is one of the most appropriate exercises for this type of evaluation because of the great number of joints and large muscle groups involved, and its similarity to many

athletic movements (Eckhardt et al., 2011). The squat is a versatile exercise and can be executed in different ways; this means that it is a specific evaluation instrument with laboratory results clearly related to field activities (Limonta and Sacchi, 2010). The second weighted exercise used was the lunge because this mimics to some degree the stretch shortening cycle required for running (i.e. acceleration).

The plyometric group warm up exercises changed frequently as the competence of the group developed. The complex group warm up protocol remained relatively unchanged apart from the length of time the stretch was held for.

Plyometric Group Exercises

The plyometric training intervention was completed as a whole group to make efficient use of facilities and equipment. The exercise repetitions were separated by 60 seconds recovery. The rest interval between sets was standardised at three minutes.

Complex Group Exercises

The complex training intervention was completed in pairs. The resistance and plyometric exercises were separated by three minute rest intervals to encourage the potentiating effect of the loaded exercise on the subsequent plyometric movement.

Statistical Analysis

Analysis of the data was conducted using PASW Version 18 (SPSS Inc., Chicago, IL). 4 (testing sessions) x 2 (training groups) way repeated measures ANOVAs were conducted for each of the performance variables to explore differences between the pre (week 1 before), mid-point (week 4), end-point (week 8) and 2 weeks post (week 10) treatments. Bonferroni post hoc tests were used in the case of significant F values. For all comparisons, the statistical significance was set at $p \leq 0.05$. Percentage changes were also calculated for all performance variables from week 1 to week 10.

Results

The physical characteristics of participants across each of the testing sessions are shown in Table I. Repeated measures ANOVA showed that a number of performance variables changed significantly over the ten week period. These are illustrated in Table I as well as

Table I. Physical characteristics (Mean ± SD) of the participants

	N	Age (years)	Height (cm)	Weight (kg)
Males	6	19.70 ± 2.00	175.50 ± 13.00	74.40 ± 20.00
Females	5	20.00 ± 1.00	162.90 ± 7.44	58.43 ± 11.47

Table II. Summary of repeated measures analysis of variance (ANOVA) findings

Performance Variables	Df (Between, Error)	F value	P value	η_p^2 (partial eta)
BF	1, 8	1.92	.206	.215
LT	1, 9	7.236	.018*	.530
VJ	3, 21	1.684	.201	.194
PPO	3, 21	4.131	.019*	.371
PV	3, 21	12.078	.000**	.633
ACC	3, 21	3.768	.026*	.350

 * Value is significant *p <0.05*
** Value is highly significant *p <0.01*

Between group analyses were also carried out to identify if significant differences were observed according to training group. None of the performance variables differed significantly between training groups. The results achieved for BF and VJ showed no statistically significant difference ($p = .206$) and ($p = .201$) respectively.

Figure 3. Mean (± SD) leg and trunk strength across each testing week
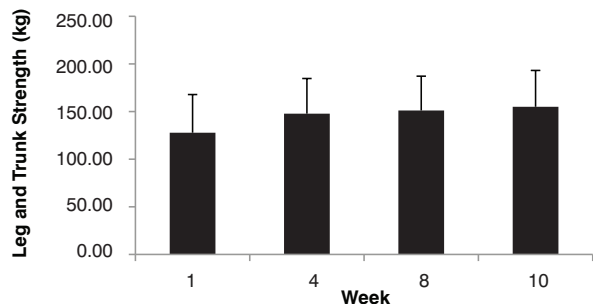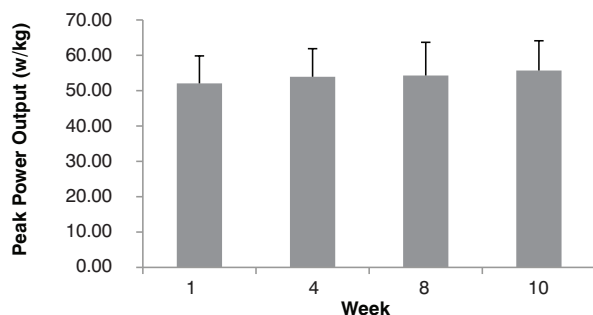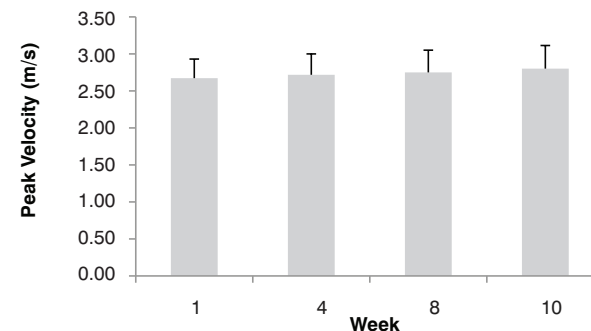

The results achieved for LT showed statistically significant improvement over the ten week period ($p = .018$, Eta2 = .530). The post hoc analysis revealed this difference was significant between week 1 and week 10 ($p = .022$).

Figure 4. Mean (± SD) peak power output across each testing week

The results with respect to PPO revealed a statistically significant improvement over the ten week period ($p = .019$, Eta2 = .371). The mean values suggest that there was progressive improvement over the course of the ten week training period.

Figure 5. Mean (± SD) peak velocity across each testing week

The results for PV showed improvement over the 10 week period ($p <.0001$, Eta2 = .633). The post hoc analysis revealed this difference was significant between week 1 and week 10 ($p = .027$) as well as week 4 and week 10 ($p = .040$).

Figure 6. Mean (± SD) acceleration across each testing week
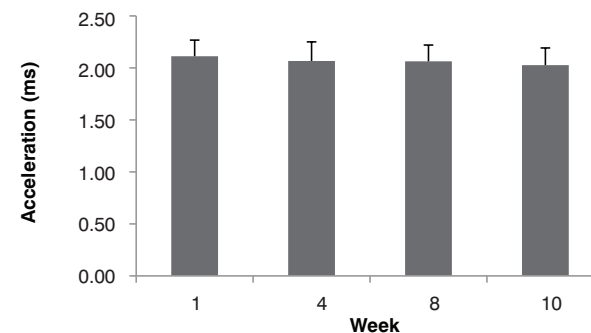
The results achieved for ACC again showed that there was a statistically significant difference over the 10 week period ($p = .026$, Eta2 = .350). The mean values suggest that this improvement was during the initial period of the 10 week training programme.

Percentage Change

The results achieved by the participants of each group were computed to generate percentage change statistics from week 1 to week 10 to show overall performance changes for the plyometric (Table III) and complex (Table IV) training groups.

Table III. Mean (± SD) percentage change in each performance variable in the plyometric training group

Performance Variable	Percentage Change
BF	-18.04 ± 10.81
LT	23.43 ± 19.74
VJ	7.91 ± 1.91
PPO	5.58 ± 6.77
PV	3.36 ± 1.68
ACC	− 1.88 ± 3.33

* the minus (-) symbol denotes a decrease in the performance variable

The results in Table III show a drop in BF and ACC and increases in LT, VJ, PPO and PV for the plyometric group which can all be described as improvements to the respective performance characteristics.

Table IV. Mean (± SD) percentage change in each performance variable in the complex training group

Performance Variable	Percentage Change
BF	-16.79 ± 33.43*
LT	15.10 ± 8.22
VJ	3.89 ± 16.32
PPO	6.78 ± 4.66
PV	4.99 ± 2.82
ACC	− 5.60 ± 4.27*

* the minus (-) symbol denotes a decrease in the performance variable

The results for the complex group (Table IV) show an increase in LT, VJ, PPO and PV and a decrease in BF and ACC. Both training programmes therefore, produced similar results across the performance characteristics. This supports the lack of statistically significant differences between the training groups.

Discussion

There is evidence in the scientific literature which suggests training programmes utilising plyometric exercises or complex training protocols positively affect performance variables such as power production (Beck et al., 2011), jumping performance (Comfort et al., 2011) and speed/acceleration (Hunter et al., 2011). The aims of the present study were to explore the effects of the two training programs on a number of performance parameters.

The results of the current study show that statistically significant improvements can be observed in LT, PPO, PV and ACC performance all of which are displayed in Table II. In addition, changes in PV are shown to be highly significant. Past research cited here differs in terms of design, focus of the programme, participant characteristics and methods of assessing physiological components. The findings must therefore be interpreted with these differences in mind.

Studies on plyometrics and PPO have provided conflicting results as power has been shown to decrease in some studies using a similar training period of 6 to 8 weeks (9-5.2%) and increase in studies of longer duration (2.4-31.3%) (Markovic and Mikulic, 2010). The results of this study found that there was an average increase in peak power output of 5.58% following the 8 week plyometric intervention. Based on the statistical analyses it can be accepted that plyometrics increases peak power (p = .019). The increase in power here may be due to the increments reported in LT (strength) and PV (speed) of movement which are the known determinants of power (Wilson and Flanagan, 2008; Winchester et al., 2008).

Studies exploring the effects of plyometrics on VJ have also demonstrated varied results ranging from improvements of up to 32.5% to decrements ranging from 3% to 3.5% (Markovic and Mikulic, 2010). This study found there was an average increase of 7.91% in VJ performance following the plyometric intervention supporting the majority of previous literature which shows jump increments following similar interventions. Furthermore, the results are realistic because they are less than 30% (Markovic and Mikulic, 2010). It is important to also identify however, that the statistical analysis found no significant differences here.

Plyometrics and ACC studies are limited, although one such study which shared a similar training period of 8 weeks found that sprint-specific plyometrics achieved greater results for initial acceleration (0 – 10m) than traditional sprint training methods (Rimmer and Sleivert, 2000). The results of this study also show improvements in ACC with a 1.88% average decrease in time achieved over the 8 week training period ($p = .026$). It is believed that this improvement was brought about through a combination of improved PV and PPO. Put simply, an increase in power and speed in addition to heightened force generation may have resulted in an enhanced ability to cover the set distance with faster, more powerful strides (Malisoux et al., 2006).

Rimmer and Sleivert (2000) stated the greatest transfer of plyometrics to sprinting is likely to occur during the initial acceleration phase. This theory is supported by Young (1992) who suggests that bounding may be considered a specific exercise for the development of acceleration because of the similar contact times during the initial acceleration phase. The results of this investigation suggest that sports students with active recreational training profiles were able to improve sprint speed, particularly in the initial acceleration phase (0 – 10m) thus supporting the claims of Rimmer and Sleivert (2000). Further research on sprint-specific or team sport samples with additional analysis of ground contact times is advised before these findings can be verified further. However, it appears that the inclusion of plyometrics within the training mesocycle has the potential to improve acceleration performance. Coaches and athletes are advised to err on the side of caution to avoid overtraining and ensure the athletes adhere to strict technique protocols and controlled movements set out by past authors (Verkhoshansky and Siff, 2009; Potach and Chu, 2008; Pire, 2006) to ensure similar results.

The combination of weight training and plyometric exercise used in succession is known as complex training. There are fewer studies available which pertain to this mode of training in comparison to plyometrics alone. The studies available however, suggest that participating in a complex protocol has a greater potential to increase maximal power (Villarreal et al., 2010). A review of published studies was conducted by Markovic and Mikulic (2010) who found improvements ranging from 2-37%. Suggestions as to the mechanisms of these improvements include muscle hypertrophy, increased neural drive to agonist muscles and inhibition of antagonist muscles (Markovic and Mikulic, 2010).

The results of this study show a 6.78% improvement in power output following the complex training intervention. It is assumed by the researcher that improvements were derived either as a result of increased leg and trunk strength and peak velocity ($p = .018$ and $p < .001$ respectively). It can be accepted therefore, that power improves as a result of complex training. It is recognised by many authors that this results from plyometric and complex protocols alike (Alves et al., 2010; Zech et al., 2010) regardless of gender (Myer et al., 2005) but is influenced by previous training status (Tillin et al., 2010). Each of these require further investigation.

Complex training has been shown in previous studies to have an ergogenic effect on subsequent jump performance (Ebben, 2002) and a greater impact than plyometrics alone. In particular, countermovement jump with arm swing on average was improved by 7.8% compared to plyometrics which led to a 6.9% improvement (Kubo et al., 2007). The results of this study show an average increase of 3.89% on VJ performance following complex training. This supports the claims from previous research that VJ will be improved as a result of a complex training. Although no between group differences were found the result appears to reject the hypothesis of greater improvement than the plyometric protocol (+7.91% ± 1.91%).

The greatest effects of plyometrics on sprint performance are proposed to occur in the acceleration phase due in part to the fact that bounding activities closely resemble the muscle velocities occurring during the acceleration phase of a sprint (McBride et al., 2009). The increased potential of complex training to augment fast SSC (Flanagan and Comyns, 2008) movements is expected to have additional benefits when applied to ACC performance. Previous research has observed a 2.2% improvement in 10m sprint performance with plyometrics and when combined with weight training improvements are found in the range of 0.2 to 3% over a 6 - 12 week training period (Markovic and Mikulic, 2010). The results of this study show an improvement in 10m acceleration (1.88%). This is noteworthy as to be successful in many team sports requires good initial acceleration (Brechue et al., 2010). Statistical analyses on acceleration and the complex training protocol allows the researcher to accept that performance improves due to participation in this training protocol ($p = .026$). As previously mentioned, the results of the between groups analyses showed there was no significant difference achieved. Therefore, both training modes led to improved acceleration.

In general, studies conducted on either plyometric or complex interventions have found no effects on body fat distribution. The results of this study were not statistically significant despite a percentage decrease (Tables III and IV) in overall body fat.

In summary, the results of this study show improvements in many of the physiological variables including power ($p = .019$), acceleration ($p = .026$), leg and trunk strength ($p = .018$) and peak velocity ($p < .001$). VJ and BF remained unchanged regardless of the training group. The results of this study also show how sprint-specific plyometrics can be successful in bringing about improvements in sprint performance over short distances (i.e. 0 – 10m). This is reinforced by the changes in peak power, strength and speed of movement. It also implies that the sprint-specific exercises chosen for both groups caused alterations to the performance variables corresponding to sprinting rather than jumping. This can be explained by the differences known to exist in the kinematics of sprinting (Harrison et al., 2004) as opposed to the kinematics of jumping (Kubo et al., 2007) and the respective movement patterns and neuromuscular pathway differences.

Conclusion

The results of this study show that inclusion of sprint-specific plyometrics within the training mesocycle has the potential to improve related performance variables. It is apparent from the range of results here that there is still much to learn about plyometrics and complex training modes and their effects on performance. The prolonged nature of these studies makes it very difficult to account for all of the changes observed. The optimal training protocol however, still remains elusive to the strength and conditioning profession (Jensen and Ebben, 2007).

From the results of this study it would appear that a training period of 8 weeks appears to be sufficient duration for changes to occur in PPO, VJ and ACC in either training group. Reasons why this may be observed are based on the theory of training: that the greatest performance gains are made within the first few weeks as a result of neuromuscular adaptations such as antagonist inhibition and improved motor unit synchronisation (Rainoldi and Gazzoni, 2011). Future researchers should examine the effects of different types of complex training on physiological performance. Different loaded exercises, potentiation periods (time between exercises) as well as upper body plyometric training

methods all need further investigation. There is also a paucity of longitudinal studies as well as studies on larger sample sizes. Finally, studies focusing on the manifestation of differences between slow and fast SSC exercises on performance are also needed to help determine which type of SSC exercises are most effective in improving the performance variables explored in this study. Studies of this nature will undoubtedly extend the knowledge base pertaining to these current training methods.

REFERENCES

Acevedo, E.O., and Starks, M.A. (2011) *Exercise Testing and Prescription Lab Manual,* 2nd Edition. Champaign, IL: Human Kinetics.

Alves, J.M.V.M., Rebelo, A.N., Abrantes, C., and Sampaio, J. (2010) 'Short-term effects of complex and contrast training in soccer player's vertical jump, sprint, and agility abilities'. *Journal of Strength and Conditioning Research*, 24 (4) pp936 – 941.

American College of Sports Medicine (ACSM) (2009) *Guidelines for Exercise Testing and Prescription*, 8th Edition. Philadelphia, PA: Lippincott Williams and Wilkins.

Ball, N.B., and Scurr, J.C. (2009) 'Bilateral neuromuscular and force differences during a plyometric task'. *Journal of Strength and Conditioning Research*, 23 (5) pp1433 – 1441.

