

## **Evaluation of on-campus and off-campus training of Foundation Phase Physical Education teachers at North-West University, Potchefstroom Campus**

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### **Abstract**

Optimal gross motor and perceptual motor development at a young age plays an essential role in the learner's holistic development, as it forms the foundation for the cognitive, affective and physical domains of early childhood development. In light of the importance of motor development, the new South African Curriculum and Assessment Policy Statement (CAPS), stipulates that 2 hours teaching time per week should be dedicated to Physical Education (PE) in the Foundation phase. However, as PE has only recently been reinstated in the South African school curriculum after an absence of more than 9 years, schools face several challenges, including current teachers who are under- and unqualified to teach PE. The urgent need for Foundation Phase teacher training in PE has led to several on-campus as well as off-campus models for Foundation Phase PE teacher training at the North-West University. The purpose of this study was to evaluate on-campus and off-campus Foundation Phase PE teacher training models, in order to improve and optimise the delivery of teachers for this critical component of Foundation Phase education.

Following a quantitative research design, a total of 200 stakeholders in the on-campus and off-campus teacher training models, including students, lecturers and principals, were asked to complete questionnaires containing questions pertaining to specific aspects of the training programmes, as well as the distance training model in comparison with the on-campus model.

Results show that practical training of fundamental motor skills and basic sport skills, improvisation of equipment, safety measures and the organisation of PE classes were considered as components of the programmes which needed more emphasis. According to the principals, the distance training model should include more encompassing support with regard to the acquisition and teaching of movement skills, especially those of a technical nature, like educational gymnastics and basic sport skills. Recommendations further included the increased use of technology, especially DVDs and video clips which can be sent by e-mail or mobile phones.

**Key words:** Foundation Phase Physical Education, teacher training, distance education.

### **Introduction**

Optimal gross motor and perceptual motor development at a young age plays an essential role in learners' holistic development as it forms the foundation for the cognitive, affective and physical domains of early childhood development (Skinner & Piek, 2001: 73; Gallahue & Cleland Donnelly, 2003: 25). Foundation Phase Physical Education, which is based on gross and perceptual motor development, has received renewed emphasis in the new South African Curriculum & Assessment Policy Statement (CAPS) (Department of Basic Education, 2010), which has led to the birth of several distance programmes, training Foundation Phase teachers in Physical Education in South Africa. The practical nature of Physical Education, however, poses several challenges for teachers and student teachers to successfully teach Physical Education and which need to be addressed within distance teacher programmes. These challenges include the organisation of large numbers of learners to constructively perform and learn new movement skills, addressing diversity within practical classes and planning and improvising on equipment and apparatus (Van Deventer, 2004: 107; Du Toit, Van der Merwe & Rossouw, 2007: 249).

### **Literature review**

Gross motor development constitutes the learning and improvement of large muscle movements like running and climbing, which form the foundation for fine motor skills like writing and cutting (Malina,

Bouchard & Bar-On, 2004:7). Perceptual motor development includes all movements which are dependent on the integration of the sensory and the motor neural systems (Malina *et al.*, 2004:7; Gallahue & Cleland Donnelly, 2003: 25). The perceptual motor skill of throwing and catching a ball, for instance, develops perceptual motor aspects like hand-eye coordination, body awareness and spatial awareness, which are all essential for success in numeracy and literacy (Malina *et al.*, 2004:7). Furthermore, gross and perceptual motor development forms the basis for the learning of fundamental movement skills, specific sport skills and dance skills, which constitute the curriculum of Foundation Phase Physical Education in the CAPS (DoBE, 2010).

Gross and perceptual motor development receives renewed recognition within Physical Education in the CAPS which is to be implemented in the Foundation Phase in 2012 (DoBE, 2010). After an absence of more than 9 years from the national curriculum, Physical Education (PE) was reinstated as a learning outcome of Life Skills in the Foundation Phase and Life Orientation in the Intermediate, Senior and FET Phases in 2008 (Department of Education, 2008), although no time was specifically allocated to Physical Education in the Foundation Phase. This has changed in the new curriculum documents, as the CAPS stipulates 2 hours teaching time per week dedicated to Physical Education (PE) in the Foundation phase as from 2012 (DoBE, 2010).