Beck, T.W., DeFreitas, J.M., Stock, M.S., and Dillon, M.A. (2011) 'Effects of resistance training on force steadiness and common drive'. *Muscle and Nerve*, 43 (2) pp245 - 250.

Brechue, W.F., Mayhew, J.L., and Piper F.C. (2010) 'Characteristics of sprint performance in college football players'. *Journal of Strength and Conditioning Research*, 24 (5) pp1169 – 1178.

Brughelli, M., Cronin, J., and Chaouachi, A. (2011) 'Effects of running velocity on running kinetics and kinematics'. *Journal of Strength and Conditioning Research*, 25 (5) pp933 – 939.

Chelly, M.S., Ghenem, M.A., Abid, K., Hermassi, S., Tarka, Z., and Shephard, R.J. (2010) 'Effects of in-season short-term plyometric training program on leg power, jump and sprint performance of soccer players'. *Journal of Strength and Conditioning Research,* 24 (10) pp2670 – 2676.

Comfort, P., Graham-Smith, P., Matthews, M.J., and Bamber, C. (2011) 'Strength and power characteristics in English elite rugby league players'. *Journal of Strength and Conditioning Research*, 25 (5) pp1374 – 1384.

Cormie, P., McGuigan, M.R., and Newton, R.U. (2011a) 'Developing maximal neuromuscular power: part 1 – biological basis of maximal power production'. *Sports Medicine*, 41 (1) pp17 – 38.

Cormie, P., McGuigan, M.R., and Newton, R.U. (2011b) 'Developing neuromuscular power: part 2 – training considerations for improving maximal power production'. *Sports Medicine*, 41 (2) pp125 – 146.

Docherty, D., and Hodgson, M. (2007) 'The application of post-activation potentiation to elite sport'. *International Journal of Sports Physiology and Performance*, 2 (4) pp439 – 444.

Ebben, W.P. (2002) 'Complex training: a brief review'. *Journal of Sports Science and Medicine*, 1 (2) pp42 – 46.

Eckhardt, H., Wollny, R., Müller, H., Bärtsch, P., and Freidmann-Bette, B. (2011) 'Enhanced myofiber recruitment during exhaustive squatting performed as whole body vibration exercise'. *Journal of Strength and Conditioning Research*, 25 (4) pp1120 – 1125.

Flanagan, E.P., and Comyns, T.M. (2008) 'The use of contact time and the reactive strength index to optimize fast stretch – shortening cycle training'. *Strength and Conditioning Journal*, 30 (5) pp32 – 38.

Gee, T.I., Olsen, P.D., Berger, N.J., Golby, J., and Thompson, K.G. (2011) 'Strength and conditioning practices in rowing'. *Journal of Strength and Conditioning Research*, 25 (3) pp668 – 682.

Hodgson, M., Docherty, D., and Robbins, D. (2005) 'Post-activation potentiation: underlying physiology and implications for motor performance'. *Sports Medicine*, 35 (7) pp585 – 595.

Hunter, J.R., O'Brien, B.J., Mooney, M.G., Berry, J., Young, W.B., and Down, N. (2011) 'Repeated sprint training improves intermittent peak running speed in team-sport athletes'. *Journal of Strength and Conditioning Research*, 25 (5) pp1318 – 1325.

Ishikawa, M., and Komi, P.V. (2007) 'The role of the stretch reflex in the gastrocnemius muscle during human locomotion at various speeds'. *Journal of Applied Physiology*, 103 (3) pp1030 – 1036.

Jackson, A.S., and Pollack, M.L. (1978) 'Generalised equations for predicting body density of men'. *British Journal of Nutrition*, 40 (3) pp497 – 504.

Jensen, R.L., and Ebben, W.P. (2007) 'Quantifying plyometric intensity via rate of force development, knee joint, and ground reaction forces'. *Journal of Strength and Conditioning Research*, 21 (3) pp763 – 767.

Komi, P.V., and Ishikawa, M. (2009) 'Muscle: producing force and movement'. In R.J. Maughan (ed) *The Olympic Textbook of Science in Sport*. West Sussex, UK; Wiley – Blackwell.

Kubo, K., Morimoto, M., Komuro, T., Yata, H., Tsunoda, N., Kanehisa, H., and Fukunaga, T. (2007) 'Effects of plyometric and weight training on muscle-tendon complex and jump performance'. *Medicine and Science of Sports and Exercise*, 39 (10) pp1801 – 1810.

Limonta, E., and Sacchi, M. (2010) 'Morphological analysis of force/velocity relationship in dynamic exercise of varying loads'. *Journal of Strength and Conditioning Research*, 24 (8) pp2065 – 2072.

Markovic, G., and Mikulic, P. (2010) 'Neuro–musculoskeletal and performance adaptations to lower-extremity plyometric training'. *Sports Medicine*, 40 (10) pp859 – 895.

McBride, J.M., Blow, D., Kirby, T.J., Haines, T.L., Dayne, A.M. and Triplett, N.T. (2009) 'Relationship between maximal squat strength and five, ten, and forty yard sprint times'. *Journal of Strength and Conditioning Research*, 23 (6) pp1633 – 1636.

McCann, M.R., and Flanagan, S.P. (2010) 'The effects of exercise selection and rest interval on postactivation potentiation of vertical jump performance'. *Journal of Strength and Conditioning Research*, 24 (5) pp1285 – 1291.

Moir, G.L., Mercy, D., Witmer, C.A., and Davis, S.E. (2011) 'The acute effect of manipulating volume and load of back squats on countermovement vertical jump performance'. *Journal of Strength and Conditioning Research*, 25 (6) pp1486 – 1491.

Pire, N. (2006) *Plyometrics for All Athletes: A Training Guide for Explosive Speed and Power*. Berkeley, CA: Ulysses Press.

Potach, D.H., and Chu, D.A (2008) 'Plyometrics training', In T.R. Baechle, and R.W. Earle, (eds) *Essentials of Strength Training and Conditioning*, 3rd Edition. Champaign, IL: Human Kinetics.

Rainoldi, A., and Gazzoni, M. (2011) 'Neuromuscular physiology'. In M. Cardinale, R. Newton and K. Nosaka (eds) *Strength and Conditioning: Biological Principles and Practical Applications*. West Sussex, UK: Wiley and Sons.

Rimmer, E., and Sleivert, G. (2000) 'Effects of a plyometric intervention program on sprint performance'. *Journal of Strength and Conditioning Research*, 14 (3) pp295 – 301.

Robbins, D.W., Young, W.B., Behm, D.G., and Payne, W.R. (2010) 'Agonist – antagonist paired set resistance training: a brief review'. *Journal of Strength and Conditioning Research*, 24 (10) pp2873 – 2882.

Salaj, S., and Markovic, G. (2011) 'Specificity of jumping, sprinting, and quick change-of-direction motor abilities'. *Journal of Strength and Conditioning Research*, 25 (5) pp1249 - 1255.

Tillin, N.A., and Bishop, D. (2009) 'Factors modulating post-activation potentiation and its effect on performance of subsequent explosive activities'. *Sports Medicine*, 39 (2) pp147 – 166.

Tillin, N.A., Jimenez-Reyes, P., Pain, M.T.G., and Folland, J.P. (2010) 'Neuromuscular performance of explosive power athletes versus untrained individuals'. *Medicine and Science in Sports and Exercise*, 42 (4) pp781 – 799.

Turner, A.N., and Jeffreys, I. (2010) 'The stretch – shortening cycle: proposed mechanisms and methods for enhancement.' *Strength and Conditioning Journal*, 32 (4) pp87 – 99.

Verkhoshansky, Y., and Siff, M.C. (2009) *Supertraining: Expanded Edition*. 6th Edition. Rome, Italy: Verkhoshansky SSTM.

Villarreal, E.S.S., Requena, B., and Newton, R.U. (2010) 'Does plyometric training improve strength performance? A meta-analysis'. *Journal of Science and Medicine in Sport*, 13 (5) pp513 – 522.

Wilson, J.M. and Flanagan, E.P. (2008) 'The role of elastic energy in activities with high force and power requirements: a brief review'. *Journal of Strength and Conditioning Research*, 22 (5) pp1705 -1715.

Winchester, J.B., McBride, J.M., Maher, M.A., Mikat, R.P. Allen, B.K., Kline, D.E., and McGuigan, M.R. (2008) 'Eight weeks of ballistic exercise improves power independently of changes in strength and muscle fibre type expression'. *Journal of Strength and Conditioning Research*, 22 (6) pp1728 – 1734.

Young, W. (1992) 'Sprint bounding and the sprint bound index'. *National Strength and Conditioning Association Journal*, 14 (4) pp18 – 22.

Zech, A., Hübscher, M., Vogt, L., Banzer, W., Hänsel, F., and Pfeifer, K. (2010) 'Balance training for neuromuscular control and performance enhancement: a systematic review'. *Journal of Athletic Training*, 45 (4) pp392 – 40.

Thinking outside the National Curriculum: A Study of Alternative Curriculum Provision at Key Stage 4

Diane Reid

ABSTRACT

The following is a small scale research project which uses a mixed methods approach to determine the impact and effectiveness of Alternative Provision (AP) at Key Stage 4. The study provides a historical context for AP and examines the growing need for it within the traditional structure. Qualitative and quantitative methods are used to identify key elements for success by conducting a comparative study between two different programmes of this type.

A thematic analysis of staff and student perceptions, during and post involvement in AP, proved that the approach works well in terms of its social and emotional benefits. However, alternative methods of assessment may be required to raise its profile and produce more tangible progression routes for those involved. The main conclusions drawn from the study are that an individual, purposeful and appropriate programme of study, administered through AP, raises participation and addresses the disaffection which may result from the Key Stage 4 experience. Recommendations for further study relate to international models, referral processes, intended outcomes and funding.

Introduction

Since the 1988 Education Act different governments have sought to increasingly regulate and control the system of education in the UK. By implementing a system of testing and school league tables under a National Curriculum (NC) and strategies which allow schools to opt out of the Local Authority this objective of control and regulation would appear to have been at least partially achieved. Two such strategies have been the Specialist Schools Programme and the more recent Academies Programme. These changes have resulted in a significant reduction in education spending and created increasing inequalities (Gillard, 2011) within the system. MP's and Educators sceptical of the changes argue that the growth of central control has been excessive, inappropriate and continues to degrade the quality of educational provision. More holistic approaches, which will be explained in further detail below, have brought about alternative forms of provision, which cater mainly for students who have either been excluded from, or are failing to achieve through, traditional schooling (Miller, 2000 p2). Recent developments appear to suggest that central control of Alternative Provision is now being sought, which could result in further disadvantage for the many students who participate every year.

Around 135,000 children of compulsory school age are involved in some kind of Alternative Provision (AP) on a yearly basis, (DCSF, 2008 p11). Some 89% are aged 11-16 and of these 73% are male, making the majority of students involved teenage boys, (Ogg and Kaill, 2010 p4). It is well documented that prospects and life chances will diminish for students who gain no academic achievements as a result of formal education and for a large number of children every year, this is an unfortunate reality.

Alternative Curricula (AC) are programmes of study that do not conform to nationally prescribed standards as is the case in most British schools. AC exists because it is felt that the National Curriculum may be inappropriate or inaccessible to a number of students. The statistical evidence supports this, in that, around 39,000 (or 5%) of students achieve no qualifications post-GCSE (GTCE, 2005). In response to this issue schools can provide an Alternative Curriculum for some students, but this tends to be on a largely ad-hoc basis and is often poorly staffed, organised and funded (GTCE, 2005).

This small scale research project examined the experience of students involved in Alternative Curriculum provision during Key Stage 4 and investigated its effectiveness with a view to informing future provision. Broad research questions explored the following;

- What is the experience of students currently involved in AC and what are their attitudes to education in general, considering both traditional and alternative forms of education?

- How do students involved in AP perceive themselves and their family circumstances and do they have aspirations for the future?

- What is the potential for achievement within an AC and do the staff involved perceive it to be a valuable resource or just a dumping ground for learners identified by the traditional system as unteachable?

Literature Review

Traditional Education in the context of this study refers to the type of education that is deemed to be appropriate to the age and ability of children of compulsory school age in the UK. Offered in most schools, it focuses on teacher-led instruction, coupled with a system of basic standardised testing and for this reason is sometimes called State Education. Prior to the Conservative governments of the 1980's and 1990's, Labour New Right perspectives became the basis for much educational policy and is thought to have begun in 1976 with what is commonly known as the Great Debate (Haralambos and Holborn, 2000 p801). Despite its instigation by the then Labour Party leader James Callaghan the debate called for 'education to contribute as much as possible to improving the performance of the manufacturing industry', quoting it as 'vital to the UK's economic recovery', (Finn, 1987 p106 cited in Haralambos and Holborn, 2000 p801) and improved living standards.

Under the Conservative leadership of Margaret Thatcher, some of the most drastic changes that have shaped the system of education occurred. As was suggested by the debate, New Right perspectives were used to change what had been a slowly expanding education service into a rapidly, streamlined one (Allen and Ainley, 2007 p3). Since that time educators commonly argue that education no longer serves to emancipate the mind but is increasingly used as a form of social control and now operates an almost obsessive pre-occupation with education, serving the needs of the economy, particularly in terms of its vocational requirements. In addition to this Allen and Ainley (2007, p5) suggest that successive governments have continually

substituted extended periods of learning for employment policy, as a means to boost the economy and conclude therefore, that education in its current form actively restricts learning opportunities.

National Curriculum

The main changes imposed by means of the Education Acts (1988 and 1993) resulted in the compartmentalisation and commodification of a service that had previously enjoyed considerable autonomy in the way it was organised and delivered (Allen and Ainley, 2007 p2). The Acts as described by Cohen, Manion and Morrison (1996, p3) called for a common National Curriculum, coupled with formal assessment at ages 7, 11, 14 and 16 to enable schools to be compared with each other in league tables of test results; however individual schools were to organise the delivery of the NC.

Implemented under the 1993 Act the Office for Standards in Education (Ofsted), an independent school inspectorate, responsible directly to central government in order to maintain the standards came into being. Allen and Ainley (2007, p20) note that 'although the National Curriculum was sold to teachers as an entitlement for all students, exam boards and elite universities continued to dictate the academic curriculum, which effectively put students attending State school at a disadvantage in comparison with students receiving grammar or private education. 'Forced to follow a National Curriculum set by and for the elite, the gap between State and Private education grew wider with the rising number children living in poverty' (Allen and Ainley, 2007 p6).

Holistic Approaches and Pedagogic Practice

Supporters of a 'Holistic' approach, (Miller, 2000 p1) argue that the 'education of young human beings should involve more than simply moulding them into future workers or citizens'. At a simplistic level a holistic approach challenges the traditional ideology and aims to develop the whole child. Theorists and educational pioneers such as John Dewey, Maria Montessori and Rudolf Steiner, amongst others, agree that education should be understood as the art of cultivating the moral, emotional, physical, psychological and spiritual dimensions of the developing child, (Miller, 2000). Carnie (2003, p10) acknowledges this to some degree by stating that 'the system of testing under the NC does not take into account children that are caring, compassionate,

innovative, creative, those who work collaboratively with others and are happy and secure in his or her own sense of self'.

Similarly, Pedagogic practice, a largely unfamiliar concept in the UK, refers to 'education in its broadest sense or in practical terms a holistic discipline that aims to support an individual's resources for their own development' (Cameron, 2006 p9). According to Petrie (2005, cited in Cameron, 2006, p10) 'Pedagogy or Pedagogues operate under a number of core principles such as;

- A focus on developing the whole child

- Children and staff are seen as inhabiting the same life space as opposed to separate and hierarchical domains

- Practical training prepares pedagogues to share in many aspects of children's daily lives i.e. preparing meals or making music

- Children's lives are seen as an important resource in group settings

- The understanding that children's rights are not procedural matters or legislative requirements

- An emphasis on teamwork and valuing the contribution of others in bringing up children for instance, professionals, community members and especially parents'.

'Pedagogues' are educated to degree level and undergo lengthy training that includes a number of different types of knowledge, such as; academic, theoretical, professional, experiential, creative and practical.

The approaches described provide viable alternatives to the traditional one discussed earlier as they have the potential to produce a highly trained, flexible workforce that is able to work across both universal and specific areas of children's services. Elements such as these are thought to be more readily provided by what is known as an Alternative Curriculum. The name Alternative denotes its fundamental difference to a traditional approach and supporters are mainly parents, teachers and students who may be dissatisfied with traditional approaches (Allen and Ainley, 2007).