The nature of this renewed and increased time allocation for PE in the Foundation Phase following an absence of more than 9 years from the Foundation Phase curriculum (SADoE, 2008) has caused many of the same implementation problems as experienced by other countries with similar situations. Among others, these implementation challenges include shortages of facilities and apparatus, negative attitudes towards PE, too little time allocation and, most prominently in the Foundation Phase, a lack of qualified teachers to present PE (Van Deventer, 2004: 107; Du Toit *et al.* 2007: 249).

The need for qualified Foundation Phase PE teachers has led to the development of a number of new Foundation Phase PE teacher training programmes in South Africa, several of which are presented at the Potchefstroom Campus of the North-West University. Furthermore, distance learning Foundation Phase PE teacher training programmes have emerged together with the rise in other teacher training distance programmes, addressing the national need for expanding teacher training opportunities to rural areas and making learning accessible to more student teachers (Fresen & Hendriks, 2009: 2).

However, as St. Pierre (1998: 351) and Antoniou and Tokmakidis (2001: 83) emphasise, some issues should be more closely investigated when presenting distance Physical Education programmes. The most prominent of these issues include pedagogical issues related to distance learning-based course design and instruction, and evaluation issues (St. Pierre, 1998: 351; Antoniou & Tokmakidis, 2001: 83; Bennett & Green, 2001: 3).

Pedagogical issues are based on the question of whether Foundation Phase students who follow the distance education model, will learn as much as on-campus students (Bennett & Green, 2001: 3). Although it is commonly believed that teaching and learning in distance education are not possible without the comprehensive use of technology like the Internet, computer-assisted learning experimental kits and video-conferencing (Goulmaris, Koutsouba & Giosos, 2008: 60; Stow, 2005: 58), Yaman and Turkey (2009) agree with Bennett and Green (2001: 4) and Grayson (2010: 29) that effective teaching and learning are most dependent on the organisation and motivation of the instructor and the student. For students to learn, an instructor must continuously communicate with his students, engaging them to share ideas and think critically about questions (Bennett & Green 2001: 4). The instructor should also give timely feedback on his students' progress (Yaman & Turkey, 2009). As the majority of students taking distance teacher education courses in South Africa are situated in rural areas (Fresen & Hendriks, 2009:

2), where modern technology like the Internet is not readily available, communication in other ways is all the more important.

The practical nature of Foundation Phase PE makes the communication between instructor and student more difficult than in theoretical courses. According to Stier and Shneider (2009: 63), practical field work is considered unsuitable for distance education as it requires the physical presence of the instructor. The instructor not being physically present further leads to an evaluation issue which is unique to PE distance programmes, namely the issue of a lack of timely feedback on the execution of practical movements (Yaman & Turkey, 2009; Antoniou & Tokmakidis, 2001: 84).

Several researchers, however, agree that obstacles pertinent to the practical nature of PE, or Kinesiology, can be overcome by using creative educational materials suitable for distance learning, such as the use of mobile phone technology (Goulimaris *et al.*, 2008: 69; Yaman & Turkey, 2009; Grayson, 2010: 29). Grayson (2010:29) suggests that pictures and video clips of the execution of practical skills can be communicated between the instructor and student *via* mobile phones, and mentions the use of an e-platform which is suitable for use on mobile phones.

The Foundation Phase PE distance education programme presented at the Potchefstroom Campus of the North-West University is considered equal to the on-campus programme in terms of accreditation. Currently, Foundation Phase students enrolled in off-campus programmes receive a study guide which is specifically developed for distance learning, and study material in the form of a hard copy manual. Electronic notes and video clips are posted on an e-platform for students who have access to computer technology. The question arises, however, whether this programme is truly equal to the on-campus model according to its stakeholders, which include the enrolled students as well as principals of schools where these students are employed, and how it can be improved. The purpose of this study is therefore to investigate the opinions of students enrolled in off-campus as well as on-campus Foundation Phase PE teachers' training programmes, as well as those of principals employing off-campus Foundation Phase students, with regard to the content and delivery of current and future on-campus and off-campus Foundation Phase PE teacher training programmes.