In the absence of a more holistic approach to education it could be concluded, that the system of testing under the NC serves only to enable governments to monitor the performance of individual schools (Carnie, 2003 p11). It is reasonable to ask whether the changes that have been applied to the current system of education are in the best interests of the child, and what the intended purpose of a formal education should be? The inequalities and falling standards in British schools described by the OECD, state that literacy levels are now so low that almost one in three students lack the basic skills required to deal with everyday life (Donellan, 2001 p18). This would suggest that the changes have indeed, not been applied to benefit the child and further evidence of this is provided by Carnie (2003, p12) who describes the situation as one where teachers are 'unable to respond to the needs of their students because of an overloaded curriculum which has resulted in a lost interest in learning for many students'. The term 'overloaded' has been used because the NC currently occupies a great deal of Curriculum time and although there is no statutory requirement regarding the amount of time allocated to individual subjects there are national targets to be met in a number of subject areas, (Qualifications and Curriculum Development Agency, 2011)

In answer to the second question a student's experience of education is a major factor in influencing the way in which young people live their lives and engage with their communities. Therefore, could a curriculum that centres on such a narrowly conceived set of skills provide the tools to create well rounded individuals who function well within their communities and society as a whole? Allen and Ainley (2007) suggest that this is doubtful by recognising the increasingly difficult task for teachers to meet the needs of individual learners within the current system.

Alternative Education

The term Alternative, covers a wide range of approaches to education and therefore means different things to different people. Elective home education and small independent or parent/teacher run schools are two such examples. However, for the purpose of this study Alternative refers to types of education which can be tailored to suit the needs of individual children but that is not currently offered by traditional schools (provided outside of a traditional school setting) and is publicly funded, (Ogg and Kaill, 2010).

The kinds of students provided for by this method can be divided into four general types which according to Ogg and Kaill (2010) can be defined as; students with emotional behavioural difficulties (EBD), or those who consistently display poor behaviour and are at risk of becoming permanently excluded from school; Vulnerable students who may suffer with mental health issues or specific emotional or physical needs such as teenage mothers or school phobics; Students who do not belong to either of the first two groups but who are continually failing within the traditional system and therefore require a different approach; and finally students who do not have a school place due to a family move or students new to the UK, (Ogg and Kaill, 2010).

Providers can be organised into three main areas which are;

- Education provided at a Pupil Referral Unit (PRU) set up specifically for students who are permanently excluded from mainstream school but have previously catered for all four types and commonly thought to be something of a *sin bin* and have a generally poor reputation.

- Education provided by Colleges for students who are identified as requiring a different educational approach but do not have behavioural or vulnerability issues. Colleges mainly cater for students over sixteen but increasingly offer basic skills or vocational courses to younger students. Colleges are publicly funded and controlled, and courses offered are usually of a good standard.

- Education provided via an Independent Alternative Provider (IAP) which normally includes Community Groups and Limited or Charitable companies. IAP's operate in a similar way to Colleges in that they offer courses (per student) to other publicly funded organisations such as schools or Local Authorities but are not publicly controlled, which means that they are not Ofsted inspected as are the first two types.

All three types are not required to follow National Curriculum and the third type in particular is considered to be successful because they normally offer vocational or recreational programmes which are attractive to many students.

Staff and Student Perceptions

A positive example of staff perceptions of Alternative Curricula can be found in research by the General Teaching Council for England (GTCE, 2005) which stated that

'well-planned, run and monitored alternative curriculum programmes helped to re-engage and re-motivate previously disaffected and disengaged young people' (GTCE, 2005 p2). In spite of this, and due to the largely unregulated nature of Alternative Curriculum, there is little evidence of staff perceptions of the provision as a whole. However, Hallam et al. (2010) present some useful indications by means of their study of one type of IAP which suggests that, overall, staff perception of the programme was very positive and any negatives appear to be outweighed by the programmes positive impact.

The issue of self-esteem and student's perception of themselves is key, in relation to student's ability to learn, as students involved with Alternative Curriculum are often identified as having difficulty in this area. Research by the General Teaching Council (2005, p1) states that 'student perceptions of themselves lie at the heart of disaffection'. Whilst Long and Fogel (1999 p32) place it on a par with oxygen, stating that 'every child must have a good supply in order to thrive. Students with low self-esteem can display behaviour ranging from frantic and dangerous if they act out to passive and withdrawn if they internalise their feelings'. Students affected by these issues are an identified group amongst those involved in Alternative forms of education and often have specific programmes, tailored to address their needs.

Despite this, over the last twenty years student disaffection has continued to grow. There may be a number of reasons for this, some of which may be the growing number of children living in poor households, inconsistent parenting, abuse and violence (Long and Fogel, 1999). In 2009, 46% of the 34,000 children recorded on the Child Protection register were victims of abuse, (DCSF, 2009). Long and Fogel (1999, p32) identify the relationship between failure and self-esteem as a two way process, stating that 'failure can lead to low self-esteem and low self-esteem can lead to failure'. Statistical evidence of this lies in the latest Department for Education figures on fixed term and permanent exclusions which show that both types have doubled and trebled, respectively, (from 3,333 to 6,550 permanent exclusions and 135,000 to 307,840 in fixed term exclusions between 1991/2 and 2008/9), (Long and Fogel, 1999, Ogg and Kaill, 2010, Department for Education, 2009). There is evidence that a sense of failure which may have been cultivated by the process of continual testing under the NC, amongst other things, may not only be a precipitating factor which results in students low self-esteem but

could also be responsible for the development of persistent juvenile behaviour and criminality in adulthood, (O'Mahoney 2005, p168). Statistics from a National Prison Survey showed that '46 percent of prisoners under 21, left school before the age of 16 and 30 percent of prisoners of all ages admitted to persistent truancy', (Dodd and Hunter, 1992 cited in O'Mahoney 2005, p168).

Centralised Control

By the early nineties, Education spending had been cut to less than half that of the mid 1970's, (Gillard, 2011, p1). Therefore, standards 'particularly in state schools' were falling (Gillard, 2011, p2). As a result of NC, children educated in the UK are amongst the most tested in the world, yet, according to the Organisation for Economic Co-operation and Development (OECD) standards were especially low in comparison with other developed countries, (OECD, 2006 cited in Allen and Ainley, 2007 p2). One example of falling standards might be the increasing numbers of children who are excluded from traditional schools each year, which will be discussed later in the study. Also, further evidence is presented by Ofsted in 1997 who noted that 'state schools with large numbers of children from poor homes were by far the worst performers at GCSE', (Gillard, 2011, p2).

Consequently, the Conservative party, under the Major administration of 1990 sought to demonstrate a return to 'traditional principals' (Gillard, 2011, p6). By replacing the issue of selection with one of specialisation the claim was that it was foolish to ignore the talents of different students that could be catered for by Specialist Schools, (Gillard, 2011 p6). Specialist Schools were therefore introduced in 1992 via the White Paper, Choice and Diversity, using the idea of choice to build upon 'common sense principles', (IPPR, 1993 p2). Identified as quality, diversity, parental choice, greater autonomy and greater accountability by schools, these principles actually served to extend the government agenda to release state schools from Local Authority control by providing a greater selection of schools and creating competition between them. This in turn destroyed the ideal of a comprehensive education for all, as was the original aim of the 1944 Education Act, (Allen and Ainley, 2007 p43).

On the other hand under the Specialist Schools programme, many Faith Schools and parent run Charter Schools benefited from the invitation to opt out of Local Authority control (and out of NC) with the added enticement of £50,000 in additional funding from the private sector for assuming the status of a Specialist School, (Allen and Ainley, 2007 p78). The independent National Commission on Education (NCE) were amongst opposers of this strategy claiming that, in the same way that the move produced greater choice for parents, it would eventually allow schools to choose students. The NCE's clear warning was that 'as we see it, there is a serious danger of creating a hierarchy of good, adequate and sink schools, emerging within the maintained system' (NCE, 1993 p180 cited in Gillard, 2011 p6). Others, included a group of fourteen professors from universities and related disciplines from around the country who, in a letter to the Guardian newspaper in 1992, identified a need for education to be treated as a public service and not a commodity to be bought and sold (IPPR, 1993, p1). More recently, Carnie (2003, p5) continues to support this view by stating that, provisions under the National Curriculum are both narrow and prescriptive which actually serves to marginalise large groups of children.

New Perspectives or more of the same

The New Labour government of 1997 failed to live up to the expectations of many, which was primarily that market forces would be removed from education and the National Curriculum abolished. Jones (2003, p145 cited in Gillard, 2011) noted that, instead, many of the Education Act(s) reforms had actually been endorsed especially in terms of 'parental choice' (Education Act, 1993) and the competition that it created between schools in an increasingly diverse and unequal school system, (Gillard, 2011 p3).

In addition to Specialist Schools, a further initiative developed under the New Labour government, were Academy Schools. Using the freshly conceived Third Way political perspective, these began to emerge following the 2001 general election. The 'Schools Achieving Success' White Paper initially proposed 20 such schools nationally, (Allen and Ainley, 2007 p79). The Academies programme extended proposals set out in the 1992, 'Choice and Diversity', (Department for Education, 1992, p2-3) White Paper. Under the leadership of Tony Blair, the Labour government had turned the increasingly contentious issue of selection into one of specialisation by such schools, arguing that

children excel in different areas and that schools may wish to cater for these differences, (Gillard, 2011 p.6). The main criticism of the approach would be whether it is possible to cater for specialisms within the comprehensive ideal, as both principles could work against each other. The NCE (1993, p181-2) observes that 'choice, when exercised, is often used to escape the local school, thereby working against the community school ideal'. The main difference between Specialist and Academy Schools was that the (increasingly private) sponsors of the latter, effectively bought control of schools by making an initial down payment of two million pounds and any additional costs were to be met by the state. Academies were also encouraged to develop their own school ethos and by 2005, the Labour government had committed to introducing a further 200 Academy Schools, (Allen and Ainley, 2007 p79). The Department for Education (DfE, no date) states that a positive school ethos is paramount in obtaining a successful learning environment. However, this is not reflected in its recent research which reveals that the most common reasons for school exclusion, whether on a permanent or fixed term basis, are; physical assault and persistently disruptive behaviour, (DfE, 2009). It should be noted that despite this, statistics also show a downward trend in Exclusions from Academy schools. It will be interesting to see whether Academies can sustain this downward trend if exclusion figures continue to rise elsewhere.

As a result of the inequalities of the current system of education, methods of improving learning opportunities for all students became a key issue. The 1996 Tomlinson report recognises this by highlighting the fact that students with learning difficulties or disabilities were underachieving as a result of their experience of formal education, particularly in the post compulsory stage, (Tomlinson, 1996). Tomlinson recommended that it should be the responsibility of the educational institution to respond the needs of individual learners, regardless of age, gender, ethnicity or disability. Tomlinson's recommendations advocated a focus on the individual learner and a system of Inclusive learning that would change the culture of educational establishments.

In 2008 the Department for Children Schools and Families (DCSF) made some far reaching proposals in its white paper 'Back on Track' with regard to regulating the system of Alternative provision. The main recommendations set out were; the publication of performance data, the introduction of personal education plans for all students involved, Ofsted inspections of Local Authorities (LA's) and Independent Alternative

Providers (IAP's), a new national database of IAP's and ten new pilot programmes costing 26 million pounds across the UK to identify best practice and share innovation, (DCSF, 2008 p9). The Paper identified the need for the changes as being the need for greater accountability, in relation to outcomes for those involved as they appear (on the data available) to be consistently poor. The timeline for implementation of the Paper's proposed changes expired in January 2010, but as yet outcomes of the pilot programmes are unclear and current legislation appears to relate solely to the management and inspection of Pupil Referral Units (PRU's).

Under the present Coalition government, further developments in this area relate to a review of Vocational Education commissioned by the Education Secretary, Michael Gove, which found that many 14-16 year olds were involved with courses that were effectively dead-ends, (Wolf, 2011). The Wolf Report published in March 2011 goes further to state that schools were encouraged to use such courses because of the league table incentives and that many students were not being told the truth in relation to their choice of course. The main recommendations made by the report are:

- Reinforcing a commitment to a common core of study at KS4.

- Allowing 14-16 year olds to enrol at college in order to benefit from high quality courses.

- Removing the obligation for post-16 qualifications to be part of Qualifications and Credit Framework (QCF).

- Work experience should wait until post-16.

Internationally, in Denmark for instance alternative models appear to suggest the direct opposite to this in that they advocate an earlier introduction to vocational education. For Danish students vocational education is offered at either Key Stage 2 or Key Stage 3 and is thought to prevent culture shock later on due to the fact that students are better prepared for an educational setting that targets the labour market from day one, (The Ministry of Education, 2004). Reforms in the Danish system have a largely pedagogical focus as opposed to the UK's focus on teaching and learning. Instruments for the support of the individual learner such as a log book, a portfolio (used to link school and work place learning) a personal education plan to formulate a plan for progression and

a contact teacher who has access to internet based resources in order to follow up on the individual learners pathway.

The contention of this study is that many of these changes are reminiscent of those used to gain control of the Traditional system which does not meet the needs of learners with social, emotional or physical difficulties or disabilities. It further seeks to highlight the potentially negative impact of these proposals (particularly for pre-16 students) upon Alternative forms of education whose curricula typically contains elements of vocational education and work experience.

Methodology

The following section will examine the design of the research project. Its combination of qualitative and quantitative methods will be discussed, alongside sampling, ethical issues and data analysis.

Quantitative versus Qualitative methods

The study will be mainly qualitative but also quantitative in nature. Denscombe (2003, p172) states that good research tends to use parts of both approaches, and the difference lies in the degree to which it is based in one approach or the other. Quantitative methods as defined by Marshall (1994, p543) is regarded as the collection and analysis of numerical data, whereas, Qualitative methods refer to forms of data collection and analysis which require understanding with an emphasis on meaning. The Qualitative element of the study will be a series of one to one interviews and focus groups with both students and staff involved with Alternative Curricula. Data collected by this method is intended to assess the effectiveness of Alternative Curriculum provision, identify difference in purpose, referral criteria, staffing and management. The Qualitative aspect also focuses upon student attitudes/perceptions of themselves, their social/economic status and aspirations for the future along with staff perspectives of potential for achievement and other issues which may impact upon the overall experience of the students involved.

Comparative Study

The methodology used will be a comparative study and the reason for the use of the this approach is that it allows for a range of collection methods. Robson (2002, p89) states that, this type of flexible approach facilitates; 'the development of a detailed, intensive Knowledge about a single 'case', or of a small number of related cases'. The comparative study in this case permits the examination of two cases of the same type through a number of different lenses often, explanatory, descriptive and theoretical, (Cohen, Manion and Morrison 2007, p263) and all three perspectives will be considered in analysing the findings of the study. Denscombe (2003, p231) notes the 'real value' of this type of study is that it offers the opportunity to explain why certain outcomes might happen - more than just to find out what those outcomes are. This is because this approach calls for the subject to be studied in context, so that contributory factors can be understood in relation to the subject being studied, as well as the end result. In this way the approach can identify both 'cause' and 'effect'. This type of approach is also appropriate because it is widely used to describe in detail, participants real experiences of and thoughts and feelings about a given situation. The Comparative Study approach has been chosen for a number of reasons, including the fact that they can be carried out by a single researcher. This approach is also appropriate because Robson (2002) states that the tasks involved in this type of approach cannot be broken down into individual functions or rigid formulae as in the case of Surveys for instance.

Sampling

The method of sampling that will be used in this research is a Non-Probability method known as Purposive Sampling, (Cohen, Manion and Morrison, 2007, p114). Non-Probability means that some members of the wider population will be deliberately excluded from the sample as opposed to a Probability sample where all members of the population share an equal opportunity to become participants in a piece of research . This is because the Comparative Study approach used requires a particular group of respondents to be examined in both settings, this approach is commonly (but not exclusively) used in qualitative studies, on the basis that they can potentially provide an amount of rich data. Denscombe (2003, p15) effectively describes this as being chosen with a specific purpose in mind and that purpose reflects the qualities of the people or events chosen and their relevance to the topic of investigation.

Focus groups and Interviews

The interview techniques used will be semi structured because they allow respondents to develop ideas and speak more widely on issues raised, which will be instrumental in acquiring information based around students self esteem, and hopes for the future, (Denscombe, 2003 p167). Although it is possible to gather this type of information from a structured interview, the semi structured design was chosen primarily because of its ability to fit into the flexible design of the study. Also a large amount of very specific pre-defined information about what needs to be done and how it is to be done, is required prior to conducting structured interviews. Robson (2002, p4) states that structured interviews require a developed conceptual framework or theory in advance so that the researcher knows what to look for as well as extensive piloting to establish feasibility. Unfortunately, time constraints meant that this was not achievable and therefore inappropriate.

A total of three focus groups and a series of interviews are to be conducted in each setting which can be broken down in the following way; Adult participants involved with Alternative Curriculum teaching and management will be involved in one to one Interviews, followed by focus group style interviews with a mixed gender group of post-16 students who had previously been involved in the alternative programmes, then two further focus groups with students currently following an alternative route, one with girls and one with boys so as not to overlook any gender specific data that may emerge. Both techniques are useful in providing an in-depth insight into the chosen topic (using fewer respondents) and by using these methods rich data is to be extracted. One of the main benefits of this approach, particularly when interviewing children, is that it has considerable potential to raise consciousness and empower participants, (Johnson 1996, cited in Robson, 2002 p284).

Reliability, Generalisability and Triangulation

In terms of its generalisability there is a distinction to be made between what is called internal and external generalisability, (Robson, 2002 p167). Internal refers to conclusions made within a single setting, whereas, external kind refers to generalisability beyond that setting. Comparative studies do not easily lend themselves to making generalisations as they can introduce the risk of bias and for this reason the comparative approach is more commonly used to make what is often called Analytical or Theoretical Generalisations, (Robson 2002, p177). Yin (1994) and Ragin (1987) (cited in Robson 2002, p177) describe analytical generalisation as the development of a theory which helps in understanding other cases or situations. In order to address scepticisms relating to the generalisability of the case study approach Denscombe (2003, p36) states that 'the extent to which findings from the case study can be generalised to other examples in the class, depends upon how far the example is similar to others of its type', therefore one of the researchers crucial tasks lies in identifying significant features on which comparison with other examples in the class can be made. These features should typically include details on the following;

a) Physical Location – geographical area, town, building, room, furniture, decor

b) Historical Location – changes/developments

c) Social Location – catchment area, ethnic grouping, social class, age, sex and other specific data about participants

d) Institutional Location – Type and size of organisation, official procedures and policies (Denscombe, 2003 p36)

It is therefore the intention to collect as much of this information as possible pertaining to both settings.

Ethical Considerations

In this section, ethical issues such as informed consent, the right to withdraw confidentiality and anonymity will be discussed, as they underpin values and set standards of conduct in research. All researchers are therefore obliged to the follow legal requirements which are set out in the 'RCUK Policy and Code of Conduct on the Governance of Good Research Conduct' (RCUK, 2009).

Informed consent refers to the process of gaining the co-operation of subjects to be studied as part of social research projects. Cohen, Manion, Morrison, (2007 p52) argues that participation potentially impacts upon the freedom of the individual and that within a democratic society such actions must be consented to. Therefore informed consent must be obtained before embarking upon studies of this kind particularly where they

involve child participants. In order to achieve this Project Managers, Headteachers and Parents were approached by means of an introductory letter. Following initial meetings with Project Managers and Headteachers and upon receipt of parental permission, target groups were identified and consulted by means of a short presentation. Each presentation contained an initial element which was dedicated to declaring the purpose of the research, confidentiality, participant's right to withdraw, background information on the researcher, explaining how to access findings and answering any questions raised.

Quantitative Data

Quantitative data collected for the study relates to attendance, fixed term exclusion and free school meal information. The statistics range from Key Stage 3 through to Key stage 4 and for one group of pre-16 students and analysis of this type of data will identify any patterns in attendance, behaviour and economic status. The data will be used in an inferential manner to make correlations between the qualitative and the quantitative data collected. Cohen, Manion and Morrison (2007, p504) states that 'Inferential Statistics' strive to make inferences or predications based on the data gathered and are often very powerful. It should be noted that a limitation of this technique is that the data was only available for one group of pre-16 students.

Data Analysis

It is important to consider a method of data analysis as part of any study because an absence of information about how the researcher conducted the analysis or what assumptions informed that analysis makes evaluation and comparison difficult and may impede future research on related topics, (Braun and Clarke, 2006 p80).

The data collected will be analysed by means of a process called 'Thematic Analysis', (Braun and Clarke, 2006 p78). Widely used amongst researchers this method is viewed as a particularly strong foundation for the analysis of qualitative data. Braun and Clarke (2006) argue that it provides core skills that will be useful in conducting many other forms of qualitative analysis. Thematic Analysis can be described as a method for identifying, grouping and reporting patterns or themes within collected data and for this reason the need to remain objective will be observed throughout

the analysis stage. The study will contain direct quotes from participants in order to express the individual's perspective (Becker and Bryman, 2005, p301) together with academic quotes where necessary to substantiate the individual's point of view (Becker and Bryman, 2005). The factors outlined above will provide a solid basis from which the findings and analysis, from the primary data collected for the study can be examined.

Findings/Analysis

Student experiences and attitudes to education

According to the responses recorded during the focus group discussions, with participants in this study the findings are as follows;

In terms of the experience of students involved and their attitudes to education all of the nine male participants in the 14-16 age range, across both settings agreed that the experience of Alternative provision had been mostly positive. One of the pre 16 participants at setting A stated;

"Yeah, we had a lot of choice, the more choices you get the better the decision about what you want to do"

Research by the GTCE (2005) shows that specific vocational areas studied or experienced by students involved in Alternative Programmes, reflected the student's particular interests and talents.

In attempting to describe what they thought of AP another student from setting B said;

"It's better than school but the lessons ain't, in school you have Bunsen burners for Science, but here you don't".

This suggests that there may be issues which relate to funding and resources that impact upon the quality of the provision. However, despite this the participant states a clear preference for the Alternative setting. The absence of resources or funding then appears to be secondary in terms of the students experience and the positivity may be more closely linked to the student's relationships with staff and peers. Carnie (2003, p18) states that good relationships are at the heart of a successful school and

implies that a small school structure allows teachers to better understand the interests, strengths, weaknesses and progress of individual learners.

In the case of post-16 students they reported a largely positive experience in setting B, whilst in setting A the experience was not viewed as positively as if they had pursued their original goal, which was that of going to College in three out of four cases. One student stated;

"All we did was go on trips and have fun, with no education" (student - setting A)

Another said:

"It's OK if you did good in your GCSE's, but don't come back thinkin you can do stuff again" (student - setting A)

There may be an indication here that their experience of Alternative Provision actually prevented them from getting the qualifications that they felt they needed. A re-examination of the selection process may, in this instance, may be required as this could produce the kind of negative perceptions indicated by students involved. In other studies this problem has been addressed by offering Alternative programmes as an option, and in so doing increasing 'ownership and commitment. Although the same study also found that these options were also steered by teachers' (GTCE, 2005 p7).

However, by contrast students from setting B made the following comments;

"It's alright aye it, its easy goin and you still get your qualifications an that" (student - setting B)

Whilst others stated:

"Cause they help you find a placement and get you on an Apprenticeship and everything" (student - setting B)

"The tutors are like, someone you can talk to, I hated all my teachers in school" (student - setting B)

It has been noted that the negative comments made by students above may indicate a lack of structure to the Alternative programme (which will be considered later on), but

a much higher number of students made positive comments about their experiences.

The attitudes to education were almost uniformly positive across both settings in that all 25 participants recognised the importance of school in gaining qualifications to further their education or gain future employment. However, many of the pre-16 students expressed disillusion with traditional schooling stating boredom and dislike of teaching staff as key reasons for the way that they felt. Student experience then appeared to be a key factor in motivating students to participate in post-16 education and attitudes to the role and importance of education in general are positive.

Self-perceptions of students involved and future aspirations

Leading on from this, the second theme 'identifying student's self-perceptions and aspirations for the future' is significant at this point because it shows that self-esteem is relatively low across the board. Both groups of pre-16 students appeared to have self-esteem issues of some kind and the following comments were made;

"I don't come here to be liked" (student - setting B)

"I come to keep my mom happy otherwise she would get all these fines" (student - setting B)

The statements relate to how learners thought they were perceived by other people and both convey a sense of detachment from the issue. However, Symbolic Interaction theory offered by Stryker (2002) states that an individual's self-esteem is based upon their perception of the behaviour of others, (Haralambos and Holborn, 2000, p.972). These statements therefore could represent an active attempt to protect the self-esteem by discounting the views of those who might carry negative opinions of them. In analysing these statements the patterns of detachment present in them also show an internalisation of feelings. This correlates with patterns of behaviour that are identified as Social Emotional Behavioural Difficulties (SEBD). Cooper (2005) states that there is an estimated 10% of the English schools population that suffer from SEBD and that an overwhelming majority of these can be found in mainstream or traditional schools. As these types of students are often identified as requiring an Alternative approach by traditional educators, it is reasonable to assume that many will be involved in AP. Cooper (2005, p111) supports this by stating that the internalisation of feelings can lead

to serious under performance in school as well as the impairment of social relationships.

"We're on our last warnings now so there's really no chance we're gonna come back" (student – setting A)

"Some teacher's judge us on our past behaviour and you can't do that people change" (student – setting A)

The comments were made by students in setting A, in answer to what they thought about the prospect of returning to education post-16 and it is clear that there is a sense of hopelessness in relation to their future aspirations. National Statistics for 2009, tell us that approximately 35.3% of students are not involved in any education or training by the age of 18, (DfE, 2009). However, all students in this group did express an intention to go on to College, stating that it would be preferable to staying on as the new surroundings would provide a fresh start and eliminate old prejudices which they perceived to be held by the staff.

The prospect of progressing to post-16 education then remains generally positive so student experiences in this setting may have contributed significantly to poor self-esteem issues. Students in setting B on the other hand, having been removed to study away from their original setting may have the advantage of building new relationships in a new environment, as was desired by the other group. It should be noted however that students identified as difficult to manage often struggle with issues such as conflict resolution and adapting to expectations so there is a possibility that even with a fresh start these students may still struggle to progress without dedicated forms of appropriate support, (Sproson, 2003: p19) such as would be provided by a pedagogue for instance.

Despite evidence of low self-esteem amongst participants there does not appear to be a shortage of future aspirations across the groups, as many were able to identify a plan for their future. However, due to the largely unregulated nature of Alternative programmes there may be an argument in favour of providing a more structured approach to this type of provision, particularly as one student does indicate that his involvement in it represented a missed opportunity to gain the qualifications he needed to progress. Ogg and Kaill (2010) highlight the fact that alternative programmes cater

for a wide variety of young people and evaluations of such projects show positive results but points out that evaluations are by no means exhaustive. In this case then it is a possibility that the student may have been referred to a programme which did not meet his particular needs.

Staff perceptions of effectiveness and potential for achievement

The third theme which examines staff perceptions of Alternative Programmes shows clearly that they are not only valued but an absolutely necessary part of educational provision for students. All staff interviewed on both programmes agreed that educational provision under the National Curriculum, was not suited to all students. Some went further to say that provision under NC was not only not realistic or achievable but that it was not even enjoyable for many students. One member of staff responsible for teaching on an AP programme stated that;

"National Curriculum, just doesn't meet the needs of students either in the way it is delivered and assessed or in the way it addresses problems that the students come with" (staff – setting A)

Staff with managerial responsibility of another programme states;

"Some kids just can't cope with traditional schooling, it's too big, they just can't sit quietly and concentrate. Alternative provision can't just be a replica of school, for it to be truly alternative, things have to be done in a different way" (manager – setting B)

There is some recognition here that to be successful under NC, students would ideally be of the type that suffer no social or emotional problems and have the ability to concentrate for long periods of time. The presence of these problems is regularly associated with those produced by poverty. An Ofsted report in 1997 noted that state schools with large numbers of children from poor homes were by far the worst performers at GCSE, (Gillard, 2011 p2).

Perceptions of potential for achievement within AP show that there may be problems associated with progression from these programmes but that its benefits outweighed this negative aspect, staff from both settings made similar comments such as;

"It's less about the qualifications at the end and more about the fact that they feel they can participate in education, the problem is a lot of kids don't feel part of the system"(staff – setting A)

Academic achievement is viewed by staff as less important than emotional intelligence. This is described by Corrie (2009, p3) as a way of understanding and shaping the way we think, feel and act. Corrie (2009) goes on to state that as teachers and carers the person that we are being and the behaviours that we demonstrate on a daily basis, play as large a part in the educative process as the content of what we are teaching.

The findings of the data show a number of positive elements which would suggest that involvement in Alternative programmes during Key Stage 4 was a largely positive experience for the respondents involved in the small scale research study.

Conclusion

The majority of student experiences of Alternative provision are positive as opposed to the negative ones described based on previous experiences of traditional schooling. AP provides the opportunity for students to become involved in a variety of specific vocational areas and learners perceived the breadth of choice to be beneficial in making decisions about future career paths. Attitudes to education are also positive as all students were able to recognise the role of education in securing future employment or training. Previous studies by the GTCE (2005, p2) and the DCSF (2008, p5) recommend the use of Alternative programmes for two main reasons; first of all to help re-engage disaffected and demotivated young people and secondly, as an early intervention strategy to avoid the PE of those at risk. Conversely, conclusions from the recent Wolf Report (2011) refutes the fact that there is any evidence that vocational qualifications can motivate 14-16 year olds and prevent them from becoming NEET's (Not in Education, Employment or Training).

The study also showed evidence that at a small number of students (under 1%) did not feel involvement in an Alternative programme was appropriate for them therefore careful attention should be paid to ensuring that students are involved in the right courses. Current discourse around listening to children suggests that children's participation

and opinions are not a valued as those of adults, (Jones, 2009 p28). However, it is imperative that their views are sought as decisions made in lieu of them could lead to disillusion and or disengagement throughout the post-16 phase as is evidenced by comments made in the previous section. This may require a reorganisation of referral strategies on the part of schools and LA's.

Student's self-perceptions showed that low self-esteem issues were present in almost all the participants. The importance of maintaining good in self-esteem in education is well documented, Long and Fogell (1999) and Corrie (2009) find that self-esteem guides behaviour and low self-esteem produces negative results in this area. All participants have been involved in traditional schooling prior to Key Stage 4 and it is therefore likely that negative experiences have arisen from this period but further research would be required in order explore whether this is the case. Children of all ages are very perceptive and understanding the way they think, feel and act is central to their education, participants from both settings were able to articulate their feelings with regard to future prospects if they were to remain in traditional schools. Similarly, future aspirations were not impaired despite the negative experiences they described, making the Alternative approach used in both cases successful in addressing any social emotional or behavioural difficulties that emerged as a result. For many participants this was evident in their desire to be given a second opportunity to achieve. Some consideration should be given to international practice in this area as a more holistic or pedagogical approach could be key in addressing these issues.

The settings did not differ in purpose as the aim of both was to address underachievement and poor behaviour amongst the learners. Managers and staff alike were clear about the benefits of AP and viewed it as an essential tool in addressing a range of issues including the above. Both agreed that AP provides a means of setting realistic, achievable goals for those whose ability to learn is reduced by negative behaviours and social problems. Corrie (2009, p4) states that even if all the correct learning resources are put into place and children are allowed to access the curriculum in a way that supports them, there will still be children who display negative behaviours and beliefs about themselves that inhibit them from learning, for a number of reasons. From this it is reasonable to assume that school experience will be amongst those reasons when we consider its impacts on an individual's social and emotional relationships and life chances well into

adulthood. Funding was also identified by both settings as a potential challenge but this may be because there does not appear to be a set pricing structure for acquiring AP at present. Again further research in this area could resolve this for future providers. Potential for academic achievement was also identified as an issue for providers but both considered it secondary to the social benefits, which were to improve self-esteem and in so doing make learning accessible and a sense of achievement possible for the learners. This links back to the purpose which needs to be clear at the point of referral in order to be successful for those involved. Due to limited data, successive governments have attempted to assess AP through academic standards which, due to the UK's qualifications framework are often beyond its capability. Further research in the proposed areas could eliminate this practice, allowing AP to be utilised to greater effect.

REFERENCES

Allen, M. and Ainley, P. (2007) *Education make you fick, innit?* London: The Tuffnell Press.