## **Method**

Each method used in the study will be explored in more detail below.

Quantitative methodology was mainly applied by means of a survey, supported by limited qualitative methodology through interviews. The quantitative investigation was incorporated with a strong positivistic foundation. The qualitative investigation focussed on the interpretation of the subjective experiences and meaning attribution of the principals and was therefore approached from an interpretive paradigm.

## **Population and sample**

The population of the study consisted of all the students enrolled in the Foundation Phase PE course at the Potchefstroom Campus of the North-West University in South Africa. A total of 89 on-campus students completed the questionnaire during classes, whereas 10 off-campus students (constituting 35.7% of the total of 28 off-campus students who received the questionnaire) returned the questionnaire. In support of this data, 4 principals of schools (two from a previously Model C-schools, one from a private school, and one from a school in a previously disadvantaged community) where off-campus Foundation Phase PE students were employed, were interviewed.

### **Measurement instruments**

The standardised questionnaire of Du Toit and Van der Merwe (2010) was adapted to evaluate students' opinions regarding the suitability of different content sections of the Foundation Phase PE training courses and their opinions regarding aspects of the delivery of the programmes for off-campus purposes. The first section of the questionnaire involved demographic information, while the questions in the second section used a 4-point Likert scale according to which participants could choose between *irrelevant*, *relevant*, *important* and *crucial*. Additionally, three questions were open-ended questions concerning the positive and negative points of the Foundation Phase PE programme, and recommendations for improvement of the programme for distance education purposes.

The 4 principals were interviewed through semi-structured interviews, investigating their opinions with regard to the suitability of different content sections of the Foundation Phase PE training courses for distance learning and their opinions regarding aspects of the delivery of the programmes for off-campus purposes, in light of their experiences of the off-campus students employed and presenting PE in the Foundation Phase at their schools.

### **Data collection procedures**

All on-campus students were asked to complete the questionnaire during a Foundation Phase PE teachers' training class. Before the questionnaires were handed out, participants were briefed with regard to the purpose of the study, and instructions on how to complete the questionnaire. Participants were informed that their participation was voluntary, that their answers were to be treated with confidentiality and that they were under no pressure to participate. Off-campus students received the same information on the first page of the questionnaire, which was mailed to them. Principals were interviewed in their offices at their schools, and all interviews were recorded and transcribed verbatim.

Ethical approval was obtained for the study from the ethical committee of the North-West University (NWU-00022-10-A2).

### **Analysis of the data**

The quantitative data was analysed using descriptive statistics, whereas answers to open-ended questions and participant responses to questions in the interview schedule were categorised into themes and analysed according to the guidelines of Henning (2004: 104). These guidelines entail that, firstly, the collection of transcribed interviews are read through to get a global impression of the content, but no formal meaning is attributed to a single unit yet (Henning, 2004: 104). This is the first step in a process known as "open coding", whereby the codes are selected according to what the data mean to the researcher. Secondly, the set of transcripts are read again and units of meaning are identified. Thirdly, units of meanings are marked and labelled, and finally the related codes can be grouped or categorised and named inductively (Henning, 2004:104). Using these guidelines, themes and sub-themes were refined as identified independently by each participant.

### **Results**

#### **Closed questions**

Closed questions in the survey entailed the demographic characteristics of participants as well as the Likert-type questions. The demographic data of the on-campus and off-campus students is presented in table 1.