Becker, S. and Bryman, A. (2005) *Understanding Research for Social Policy and Practice; Themes, Methods and Approaches.* Bristol: Policy Press

Braun, V. and Clarke, V. (2006) 'Using thematic analysis in psychology' *Qualitative research in psychology* 3, p. 77-101 [Online] Available at: www.QualResearchPsych.com (Accessed: 7, March 2011)

Cameron, (2006) *New ways of educating: pedagogy and children's services.* London: Thomas Coram Research Unit

Carnie, F. (2003) *Alternative approaches to education: a guide for parents and teachers.* London: Routledge falmer

Cohen, L. Manion, L. and Morrison, K. (1996) *A Guide to Teaching Practice*. 4th Edition. London: Routledge

Cohen, L.Manion, L. and Morrison, K. (2007) *Research methods in education*. Oxon: Routledge

Cooper, P. (2005) 'Biology and Behaviour: The educational relevance of a biopsychosocial perspective' in Clough, P., et.al (eds) *Handbook of emotional and behavioural difficulties* London: Sage

Corrie, C. (2009) *Becoming emotionally intelligent*. 2nd edition. London: Continuum International Publishing Group

DCSF (2009) 'Referrals, assessments and children and young people who are the subject of a child protection plan. England-Year ending 31 March 2009' [Online] Available at: http://www.dcsf.gov.uk/ (Accessed: 13, March 2011)

Denscombe, M. (2003) *The Good Research Guide*. 2nd edition. Berkshire: Open University Press

Department for Children, Schools and Families (2008) *Back on track*. London: The Stationery Office.

Department for Education (2009) *Participation in Education, Training and Employment, by 16-18 year olds in England* [Online] Available at:http://www.education.gov.uk/rsgateway/DB/SFR/s000938/index.shtml (Accessed: 8, April 2011)

Department for Education (1992) *Choice and Diversity: a new framework for schools.* London: HMSO

Department for Education (2009) [Online] Available at: http://www.telegraph.co.uk/comment/columnists/benedict-brogan/5963753/Michael-Gove-It-is-a-schools-ethos-that-matters.html(Accessed: 20, February 2011)

Donellan, C. (2001) 'The Education Crisis' *Britain has the worst schools in Europe* 35:1, 18-19. Cambridge: The Burlington Press

Education Act 1988: Chapter 35 (1988) London: HMSO

Education Act 1993: Chapter 10 (1993) London: HMSO

Gillard, D. (2011) *Education in England: a brief history,* available at www.educationengland.org.uk/history [accessed October 2011]

GTCE (2005) Available at: http://www.gtce.org.uk/tla/rft/alt_prov0105/ (Accessed:18, October 2010)

Hallam, J. Rogers, L. and Rhamie, J (2010) 'Staff perceptions of the success of an alternative curriculum: Skill Force', *Emotional and Behavioural Difficulties,* 15: 1, 63-74 [Online] Available at: http://dx.doi.org/10.1080/13632750903512431 (Accessed: 18, February 2011).

Haralambos, M. and Holborn, M. (2000) *Sociology: Themes and Perspectives.* 5th edition. London: HarperCollins Ltd.

Institute for Public Policy Research (1993) *Education a different vision – an alternative white paper,* London: Premier Printers

Jones, P. (2009) *Rethinking childhood.* London: Continuum International Publishing Group

Long, R. and Fogel, J. (1999) *Supporting pupils with emotional difficulties* London: David Fulton Publishers Ltd.

Marshall, G. (1994) *Oxford dictionary of sociology.* Oxford: Oxford University Press.

Miller, R. (2000) 'A brief introduction to holistic education' *Infed* [Online] Available at:http://www.infed.org/biblio/holisticeducation.htm (Accessed:18, February 2011)

Ogg, T. and Kaill, E (2010)*'A new secret garden? Alternative provision, exclusion and children's rights'* London:OGG AND KAILL Available at: http://www.Ogg and Kaill.org.uk/ (Accessed: 3, December 2010).

QCDA (2011) Qualifications and Curriculum Development Agency [Online] Available at: http://curriculum.qcda.gov.uk/faqs/ (Accessed: 26, April 2011)

Robson, C. (2002) *Real world research.* 2nd edition. Oxford: Blackwell Publishing

RCUK (2009) *Research Councils UK* [Online] Available at: http://www.rcuk.ac.uk(Accessed: 21, March 2011).

Sproson, B. (2003) 'Solution or smoke screen? The use of further education colleges in making KS4 provision for difficult to manage (D2M) students', *Support for Learning* 18 (1), pp. 18-23 [Online]Available at:http://onlinelibrary.wiley.com/doi/10.1111/1467-9604.00272/abstract(Accessed:21, March 2011).

Stryker, S (2002) *Symbolic Interactionism.* The Blackburn Press.

Tomlinson, M. (1996) Available at: http://education.stateuniversity.com/pages/3619/Tomlinson-Report-(1996).html (Accessed: 4, April 2011)

The Ministry of Education (2004) *Retention in vocational education in Denmark – a best practice study* [Online] Available at: http://pub.uvm.dk/2005/retention/ (Accessed: 26, April 2011)

Wolf, A. (2011) *Review of vocational education – the wolf report* [Online] Available at:http://www.education.gov.uk/ (Accessed: 20, April 2011)

Cultivating and socialising the employee's collective mind and behaviour: a critical literature review

Alexander Webster

ABSTRACT

Within this critical literature review the relationship between organisational structure and employee agency will be explored, introducing the collective mind paradigm as a method of conceptual interpretation by considering power as a flow of interrelation and influence within an organisation. A question will be proposed: are the symbolic and formal aspects of organisational life aligned? As a point of inception the concept of organisational culture will be examined in an attempt to set the context of the organisational structure and employee agency relationship.

Organisational culture: A contested concept

There are many different definitions proffered regarding the concept of organisational culture and the notion of labelling and explaining a single definition of organisational culture is problematic (Mullins 2007). The concept of organisational culture is intangible by nature and while literature exists proffering definitions no single definition appears all encompassing. Culture can be seen as a descriptive term (Robbins, Judge and Campbell, 2010) and therefore the many definitions can relate to perceived characteristics noted by writers and theorists.

Organisational culture has been defined in terms of a set of shared understandings between members or employees of an organisation; something that influences behaviour through the development of shared meaning and mutual beliefs (Sathe 1985; Louis et al 1985: Davis 1984), which is underpinned by the employee's perception and relationships towards their mutual peers (Noland and Kupers 2009). This perspective of organisational culture reinforces a unitary 'top-down' management approach that instils common organisational

symbols, language, ideologies and rituals (Pettigrew 1979) to govern interaction, values and attitudes (Blake and Mouton 1969). This is grounded within the assumption that these characteristics are uniformly accepted throughout an organisation (Goffee and Jones 2002; Williams, Dobson and Walters 1993).

Extrapolating this perspective further it is underpinned by the notion of a strong leadership style that instils culture and governs employee behaviour (Schein 1997), however this structural approach may result in over compliance to structure – not the desired acceptance (Kilman, Saxton and Serpa 1985). From this perspective culture may be described as an ideological feature of an organisation (Harrison 1972) that seeks to influence beliefs and core perspectives of individual employees (Selznick 1957) however potentially not in the desired way. This interpretation sees culture as a variable feature and something an organisation has rather than something it is (Smircich 1983) and is based upon the assumption that employee agency is attune with leadership structures.

In contrast other theorists offer a different perspective, Ott (1989) suggests studying and developing a basic understanding of organisational culture requires above all conceptual analysis. Similarly, Allaire and Firsirotu (1984, p195) state 'Adopting a particular definition of culture is commitment to specific conceptual assumptions and ways of studying culture'. In contrast to the unitary definitions a pluralist perspective that culture is not something an organisation has but rather something it is. This perspective sees an organisation's culture as the process of the organisation's reality; it is an actively ongoing social phenomena (Morgan 1997).

Similarly Saunders, Thornhill and Lewis (2009, p109) state that 'it is the meanings that are attached to these phenomena by social actors within the organisation that need to be understood in order for the culture to be understood'. This identifies the limitations of adopting a typology or classification system for culture when researching the effect of organisational structure on individual agency (Ott 1989).

Pluralist theorists view culture as a 'Dynamic process – a social construction that is undergoing continual reconstruction' (Ibid, p51). However to pursue more detailed pluralist understanding of organisational structure and the employee agency relationship; an exploration of root social theory must take place – examining organisations as social systems.

Organisations as social systems – the premise of power

Following the exploration of the contrasting perspectives of researching organisational culture to determine structural impact on agency, it is important to highlight the social theory in which individual agency is grounded. Agency theory at a base level is concerned with the exploration of the notion that either human action within a social system is individually thought driven or structurally controlled (Sztompka 1991). Giddens and Turner's (1987) theory of structuration explores this – stating that both structure and agency must exist independently and are both directly related. Consideration of this theoretical viewpoint actively critiques the unitary classical approach to organisational management, as labelling culture as a variable feature highlights a potential for incongruence (Allaire and Firsirotu 1984).

Adopting the unitary perspective to culture, however, explores the relationship between an organisation and the employee through a frame of reference (Fox 1966). This highlights the top down unitary approach being underpinned by assumptions that organisations are cooperative enterprises where members unite towards a common goal (Burrell and Morgan 2003). This raises the potential impact of non-structural power and authority; a pluralist frame of reference includes an acceptance of potential disequilibria of the nature and distribution of power (Haralambos and Holborn 1991) including both non-structural power and authority from individual agency and groups within an organisation as a social system.

A social system can be regarded simply as a pattern of social relation that exists over a period of time and space (Giddens and Turner 1987). This directly relates to Eden and Spender's (1998, p16) definition of an organisation as 'a socially designed system, which coordinates the activities of all the role occupants'. The impact of non-structural power in terms of groups and individual agency socialisation can be explored within the theory of enculturation or individual socialisation. The process can be described as individuals accepting and embracing the normative standards of a social system (Haralambos and Holborn 1991) through the internalisation of assumptions, values and artefacts (Schein 1997).

 This furthermore reinforces the self replicating nature of Giddens and Turner's (1987) theory of structuration where social actors create structures and through social action produce

and reproduce more social structures resulting in the normalisation of structural 'rules' (Haralambos and Holborn 1991). This highlights Gidden's (1984, p4) theory of individual agency as the 'study of the active, constructive side of social life but with recognition of the structural framework within which human conduct takes place' and although a unitary viewpoint interprets employee activities to be convergent towards organisational goals – the top-down approach to instilling culture may be different to the social and symbolic realisations of espoused corporate values.

Interaction between individual agency and the power system structures within an organisation may often provoke dysfunctionality (March and Simon 1958). As highlighted by Giddens (1984), however, the individual agent has the capacity to make a difference to the pre-existing social events. Eden and Spender (1998, p44) endorse the view of Hellgren and Lowstedt who state 'If actors are acting individuals, and action is what actors do, such actions are always performed in a social context' and it can therefore be asserted that actions by this definition are almost always interactions – both with other individuals and organisational structures. Therefore the subtext to the individual agency and social structure theory is rooted within organisational power (Eden and Spender 1998). This highlights the premise of both structural and non-structural power within an organisation and develops the need to examine power conceptually.

The concept of organisational power

To explore the concept of power in terms of the relationship between individual agency and organisational structure; French and Raven's (1959) model of organisational power is a starting typology as referenced within Robbins, Judge and Campbell (2010). Identifying five bases of power that includes legitimate, reward, expert, referent and coercive; the model is concerned with identifying sources of power used within organisational leadership. This model sees power within a linear sense reinforcing a 'top-down' approach to management-agency relation.

Power within this unitary framework analysis is applied to govern employee conformity within an organisation, as power legitimised and accepted becomes authority (Eden and Spender 1998). Authority and power can therefore be seen as 'Evidence of a structured system which employees accept as they 'buy into' the organisation' (Ibid, p16).

Foucault and Gordon (1980), however, comment on the social nature of power suggesting that power is omnipresent at every level of a social body or system. This is evident through the relationship between individual agency and organisation structure the rhetorical assertion 'should we not analyse it [power] primarily in terms of struggle, conflict and war?' (Ibid, p90). Highlighting the struggle between agency and structure through its interrelation, Foucault continues to suggest, 'Power is employed and exercised through a net-like organisation. Not only do individuals circulate between its threads; they are always in the position of simultaneously undergoing and exercising this power' (1980, p98). This notion seemingly demonstrates the conflicting pluralist perspective of individual agency exercising and exchanging power; reinforced by the assertion 'individuals are the vehicles of power, not its points of application' (Ibid, p98). This raises the opportunity to introduce a new paradigm of interpretation to explore the relationship between organisational structure and individual employee agency - The concept of the collective mind.

Collective mind – the conceptualisation of organisational structure and individual agency

The concept of collective mind encompasses the factors of both structure and agency and the influence on social-organisational behaviour in a far more holistic sense. The concept can be used to reframe the interrelation between the employee and organisation as it considers the notion of synchronicity between the organisation's mind (structural identity) and the employees mind (individual agency) (Eden and Spender 1998). This dichotomy results in an overlap of the two minds, which forms an individual zone representative of the employee realisation of their organisational role.

Figure 1: The collective mind
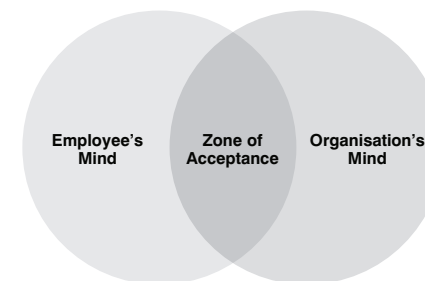
This individual zone was first labelled by Barnard (1938) as the employee's zone of 'indifference' - inferring the employee passively accepts structure and managerial governance within their role. However this was later contested and relabelled by Simon (1997) as the zone of 'acceptance'. This can be perhaps paralleled with the disputed nature of pluralist and unitary culture perspectives. Furthermore based upon the previous social theory examined to define organisational agency and structure (Eden and Spender 1998; Hellgren and Lowstedt 1998; Sztompka 1991; Giddens and Turner 1987) this paper will assume the position of labelling the overlap as the zone of acceptance and consider the impact of social power upon the individual employee.

Collective mind and the influence of power

From the previous distinctions, power can be seen as a technique that individuals engage within; not a conceptual object – but a relation. Power can be seen as the interrelation or relation between management and the individual. The assertion that individuals are the vehicles of power (Foucault and Gordon 1980) can be further applied to make the distinction that organisational management can influence individual actions and behaviour (figure 2). This is evidenced through a power relation between management and the individual that influences the zone of acceptance and individual's actions and behaviours.
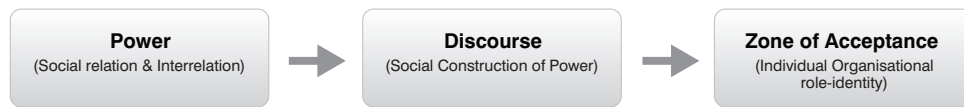
Figure 2: Management influence of behaviour

When this is applied to a social system the volume of power rises with each individual (employee) involved with the play. Power can be interpreted as the interrelation between the individual and the social structure (figure 3) as structure organises and broadens the web of power. Within this distinction, power can be seen as the technique of relation between the individual and the structure of the social system. The individual's role-identity can be viewed as their personal zone of acceptance.

Figure 3: Structure organises and broadens the web of power
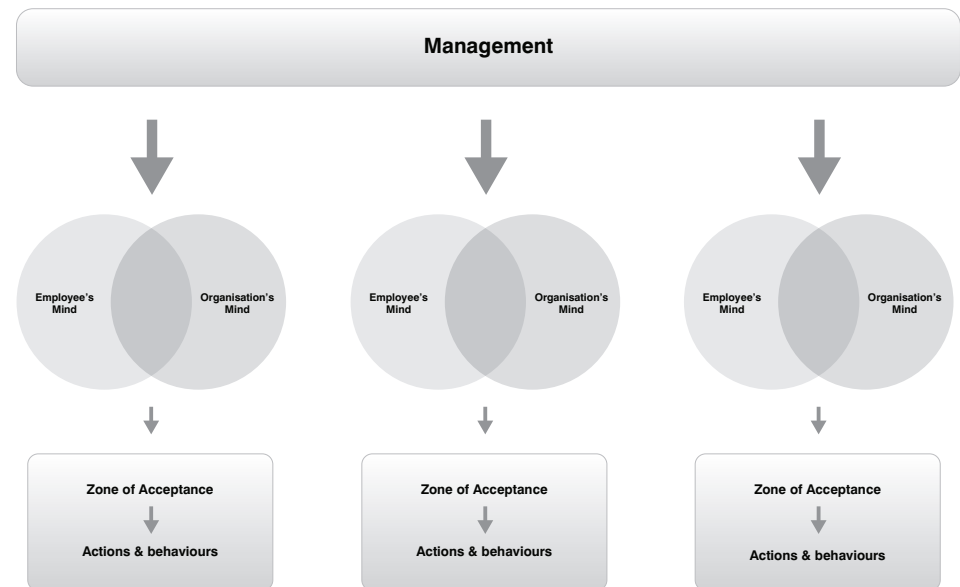
Foucault and Gordon (1980) however assert that socially individuals have no real self-generated identity – identity is merely discourse. Therefore the individual's role-identity or zone of acceptance is merely an influence of power or social interaction. It can therefore be seen as a temporary social construction that can perhaps change and adapt through management's (social) authority and influence (Figure 4).

Figure 4: The influence of power through discourse

Power (Social relation & Interrelation)	→	Discourse (Social Construction of Power)	→	Zone of Acceptance (Individual Organisational role-identity)

The individual's zone of acceptance within this sense can be seen as constantly shifting and adapting through temporary construction and reconstruction. However management does not hold power implicitly power is the technique or action of relation that individuals engage within and legitimise. Thus with the engagement and relation of power comes resistance, which reinforces framing the exercise of power through conflict and war (Foucault and Gordon 1980).

The nature of power and organisational role-identity

Understanding possible resistance towards the organisational relationship of power, through a Foucauldian model of conflict and war (Foucault and Gordon 1980), the nature of power that influences individual identity (zone of acceptance) raises the inquiry into the relationship between power, knowledge and role-identity and consequentially how power is legitimised. By linking these concepts, it can be argued that the way power relation works is through producing 'truths' that gain legitimacy through social acceptance (Foucault and Gordon 1980; Lawler 2008).

Power produces 'truths' that embed within the social system developing coherence and narrative for individuals within the social world. Therefore individuals are the sum of power relations and power is the principle of social reality (Sarup 1993). However it is the nature and the form of this power that differs from the previous concept that modern power operates through construction of rights rather than limitation of them (Lawler 2008).

Normalisation and regulatory power are examples of this. Organisationally individuals are influenced to regulate and discipline themselves with the structure of norms through the process of normalisation (Foucault and Gordon 1980) in line with the narrative in use, which

shares similarity with Eden and Spender (1998) assertions of the employee (individual) buying into an organisation and therefore informing their own zone of acceptance. This, again, can be reinforced by Foucault and Gordon (1980) who suggests power is most effective when least repressive.

This model of normalisation and the acceptance of narrative that influences the employee's zone of acceptance embodies that. Foucault and Gordon assert '[power] traverses and produces things, it induces pleasure, forms knowledge, produces discourses' (1980, p 119) – reinforcing that the relation of power within this sense is not a defying force (Lawler 2008) and that 'Power and knowledge are bound together: the extension of power involves the production of knowledges by which people can be known and understood' (Ibid, p 57).
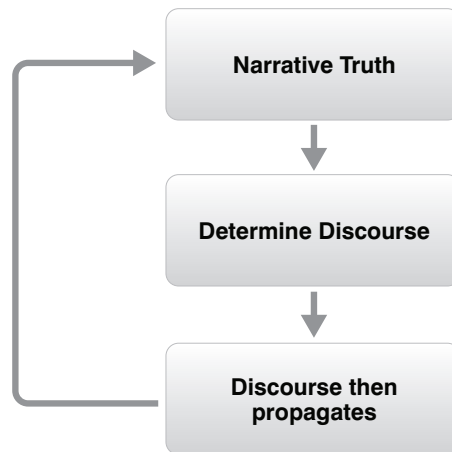
Power, therefore, can be seen as ingrained within social relations and not structurally explicit (Blase and Anderson 1995). It is how the almost abstract symbolic relation of power occurs within a social system that is pivotal to understanding how the informal side of relationships, knowledge and role-identity are influenced by the creation of narrative knowledge (Lyotard 2001) that legitimises organisational 'truth'.

Discourse and narrative truth

Foucault and Gordon (1980) assert that each society creates a regime of 'truth' that is developed in accordance to the beliefs and values of the society. In turn, it is the beliefs and values of the society that reinforce the socially constructed narrative – resulting in 'truth' being interpreted as the control of the majority of power within a social web (Ibid, 1980).

The 'truth' generating apparatuses can be seen as the discourse that informs the narrative and therefore can be seen as self-replicating as social actors create and legitimise the structure of discourse, which in turn reinforces the development of narrative

Figure 5: Narrative truth determines discourse

```
  ┌─────────────────────────┐
  │     Narrative Truth     │◄─┐
  └───────────┬─────────────┘  │
              │                │
              ▼                │
  ┌─────────────────────────┐  │
  │   Determine Discourse   │  │
  └───────────┬─────────────┘  │
              │                │
              ▼                │
  ┌─────────────────────────┐  │
  │     Discourse then      │  │
  │      propagates         │──┘
  └─────────────────────────┘
```

This distinction shares similarity with and can be reinforced through Gidden's and Turner's (1987) theory of structuration. Within this sense it can be asserted that narrative bridges the gap between social reality and understanding for members in terms of the social structure and perhaps orientates and re-orientates members through its reconstruction.

Discourse when influencing the role-identity of the individual is the social construction of power; and is a method of knowledge for the basis of social role-identity. Discourse defines what can be thought through the system of what can be said and therefore cyclically what can be said through the system of thought (Lawler 2008). Therefore discourses can be seen as the relation of power that conceptualises the world for the individual, developing a grand narrative that influences the individual's identity or zone of acceptance. Therefore knowledge based upon a narrative truth – perhaps a unitary management ideology of a top-down approach of instilling culture – may result in overt compliance and not a general acceptance (Kilman, Saxton and Serpa 1985), which may result in a loss of individual objectivity within an organisational environment through the discourse and organisational narratives influence of the individual role-identity.

Conclusion

As the interrelation of power is conducted through the employee and organisation through the zone of acceptance it can be asserted that the symbolic and formal aspects of the

organisational holistically may not be aligned. Employing the collective mind paradigm as an approach to explore this examines the interplay of organisational structure and individual agency – and why misalignment may occur. Through exploring the concept of power socially the article has taken a deductive approach to identifying the process of cultivation and individual socialisation within an organisational setting.

REFERENCES

Allaire, Y and Firsirotu, M. (1984). 'Theories of Organizational Culture'. *Organization Studies*. 5 (3), pp193-226.

Barnard, C, I (1938). *The Functions of the Executive*. USA: Harvard University Press.

Blake, R.R and Mouton, J.S (1969). *Building a Dynamic Corporation Through Grid Organization Development*. USA: Addinson Wesley.

Blase, J. and Anderson, G. (1995). *The Micropolitics of Educational Leadership.* London: Cassell.

Burrell, G and Morgan, G (2003). *Sociological Paradigms and Organisational Analysis*. USA: Ashgate Publishing Limited.

Davis, S.M (1984). *Managing Corporate Culture.* USA: Ballinger.

Eden, C and Spender, J.C (1998). *Managerial and Organizational Cognition*. London: Sage Publications.

Fox, A. (1966) *Industrial Sociology and Industrial Relations*, Royal Commission on Trade Unions and Employers' Associations, Research Papers 3, HMSO, London.

Giddens, A. and Turner, J.H (1987). *Social Theory Today.* Cambridge: Polity Press.

Giddens, A. (1984). *The Constitution of Society*. Cambridge: Polity press.

Goffee, R and Jones, G (2002). *The Character of a Corporation - How your Company's Culture Can Make or Break Your Business* . London: Harper.

Gordon, C. and Foucault, M (1980). *Power/ Knowledge: Selected Interviews and other writings 1972-1977*. England: The Harvester Press.

Haralambos, M and Holborn, M (1991). *Sociology: Themes and Perspectives*. 3rd edition. London: Harpercollins.

Harrison, R. (1972). 'Understanding your Organization's Character' in *Harvard Business Review*. 10 (3), p119-128.

Hellgren, B. and Lowstedt, J. (1998) 'Agency and Organization: A Social Theory Approach to Cognition', in C. Eden and J.C. Spender, (eds) *Managerial and Organizational Cognition,* London, Sage.

Kilman. R. H., Saxton, M. J., and Serpa, R. (1985) *Gaining control of the corporate culture*. Oxford: Jossey-Bass.

Lawler, S (2008). *Identity: Sociological Perspectives.* Cambridge: Polity Press.

Louis, M.R et al (1985). *Organizational culture.* USA: US: Sage Publications, Inc.

Lyotard, J.F (2001). *The Postmodern Condition: A Report on Knowledge.* UK: Manchester University Press.

March, J and Simon, H (1958). *Organizations*. New York: John Wiley.

Morgan, G (1997) *Images of an Organisation*. London: SAGE Publications Ltd.

Mullins, L (2007). *Management and Organisational Behaviour*. 8th edition. England: Pearson Education Limited.

Nolan, T. Kupers, W. (2009). Organisational Climate, 'Organisational Culture and Workplace Relationships'. In Morrison, R. Wright, S.L (eds) *Friends and Enemies in Organisations: A Work Psychology Perspective*. London: Palgrave Macmillan.

Ott, S.J (1989). *The Organizational Culture Perspective*. USA: Dorsey Press.

Pettigrew, A. M. (1979). 'On Studying Organizational Cultures' in *Administrative Science Quarterly*. 24 (3), p570-581.

Robbins, S. Judge, T, and Campbell T (2010). *Organizational Behaviour*. England: Pearson Education Limited.

Sarup, M (1993). *Post-Structuralism and Postmodernism*. 2nd edition. UK: Harvester Wheatsheaf.

Sathe, V (1985). *Culture and Related Corporate Realities: Text, Cases, and Readings on Organizational Entry, Establishment and Change*. England: Richard D Irwin.

Saunders, M., Thornhill, A and Lewis, P (2009). *Research Methods for Business Students*. 4th edition. London: Prentice Hall.

Schein, E (1997). *Organisational Culture and Leadership*. 2nd edition. California: Jossey-Bass.

Selznick, P (1957). *Leadership in Administration*. USA: University of California Press.

Simon, H. A (1997). *Administrative Behaviour.* 3rd edition. USA: The Free Press.

Smircich, L. (1983). 'Concepts of Culture and Organizational Analysis' In *Administrative Science Quarterly*. 28 (3), p339-358.

Sztompka, P (1991). *Society in Action: The Theory of Social Becoming*. Cambridge: Polity press.

Williams, A., Dobson, P., Walters, M (1993). *Changing Culture: New organisational approaches*. London: CIPD.

How can I engage trainee teachers with learning technologies, in preparing them to teach in a digital age?

Steve Ingle

ABSTRACT

This paper outlines the findings of a comparative enquiry into the use of various information communication technologies (ICT) by learners, trainee teachers and qualified teachers in the post-compulsory education sector. Responses from each group highlighted clear differences in technology use and adoption, supporting claims of the divide between digital immigrant instructors and digital native learners. As a teacher educator, I was interested in exploring the implications of this divide for improving my own practice and how trainee teachers particularly might be better prepared to meet the needs of their own learners, the so called 'Net Generation' and emerging 'Social Cyborgs'.

The initial enquiry identified a range of barriers cited by trainee teachers, in the appropriate use of technology in their approach to teaching and learning, including adequate training. Taking a living theory approach to action research, I outline the initial response by trainees, to an intervention to my own practice: the introduction of a technology enhanced learning workshop, demonstrating the use of a range of classroom-based technologies. The paper concludes with a discussion of the findings and provides recommendations which may be useful to teacher educators, as well as implications for improving my own future practice.

KEYWORDS

Action research; teacher education; technology mediated learning; Net Gen; digital wisdom; digital native; digital immigrant; social cyborg.

Introduction and background

'Our students have changed radically. Today's students are no longer the people our educational system was designed to teach' (Prensky, 2001).

Commenting on the implications of a digital-divide between digitally immigrant instructors and their digitally native students, this arguably sensationalist and controversial statement from Prensky back in 2001, provides a useful prompt for teachers and academics to reflect on and evaluate how effectively their teaching, learning and assessment strategies are aligned with the needs of their twenty-first century learners of today. As a teacher educator, I was keen to explore the reality and extent of the proposed digital divide between the use of information and communication technologies (ICT) by learners and their tutors and subsequently, the potential impact and implications for my own practice in preparing trainee teachers to best meet the educational needs of their learners in a digital age.

The true extent of any such divide and subsequent pedagogical considerations for educators, is the focus of much ongoing debate (Margaryan, Littlejohn and Vojt, 2011; Campbell and Finegan, 2011; Prensky, 2011; Bennett, Maton and Kervin, 2008; Selwyn, 2009), with a number of emerging claims that the reality of technology use between adults and young people is much more diverse that Prensky's original dichotomy suggests. Bennett et al (2008) argue that the research on young people's relationships with technology is much more complex than the digital native characterisation may suggest.

> **"Young people may do things differently, but there are no grounds to consider them alien to us. Education may be under challenge to change, but it is not clear that it is being rejected"** (Bennett et al, 2008 p783).

In order to explore the debate further and to gain a better insight into the use of technologies by trainee teachers, I chose to use a practitioner action research methodology. The use of action research as a systematic approach to investigation and as a means to providing an understanding to a problematic situation is well supported as a method of enquiry by practitioners (McNiff and Whitehead, 2005; Kemmis and McTaggart, 1992; Zuber-Skerrit, 1992). By following an action research cycle: Plan,

Act, Observe, and Reflect (Kemmis and McTaggart, 1992), I hoped to identify and implement an intervention to my current practice that may assist the trainee teachers I am working with to appropriately harness the benefits of technology in their approaches to teaching, learning and assessment. Stringer (2004) highlights how action and research are brought together by practitioners to 'engage in careful, diligent inquiry, not for purposes of discovering new facts or revising accepted laws or theories, but to acquire information having practical application to the solution of specific problems related to their work' (Stringer, 2004 p3).

Kemmis and McTaggart (1982, in Burton et al, 2008 p127) define action research as 'the way in which groups of people can organise the conditions under which they learn from their own experience, and make this experience accessible to others'. This definition highlights the democratic, collaborative and participatory nature of insider practitioner action research as a methodology, where the 'teacher-as-researcher' is working closely with research participants (trainee teachers) in the construction of knowledge and insight. Three different styles of participatory action research: technical, practical and emancipatory; can be conducted depending on the level of critical engagement (Kemmis and McTaggart, 1992; Zuber-Skerritt, 1996). I took a practical action research approach to my enquiry, where consideration was given to the 'understanding and interpreting of social factors which have led to a particular situation, with a view to improving that situation' (Opie, 2004 p81), in this case, the experiences and perceptions of trainee teachers around the use and application of learning technologies in their approaches to teaching others.

My research sought to explore the lived experiences, perceptions and use of learning technologies by my trainees, in order to *imagine the solution* to the problem, as suggested by McNiff and Whitehead (2005), and plan the intervention to be implemented. In identifying the need to use of a reflective, rigorous and systematic practitioner action research approach to my enquiry, I worked through the questions proposed by Barrett and Whitehead (1995) as a useful framework for considering the philosophical and methodological influences on my research design process and approach: What is your concern? Why are you concerned? What do you think you could do about it? What kind of evidence could you collect to help you make some judgement about what is happening?

What is your concern?

I am concerned that trainee teachers are missing opportunities to appropriately harness the pedagogical benefits of technology in their approaches to teaching, learning and assessment which could enhance the learning experiences and engagement of their own learners. As a teacher educator, I am concerned with identifying areas of my own professional practice and approach that could be improved to better prepare and equip them with the confidence and skills to be able to harness the benefits of learning technologies. Indeed, I would hope to gather insights that may impact on improving departmental and institutional practice through the collaboration and sharing of my findings. I am not concerned with the collection of large amounts of 'hard facts' in order to verify existing theories or to conduct experiments in order to generalise the results of data. I am more concerned with working with my trainees to explore and interpret their feelings and opinions, their perspectives and shared meanings, in order to develop a deeper understanding and insight around their perceptions and engagement with the use of learning technologies. My actions are shaped by my values as an educator, to engage and empower learners in their own personal and professional development.