**Table 1: Demographic data of on-campus and off-campus Foundation Phase students (N = 99)**

|                                     | <b>On-campus (n = 89)</b> | <b>Off-campus (n = 10)</b> |
|-------------------------------------|---------------------------|----------------------------|
| <b>Age:</b>                         | 64                        | 4                          |
| 19-22                               | 24                        | 6                          |
| 24-30                               | 1                         | 0                          |
| 30+                                 |                           |                            |
| <b>Location:</b>                    |                           |                            |
| North-West                          | 89                        | 4                          |
| Gauteng                             |                           | 4                          |
| Northern Cape                       |                           | 1                          |
| Free State                          |                           | 1                          |
| <b>Description of area:</b>         |                           |                            |
| Urban                               | 89                        | 8                          |
| Rural                               |                           | 2                          |
| <b>Number of learners in class:</b> |                           |                            |
| 0-15                                | 3                         | 0                          |
| 16-30                               | 60                        | 7                          |
| 31-45                               | 20                        | 3                          |
| 46+                                 | 6                         | 0                          |

Off-campus students were further questioned with regard to the area where they were situated and the number of learners in their classes. Of the total of 10 off-campus students, 4 were situated in the Gauteng Province, 4 in the North-West Province and 1 each in the Eastern Cape and Free State. 8 off-campus students were situated in urban areas and 2 in rural areas. Most of the off-campus students (70%) reported that they had classes of 16-30 learners for PE. The on-campus students were asked what the number of learners in their classes was during their previous practical teaching excursion, and 67% responded that their classes had between 16 and 30 learners, while 22.5% reported that their classes had 31-45 learners.

Table 2 presents participants' average answers (the average of the ratings allocated to each training area) to the question of how important they rated each training area of the Foundation Phase PE training course in general, in light of their experience during practical teaching (on-campus students) or at the schools where they are located (off-campus students).

**Table 2: Mean ratings of importance of training areas in Foundation Phase PE teacher training**

| Training area                             | On-campus (n=89) |      |     |     | Off-campus (n=10) |      |     |     |
|---|------------------|------|-----|-----|-------------------|------|-----|-----|
|   | Mean             | SD   | Min | Max | Mean              | SD   | Min | Max |
| Improvising PE equipment and facilities   | 2.84             | 0.72 | 1.0 | 4.0 | 3.25              | 0.71 | 2.0 | 4.0 |
| Organisation and administration of PE     | 2.90             | 0.76 | 1.0 | 4.0 | 2.50              | 0.80 | 2.0 | 4.0 |
| Safety measures for PE                    | 3.51             | 0.53 | 2.0 | 4.0 | 3.50              | 0.71 | 2.0 | 4.0 |
| Theory of perceptual motor learning       | 2.89             | 0.67 | 1.0 | 4.0 | 2.75              | 0.70 | 1.0 | 4.0 |
| Practical perceptual motor activities     | 3.20             | 0.56 | 2.0 | 4.0 | 3.50              | 0.62 | 1.0 | 4.0 |
| Practical games & elementary sport skills | 3.05             | 0.69 | 1.0 | 4.0 | 3.05              | 0.69 | 2.0 | 4.0 |
| Educational dance                         | 2.73             | 0.73 | 1.0 | 4.0 | 2.50              | 0.67 | 1.0 | 3.0 |
| Educational gymnastics                    | 2.77             | 0.70 | 1.0 | 4.0 | 2.42              | 0.67 | 1.0 | 3.0 |
| Assessment of performance in PE           | 3.01             | 0.61 | 2.0 | 4.0 | 3.25              | 0.72 | 1.0 | 4.0 |
| Planning for PE within LO                 | 3.15             | 0.60 | 2.0 | 4.0 | 2.75              | 0.72 | 1.0 | 4.0 |
| Presenting a PE lesson                    | 3.23             | 0.57 | 2.0 | 4.0 | 3.17              | 0.71 | 2.0 | 4.0 |

From this table it is clear that safety measures; practical perceptual motor activities; practical games and elementary sport skills; assessment of performance in PE; and presenting a PE lesson were rated as either “important” or “crucial” by both on-campus and off-campus participants.

Participants were then asked to indicate how important they considered certain support strategies for off-campus Foundation Phase PE teacher training, and how they rated the sufficiency of the current study guide and study material for distance learning (*insufficient, sufficient, good or excellent*). Table 3 shows that theoretical contact sessions on the content and presentation of PE; additional practical contact sessions on perceptual-motor activities; and additional practical contact sessions on games and elementary sport skills were considered to be important or crucial by both on-campus and off-campus students. In contrast to the on-campus students, off-campus students also rated additional practical contact sessions with regard to educational gymnastics as important. Both groups rated the current study guide and study material as sufficient, but not as good.