My enquiry is very much concerned with the personal and subjective views of trainee teachers and therefore takes an anti or post-positivistic, rationalist, naturalistic and constructivist approach rather than a more positivist, scientific one. The subjective role and values of the practitioner researcher need to be clearly acknowledged to allow the reader to consider the underlying influences on the research approach and findings and to have confidence in the validity and reliability of the research presented. My research focus has clearly been developed and influenced by my professional experiences as a lecturer within initial teacher education. This positioning has allowed me to personally observe to what extent trainees are (or are not) use emerging technologies in their lessons, to informally question trainees on their perceptions around technology mediated learning, its place in lesson planning and its advantages and disadvantages as a teaching, learning and assessment strategy. I am also able to absorb anecdotal feedback from colleagues and college students regarding their experiences with technology and how it is used. I also recognise and acknowledge my interest and background in e-learning developments, having previously held roles with responsibility for organisational change regarding the use of learning technologies,

acting as an advisor on e-learning initiatives and as a member of e-learning and technology enhanced learning professional associations.

I strongly identify as an educational practitioner who values the appropriate use of technology in teaching and learning where there is potential for pedagogical value and recognises the impact that technology has had on my own personal and professional development. This background has undoubtedly influenced my choice of enquiry focus, as I undertook a 'living theory' approach to my action research, influenced by the work of Whitehead (1989). Whitehead (2008 p104) defines a living theory as 'an explanation produced by an individual for their educational influence in their own learning, in the learning of others and in the learning of the social formation in which they live and work.' I acknowledge that my involvement in the research process means that it cannot be objective but by being explicit about my positioning and relationship to the research, I can seek to move to a position of empathic neutrality, a position that recognises that research is not value-free but which advocates that researchers should make their assumptions and the influence of these assumptions on the ways data are collected and analysed, transparent (Snape and Spencer, 2003). I recognise that my research may raise more questions than it answers and it would be inappropriate and perhaps unethical to make generalisations based on the responses but rather to consider how I might use the insight it provides as a basis on which to improve my practice in my work as an educator and researcher.

Why are you concerned?

A review of the literature highlights a widely argued, and controversial, view that the learning preferences, habits and styles of learners are changing, with a growing digital divide between them and their teachers (Campbell and Finegan, 2011; Oblinger, 2004; Veen, 2003). Prensky (2001) identifies these learners as 'Digital Natives', those who represent the first generations to grow up with the new technology of the internet, email, video games, digital music, mobile phones and all the other tools of the digital age. He identifies how this shift in learning approaches and styles is now incongruent with some of the traditional teaching methods used by education professionals. Other descriptions for today's twenty-first century learners who have been raised in a digital world include: the IM (instant-message) Generation (Lenhart, Ranie and Lewis, 2001); Homo Zappiens

(Veen, 2003); the 'Net Generation' (Oblinger, 2004); the Gamer Generation (Carstens and Beck, 2005); New Millennium Learners (Pedro, 2006) and 'Social Cyborgs' (Campbell and Finegan, 2011).

Whatever the label, it is argued that these twenty-first century learners can be characterised by their learning preferences: active, experiential and exploratory approach; use of online and mobile information sources; their ability to multi-task and deal simultaneously with difference sources of digital information (e.g. instant messages, text messages, internet pages and digital media); use of social networking and collaborative media and so-called Web 2.0 technologies and applications; a non-linear approach to accessing and using information sources and navigating resources; instant and online communication and connectivity (Oblinger, 2004; Veen, 2003; Prensky, 2001).

Holmes and Gardner (2006) use the term 'communal constructivism' to describe this expansion in how learners are using e-learning technologies to create new learning for themselves but also to contribute and store their knowledge in a communal knowledge base for the benefit of their community's existing and new learners. This could be seen in the use of wikis (e.g. Wikipedia), as part of virtual learning environments and discussion forums for example.

The Joint Information Systems Committee (JISC) conducted two studies: LEX: Learner Experience of e-Learning study (Creanor et al, 2006); LXP: Student Experiences of Technologies study (Conole et al, 2006) into the use and benefits of e-learning and the use of technology in education and has more recently focused on exploring student experiences and the role of technology in the lives of learners in a digital age. Creanor et al (2006) took an interpretative phenomenological approach to explore the beliefs and intentions that effective e-learners display and the strategies and techniques effective e-learners use. They found that the boundaries between learning and other aspects of learners' lives are becoming increasingly blurred, as learning begins to take on an 'any time, any place' dimension. With mobile and online technologies, learners were able to communicate, collaborate and research at times to suit them and which fitted in alongside work, family and other commitments. These 'e-learners' wished to have tutors who are fully engaged with e-learning but they also relied heavily on informal support networks. Conole et al (2006) explored learners' perceptions of e-learning and the tools

that learners use and identified ways in which learners' study habits are changing, from prioritising the internet for information retrieval to incorporating personally owned tools and technologies into their learning activities.

Both JISC studies identified various issues and constraints with the use of technology in education however, including the reluctance by academic staff to be involved with e-learning. The LEX report shows that learners are very aware when tutors are not fully engaged, or if e-learning activities are being used as a bolt-on extra. The report concludes that given the increased reliance by learners on online communities and social networking websites, a key debate must be how the collaborative and creative potential for emerging technologies can be harnessed for pedagogic gain and an 'urgent requirement for tutors and course designers to explore the potential of social technologies in learning' (ibid p23).

Following an independent inquiry into the experience and expectations of higher education learners and their increasing use of the newest technologies, Hughes (2009 p6) concludes in a more recent JISC report, that there continues to be a digital divide in two areas: the division between the digital 'haves' and 'have nots', in access to, and engagement with, technology; the capability of the technology; and in individual competence. In addition, staff capability with ICT is a 'further dimension of the digital divide, and the use of technology to enhance learning, is still as much of an issue as practical operation' (Hughes 2009 p6).

As a result of growing up in this digital age and being immersed in the use of technology in many aspects of their daily lives, Prensky (2001; 2011) argues that today's students 'think and process information fundamentally differently from their predecessors' and are 'native speakers' of the 'digital age language'. He also draws a distinction between the 'digitally native students' and their 'digitally immigrant teachers'. These immigrants may well begin to embrace and support the use of technologies in their own approaches to teaching, learning and assessment but this may not always be aligned with the way our digitally native students approach their learning. This incongruence could be problematic as Prensky (2001) identifies '...the single biggest problem facing education today is that our digital immigrant instructors, who speak an outdated language (that of the pre-digital age), are struggling to teach a population that speaks an entirely new language.'

Oblinger (2003) has also identified this digital divide between the use and perceptions of

technology between students and their teachers. It is argued that because of the contrast between their comfort with technology and the technology comfort level of teachers, many students find the use of technology in education to be disappointing, with students considering themselves more internet-savvy than their teachers. In an investigation into the use of technology by New Millennium Learners (NML) in OECD countries, Pedro (2006) suggests that the attitudes and expectations regarding learning and teaching have evolved radically from previous generations and whilst once teachers where in command of the opportunities to use e-learning innovations in education situations, the increased use of technology by learners in their personal and private lives means that there ICT skills are outperforming those of their teachers. Accordingly, Pedro suggests that student's expectations around the opportunities for collaborative working and networking, the degree of learning personalisation and the standards of digital quality could have changed dramatically and be completely different from the ones held by their teachers. This incongruence could lead to a growing gap between student and teacher perceptions regarding the quality of the school experience or even lead to some students becoming increasingly disaffected from school life (ibid, 2006).

Campbell and Finegan (2011) identify the emergence of a new 'species' of learner, the 'Social Cyborg', characterised as those learners who have integrated social networks and information communication technology into the way they think, learn, and solve problems. They highlight the need for educators to evolve a new set of learning strategies, along with the tool sets, skill sets, and mindset to serve the need of Cyborg learners. They advocate an adaption of traditional, formalised learning strategies, that target those who learn independently and isolated from technology, to ones that recognise that today's learners are connected to an extensive network of people and information that will be continuously utilised as a learning and problem-solving resource. They view the changing role of educators as learning catalysts, rather than content designers and deliverers.

Whilst much of the literature seeks to explore the digital divide and suggest recommendations to close the 'gap' between the use and adoption of technology by natives and immigrants, Waycott et al (2009) and Caruso and Kvavik (2005) suggest that a clear distinction between 'living' and 'learning' technologies is actually an appropriate and welcomed divide by many students. They often see instant messaging and social networking sites (e.g. Facebook, Twitter, MSN messenger) within the scope of their personal lives and there they should remain. Lohnes and Kinzer (2007) also question the

assumption that the use of technology by the Net Gen should actually lead to a major overhaul in traditional educational practices 'we may not be at the point of changing the classroom practices of either professors or students, contrary to common assumptions' (ibid p4).

Margaryan et al (2011), drawing on the findings from their own study with undergraduate students in 2007, identified that in the case of learning and socialising, students who were 'digital natives' and those who were enrolled in a technical subject (Engineering) used more tools than 'digital immigrants' and students of a non-technical discipline (Social Work). They concluded however, that there was no evidence to support previous claims that current generation of students may adopt radically different learning styles, exhibit new forms of literacies or use digital technologies in more sophisticated ways. Their results suggest that regardless of age and subject discipline, students' attitudes to learning appear to be influenced by the teaching approaches used by lecturers.

Revisiting the relevance of his original distinction between the digitally native learner and immigrant tutor, Prensky (2009) more recently asserts a move towards the recognition of the power of digital enhancement and the need for both learners and their educators to develop digital wisdom, defined as 'wisdom arising from the use of digital technology to access cognitive power beyond our innate capacity and [the] wisdom in the prudent use of technology to enhance our capabilities'.

These continued discussions raise many questions for those involved in the teaching and learning of young people and how the development of technology affects what, how and who we teach. With so much debate around the purpose, use and value of technology in education, I felt the need to investigate further the position and identity of my teacher trainees, situated as both learner and teacher, and how their views and use of technology may impact on my approach and responsibilities in preparing them to teach in a digital age.

What do you think you could do about it?

As a teacher educator, it is within my control to adapt and enhance the level of specialist support and resources available to trainee teachers (trainees) completing their initial teacher training. By exploring the perceptions and current use of technology mediated learning and barriers to its effective use by trainees, I hoped to identify interventions to my practice that will improve the appropriate and effective use of learning technologies

in the classroom, by better preparing trainees to teach in a digital age. The intervention strategies to be developed and implemented would be identified as a result of initial data gathering, exploring the comparative use of technology between digital native learners, their digital immigrant tutors and those positioned as both learner and tutor, the trainee teachers themselves.

What kind of evidence could you collect to help you make some judgement about what is happening?

In line with accepted cycles of action research, I identified two main opportunities to gather evidence for my planned enquiry. The first was to gather initial data following identification of the problem. This sought to explore trainees' lived experiences and perceptions of learning technologies, with a view to gaining insight into the perceived barriers to engagement and possible intervention strategies to introduce. The second was to gather data following the intervention, to explore its impact (if any) and how trainee perceptions and experiences of learning technologies may have changed. My selected methodology of practitioner action research sits within the constructivist paradigm which is generally associated with qualitative research, and reflects the ontology of multiple social realities (Bryman, 2001; Denzin and Lincoln, 2005) and an epistemological position where knowledge cannot be separated from experiences of those who construct the social realities (Knight, 2002; Mason, 2002).

Opie (2004 p16) defines methodology as the 'theory of getting knowledge and the consideration of the best ways, methods or procedures, by which data that will provide the evidence basis for the construction of knowledge about whatever is it is that is being researched, is obtained'. He goes on to highlight how the credibility of any findings, conclusions and claims depends on the match between methodology, research methods (procedures) and the research questions, and therefore 'methodology and procedures determine the nature of the findings of the research'. Punch (2009 p19) also stresses the need for compatibility and integrity in the way research questions and research methods fit together in a study and how paradigms have implications both for the sorts of research questions asked and the methods used to answer them. He outlines the importance of 'question-method connections' where the research questions have a logical priority over the method of research. Choosing research methods or procedures best matched to

answer the research question, will avoid the notion of 'methodolatory'.

> **"Methodolatory, a combination of method and idolatry, describes a preoccupation with selecting and defending methods to the exclusion of the actual substance of the story being told. Methodolatory is the slavish attachment and devotion to method that so often overtakes the discourser in the education and human services fields"** (Janesick, 1994 in Punch, 2009 p27).

The positivist, quantitative paradigm is often associated with research methods such as experiments, tests and statistical questionnaires – methods which generate often large amounts of empirical data to test the validity, and 'prove' a hypothesis. Conversely, post-positivist interpretist and constructivist paradigms are often associated with research methods which generate data to capture participant experiences, thoughts and beliefs, for example interviews, biographies, diaries and journals.

Action research is generally considered as a qualitative approach, although a mixed-method approach to data collection is often appropriate (Cohen et al, 2007; Punch, 2009) including case studies, interviews, focus groups, observation and questionnaires. In order to identify possible interventions to my own practice that might better prepare teacher trainees to harness the benefits of technology when working with their own learners, I first wanted to investigate their own use and adoption of different technologies and perceived barriers (Part 1). An online questionnaire was used to gather a mixture of quantitative and qualitative data that compared the use of different technologies between 16 – 19 year old learners, trainee teachers and qualified tutors in the post-compulsory education sector. A mixture of closed responses and open questions were used to investigate the use of different technologies, including online, social and Web 2.0 applications, the extent to which these technologies were utilised in lessons and perceived barriers to adoption of these technologies.

To capture the impact of the workshop, I used a brief written questionnaire with a mix of open and closed response questions (Part 2). The questionnaire aimed to identify how effective the interventions had been in increasing the confidence levels of trainees in the use of technology and if they were more likely to harness the benefits of technology in their approaches to teaching and learning.

In order to ensure that my research was conducted with due regarding to sound ethical principles, I consulted the British Educational Research Association (BERA, 2004) ethical guidelines for educational research, taking the necessary steps to ensure that all participants were informed of the purpose and process of the research, to enable them to make voluntary informed consent. I also considered the issue of how reflexive action research may affect and impinge on others, as I am both teacher and researcher. I ensured that my research activities did not adversely affect the service provided to trainees and ensured I sought and received consent from the Faculty to carry out the action research project.

I am also aware of how my role in the research may have influenced the findings. Trainees are likely to perceive my interest in and use of technology in education and may be more likely to provide positive responses to questions regarding their use of technology in education. The impact of power relationships operating between teacher and student, researcher and participant should be considered and acknowledged.

Findings and discussion

Part 1

195 responses to the initial online questionnaire were collected and analysed. There were 38 abandoned responses and 19 partial completions, suggesting that the time taken to complete or the usability of the questionnaire was not appealing to some participants. The length of the survey is a consideration and on reflection, some questions could have been removed. 54 percent of respondents were students, 28 percent trainee teachers and 18 percent qualified teachers/ lecturers. This profile broadly supports the age demographic of respondents: 39 percent were aged 16 - 19; 25 percent aged 20 – 25 and the remaining 36 percent 26 and over, suggesting that some trainee teachers were over 25 and some students were over 19. The gender split was almost equally balanced with 51 percent of respondents being female and 49 percent male.

When asked to rate their levels of confidence in using different aspects of technology, the vast majority, 99 percent, felt confident or very confident at using the internet. This

is perhaps not surprising as data was collected via an online questionnaire. The impact of this research method on the results should be acknowledged. The area where most respondents felt less confident was dealing with technical problems. Levels of access to technology were generally high, with the exception of handheld games consoles, for trainee and qualified teachers, and digital voice recorders, for all respondents.

When asked to consider their current use of technology, it was interesting to observe the difference in use between students, trainee teachers and qualified teachers/ lecturers. Figure I highlights the differences in technology use between the three groups, which supports much of the literature around the preferences and behaviours of the digital native (Net-Gen) student. Students had significantly greater use of technology in 10 of the 15 areas, most significantly online gaming, the use of online television, instant messaging, social networking, uploading video and website creation. Trainee teachers were ahead of students and qualified teachers in their use of the micro-blogging tool Twitter, Google Documents and exploration of virtual worlds (Second Life). Established teachers took the lead in only one area, video conferencing, which was an arguably predictable result. This brief comparative study appears to support the notion of a broad digital divide in technology use between natives and immigrants (Prensky, 2001; Margaryan et al, 2011).

When asked to consider the use of technologies in their lessons (Table 1), PowerPoint presentations were the most used, with mobile phones, voting kits, video cameras and voice recorders the least used. When asked to consider the factors most influential in the use of technology in their approach to teaching and learning (Table 2), trainee and qualified teachers identified greater access to resources as the most influential, followed by the reliability of technology, the levels of expectation in the use of classroom technologies from their own learners and the availability of training in the use of learning technologies. These results echo some of the findings of Margaryan et al's (2011) study into factors preventing the use of technologies in university learning, where three broad types of issues consistently emerged: digital skills, reluctance to change, and systemic problems such as lack of time and infrastructure issues. In this study, both students and staff also considered lack of skills in using technology a key issue.

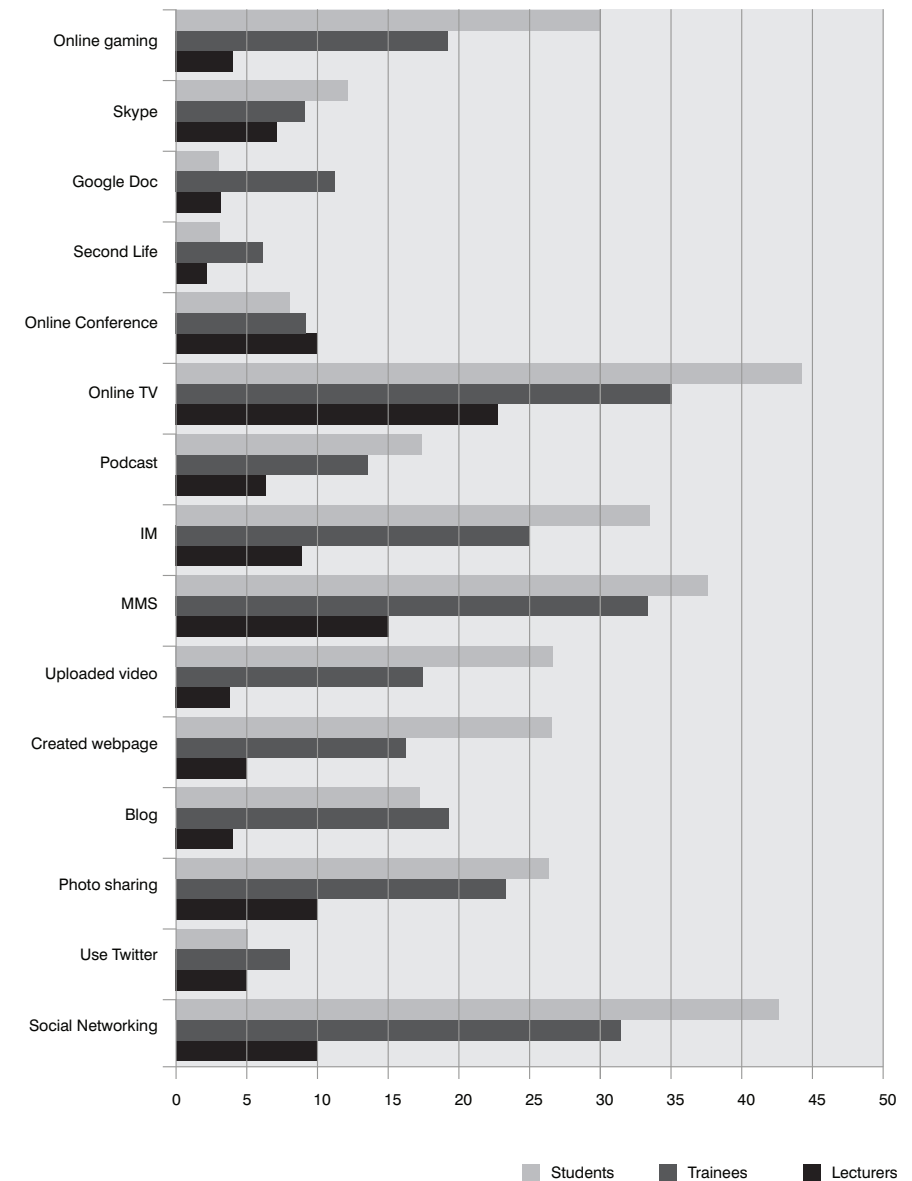Figure 1 - Current Technology Use: Students, Trainee Teacher, Experienced Teacher and Tutors

Table 1 – 'To what extend are the following technologies used in your lessons?'

Item	Often	Sometimes	Rarely	Never
Interactive whiteboards	43.4%	30.2%	5.7%	20.8%
Mobile phones/ devices	3.8%	20.8%	22.6%	52.8%
Websites	54.7%	32.1%	9.4%	3.8%
Video clips	49.1%	30.2%	9.4%	11.3%
Audio clips	22.6%	43.4%	17.0%	17.0%
PowerPoint presentations	83.0%	15.1%		1.9%
Electronic voting kits		7.5%	15.1%	75.5%
Virtual Learning Environment (VLS)	30.2%	30.2%	13.2%	24.5%
Video cameras	7.5%	18.9%	28.3%	45.3%
Digital cameras	7.5%	26.4%	26.4%	39.6%
Voice recorders	5.7%	18.9%	28.3%	47.2%
Social networking / collaboration spaces	9.4%	11.3%	28.3%	50.9%
Average %	26.4%	23.7%	17.0%	32.5%

Table 2 – 'Rank how influential each of the given factors would be in increasing the use of technology in your approach to teaching and learning'

Factors	Average Rank
Greater access to resources	2.5
Increased reliability of technology	3.4
Requests from learners	3.6
Additional training in the use of technology	4.1
Faster internet / network connection	4.8
Organisational policy / strategy	5.3
As a requirement of inspection	5.3
Pressure from management	5.8

Part 2

Considering this initial data, I identified an area of intervention to my own practice that was within my control. I decided to address the issue of training in the use of technologies, ranked as the fourth most influential factor in technology adoption (Table 2). As a teacher educator on the postgraduate teacher training programme, it was within my control to introduce a 'technology mediated learning workshop', with the aim of demonstrating the use of those technologies cited by respondents as less used in lessons.

I designed and implemented a three hour workshop that introduced, demonstrated and modelled a range of technologies that might be used in teaching and learning: the use of a short message service (SMS) 'Text Wall' to capture and display student comments sent via mobile phone text message onto interactive whiteboards; verbal blogging technology via 'phone (phlogging); the use of photo evidence capture via mobile devices and a student response electronic voting system. The workshop involved a single cohort of 21 initial teacher trainees studying a generic post-compulsory postgraduate certificate in education, and was introduced as part of a professional skills development module. Following an initial introduction and demonstration, trainees were invited to familiarise and experiment with the technologies themselves and to consider potential applications in their own teaching within their professional placements.

Following the intervention workshop, trainees were invited to anonymously complete a paper-based questionnaire. Out of a potential 21 possible respondents, 16 responses were returned, a response rate of 76 percent. All respondents indicated they had found the workshop 'very useful', with 50 percent 'a little more likely' and 50 percent 'much more likely' to use technology in their teaching going forward. When asked if they felt more or less confident in the use of technology following the workshop, 50 percent were 'a little more confident', 38 percent 'much more confident' and 12 percent felt 'about the same'. From the qualitative responses given to the open questions, where respondents were invited to provide further comments in support of their choices, some emerging themes arose. Whilst respondents did feel generally more confident and likely to use technology in their teaching, access to reliable resources was still a major influencing factor:

"During my teaching placement, I have had access to very limited technologies, so having the workshop showed me all the latest technologies and what we can do with them" *(Respondent 1).*

"I feel much more likely to use technology in my teaching; however, it will depend on the variety and quality of equipment provided by my workplace" (Respondent 2).

"The workshop provided me with the opportunity to use and develop the skills needed with the technology. It helped as I did not have access to any technology within my placement" (Respondent 3).

These responses align with the findings from Part 1 of the research, with access to suitable resources being the most important factor influencing the adoption of technology in their approach to teaching.

Recommendations

Due to the small number of responses received, it is difficult and problematic to generalise findings but it reasonable to suggest that my intervention was effective in increasing awareness and confidence levels of trainees, to consider the future use of technology in their approach to teaching and learning with their own students. Findings from Part 1 of the action research cycle appear to support the perceived notion of a digital divide in technology adoption between natives and immigrants and signposts avenues of future research activity that would be worthy of further investigation, for example, how teacher trainees identify themselves within this debate, positioned as both learner and emerging teacher and what they view as the priorities for their own professional development in teaching in a digital age. Prensky's (2009) distinction of a new digital wisdom for both natives and immigrants is also an area for further exploration within teacher education, with clear links to developments and debate around notions of digital literacies and the role of teachers altogether.

A potential extension of the research would be to explore the impact of my intervention on the 'end-user' that being the students taught and developed by trainees in their professional placements and subsequent early career employment. An investigation into the pedagogical impact of the use of technology mediated learning in these environments is perhaps the best way to make informed judgements into the value of any intervention aimed at improving my practice in my work as an educator and researcher.

Following the stages of the action research cycle, and in identifying a living educational theory grounded in the findings of my own practitioner research, it is useful to reflect

on the research outcomes and the wider literature and its potential implications for improving my future practice. Feedback from the intervention allowed trainees to make a number of suggestions for further development: that the workshop is brought forward in the programme, so that they would have greater opportunities to become familiar and competent in their use, in order to introduce technology into their professional placements. With this in mind, I will recommend that the workshop be built into the professional development module as a permanent feature but earlier into the overall programme scheme. Trainees also suggested that a follow up workshop session could be introduced which allows them further time to practice, play and experiment with the technologies in a safe environment where support is on hand. As the development of technologies moves at such a fast pace, I recognise the need to remain up-to-date and to attend appropriate CPD opportunities, to ensure I am able to expose trainees to the most relevant and effective technological developments that would be appropriate for their learning environments and that best support the dynamic needs of the Net Gen.

Although I approach my practice with a 'pedagogy first, technology second' ethos, I am aware of the impact of my own enthusiasm for eLearning and to ensure that I remain respectful of those trainees who do not share a passion and enthusiasm for technology and prefer to use more traditional methods. I do recognise however, my role and skills in ensuring trainees are able to meet the overarching professional standards for teachers in the lifelong learning in demonstrating minimum levels of engagement and competence with technology in their use of classroom technologies, as outlined by the professional body for further education teachers (LLUK, 2007). Completing this piece of action research also served to raise the issues of technology mediated learning generally, and promoted discussion and debate amongst both trainees and colleagues. Whatever the outcomes, the stimulation of critical debate and reflection in such a prolifically debated area of pedagogy today is surely a useful activity for learners, trainees and academics alike.

REFERENCES

Barrett J. and Whitehead J. (1995) *Supporting teachers in their classroom research*. University of Bath: School of Education.

Bennett S., Maton K. and Kervin L. (2008) 'The 'digital natives' debate: a critical review of the evidence'. *British Journal of Educational Technology*. 39 (5), pp. 775–786.

Bryman A. (2001) *Social Research Methods*. Oxford: OUP.

Burton N., Brundrett M. and Jones M. (2008). *Doing Your Education Research Project.* London: Sage Publications.

Campbell J. and Finegan W. (2011). 'Dawn of the Social Cyborg'. *Training Magazine*. Minnesota: Lakewood Media Group. Available from: www.trainingmag.com/article/dawn-social-cyborg [Accessed July 2011].

Caruso J. and Kvavik R. (2005) *ECAR study of students and information technology 2005: Convenience, connection, control and learning.* Colorado: Educause. Available from: http://net.educause.edu/ir/library/pdf/EKF/ekf0506.pdf [Accessed: February 2010].

Carstens A. and Beck J. (2005) 'Get ready for the gamer generation'. *TechTrends*. 49 (3), pp 22-26.

Cohen L., Manion L. And Morrison K. (2007) *Research Methods in Education.* Sixth edition. Oxon: Routledge.

Conole G., de Laat M., Dillon T. and Darby J. (2006) LXP: *Student experiences of technologies*. JISC report . Available at: www.jisc.ac.uk/media/documents/programmes [Accessed March 2010].

Creanor L., Trinder K., Gowan D., Howells C. (2006) LEX: *The Learner Experience of e-Learning study*. JISC report . Available from: www.jisc.ac.uk/uploaded_documents/LEX%20Final%20Report _August06.pdf [Accessed March 2010].

Denzin N. and Lincoln Y. (2005) *Handbook of qualitative research*. 3rd edition. California: Sage.

Holmes B. and Gardner J. (2006) *e-Learning Concepts and Practice*. London: Sage.

Hughes A. (2009) '*Higher Education in a Web 2.0 World*. JISC report. Available from: www.jisc.ac.uk/publications/generalpublications/2009/heweb2.aspx#downloads [Accessed December 2010].

Kemmis S. and McTaggart R. (1992) *The Action Research Planner.* 3rd edition. Victoria: Deakin University Press.

Knight P. (2002) 'Learning Contracts'. *Assessment for Learning in Higher Education.* Birmingham: SEDA series.

Lenhart A., Rainie L., and Lewis O. (2001) *Teenage Life Online: The Rise of Instant-Message Generation and the Internet's Impact on Friendship and Family Relationships.* Washington: Pew Internet and American Life Project.

Lohnes S. and Kinzer C. (2007) 'Questioning assumptions about students' expectations for technology in college classrooms'. *Innovate*. 3(5). Available from: http://www.innovateonline.info/index.php?view=articleandid=431 [Accessed October 2010].

LLUK (2007) *New overarching professional standards for teachers, tutors and trainers in the lifelong learning sector* . London: Lifelong Learning UK, available from: www.lluk.org/documents/professional_standards_for_itts_020107.pdf [Accessed March 2010].

Margaryan A., Littlejohn A., and Vojt G. (2011) 'Are digital natives a myth or reality? University students' use of digital technologies'. *Computers and Education*. 56. pp. 429-440.

Mason J. (2002) *Qualitative Researching*. London: Sage.

McKernan J. (1996) *Curriculum action research: a handbook of methods and resources for the reflective practitioner*. London: Kogan Page.

McNiff J. and Whitehead J. (2005) *Action Research for Teachers – A practical guide.* London: Fulton Publishers.

Oblinger D. (2003) Boomers, *Gen-Xers and Millenials – Understanding the New Students*. Available from: http://net.educause.edu/ir/library/pdf/erm0342.pdf [Accessed April 2010].

Oblinger D. (2004) 'The Next Generation of Educational Engagement.' *Journal of Interactive Media in Education*. Available from: www-jime.open.ac.uk/2004/8 [Accessed July 2010].

Opie C. (2004) *Doing educational research – a guide to first time researcher.* London: Sage Publications.

Pedro F. (2006) *The New Millennium Learners: Challenging our Views on ICT and Learning*. OECD Centre for Educational Research and Innovation (CERI). Available from: www.oecd.org/dataoecd/1/1/38358359.pdf [Accessed August 2011].

Prensky M. (2001) 'Digital Natives, Digital Immigrants', *On the Horizon*. MCB University Press. 9 (5). Available from: www.marcprensky.com [Accessed June 2009].

Prensky M. (2009) 'H. Sapiens Digital: From Digital Immigrants and Digital Natives to Digital Wisdom'. *Innovate*. 5 (3). Florida: Nova Southeaster University. Available from: www.innovateonline.info/index.php?view=article&id=705 [Accessed February 2011].

Prensky M. (2011) 'Is the Digital Native a Myth? No'. Learning and Leading with Technology. *International Society for Technology in Education*. 39 (3), pp. 6-7.

Punch K. (2009) *Research Methods in Education*. London: Sage.

Selwyn N. (2009) 'The digital native: myth and reality'. *Aslib Proceedings: New Information Perspectives*. 61 (4), pp. 364–379.

Snape D. and Spencer L. (2003) 'The Foundations of Qualitative Research' in Ritchie J and Lewis J (eds) *Qualitative Research Practice*. London: Sage.

Stringer E. (2004) *Action research in education*. New Jersey: Pearson Prentice Hall.

Tapscott D. (1998) *Growing up Digital, The Rise of the Net Generation*. New York: McGraw-Hill.

Veen W. (2003) 'A new force for change: Homo Zappiens'. *The Learning Citizen*. (7), pp. 5-7.

Waycott J., Bennett S., Kennedy G., Dalgarno B. and Gray K. (2009) 'Digital Divides? Student and staff perceptions of information and communication technologies'. *Computers and Education* 54 (2010) pp. 1202 – 1211.

Whitehead J. (1989). 'Creating a Living Educational Theory from Questions of the Kind, 'How do I Improve my Practice?''. *Cambridge Journal of Education*. 19 (1), pp. 41-52.

Whitehead J. (2008). 'Using a living theory methodology in improving practice and generating educational knowledge in living theories'. *Educational Journal of Living Theories*. 1(1), pp. 103-126. Available from: http://ejolts.net/node/80. [Accessed March 2011].

Zuber-Skerrit O. (1992) *Action Research in Higher Education: Examples and Reflections.* London: Kogan Page Ltd.

Critical Commentary - Issue 5
We would like to thank all of our reviewers for contributing to this issue of Critical Commentary.

Reviewers

ARTICLES