**Table 3: Mean ratings of importance of support strategies in off-campus Foundation Phase PE teacher training**

| Support strategy   | On-campus (n = 89) |      |     |     | Off-campus (n = 10) |      |     |     |
|--|--------------------|------|-----|-----|---------------------|------|-----|-----|
|  | Mean               | SD   | Min | Max | Mean                | SD   | Min | Max |
| Additional theoretical contact sessions on PE content & presentation       | 3.04               | 0.63 | 1.0 | 4.0 | 3.25                | 0.72 | 2.0 | 4.0 |
| Additional practical contact sessions on perceptual-motor activities       | 3.31               | 0.64 | 1.0 | 4.0 | 3.25                | 0.67 | 1.0 | 4.0 |
| Additional practical contact sessions on educational gymnastics            | 2.88               | 0.76 | 1.0 | 4.0 | 3.17                | 1.02 | 1.0 | 4.0 |
| Additional practical contact sessions on educational dance                 | 2.80               | 0.78 | 1.0 | 4.0 | 2.78                | 0.95 | 1.0 | 4.0 |
| Additional practical contact sessions on games and elementary sport skills | 3.32               | 0.59 | 2.0 | 4.0 | 3.17                | 0.72 | 2.0 | 4.0 |
| Is the current study guide sufficiently comprehensive?                     | 2.87               | 0.80 | 1.0 | 4.0 | 2.83                | 0.72 | 2.0 | 4.0 |
| Is the current study material sufficiently comprehensive?                  | 2.94               | 0.83 | 1.0 | 4.0 | 2.83                | 0.67 | 2.0 | 4.0 |

### Open-ended questions

Three open-ended questions were included in the questionnaire, the first question pertaining to the effect of the PE training programme on the students' presentation of PE during practical teaching (on-campus students) or at the school where they were located (off-campus students), if applicable. The effect of the Foundation Phase PE training programme was consistently positive, according to respondents from both on-campus and off-campus groups. Most respondents said that the programme equipped them well for presenting Foundation Phase PE, several saying that the training enhanced both their movement skills as well as their skills for teaching movement skills. The majority of respondents from both groups were also positive that the training had provided them with a variation of practical ideas to present during PE lessons.

The second open-ended question inquired into any other support material or strategies that students would recommend for off-campus Foundation Phase PE programmes. The vast majority of respondents answered that they would want to see more video material in the course, with visual images that depict the correct execution of practical movement skills. One respondent remarked, "Seeing the correct technique of the cartwheel in gymnastics, on a DVD that I can watch over and over again, will definitely improve my cartwheeling!" Several participants also indicated that they would like DBDs (digital book

disks) of practical skills and examples of PE lessons, and two respondents said that they would like to receive video clips of practical skills on their cell phones as they do not have easy access to computers. In response to the third open-ended question, which asked general comments on the positive and negative aspects of the Foundation Phase PE training programme the participants were involved in, the majority of respondents were very positive and enthusiastic about the training programme, most citing their enjoyment of the course. Negative responses included the lack of enthusiasm of other teachers and learners towards PE at some schools, the large and diverse classes which they had to work with, and the lack of equipment and facilities. According to some of the respondents, these negative factors made it difficult for off-campus students to apply their knowledge and skills in the presentation of PE.

### Interviews

Three themes emerged in each of the interviews with the principals. Data was combined to describe the opinions of principals with regard to the quality of current off-campus training programmes, the suitability of off-campus Foundation Phase PE teacher training, and recommendations for future off-campus Foundation Phase PE training programmes.

The majority of respondents regarded the quality of the off-campus PE training programmes as very high, saying that the off-campus students they had employed at their schools showed good skills and knowledge when presenting PE. One respondent, however, pointed out that the off-campus programme is only as successful as the mentor at the school who is supposed to guide the student, explaining that there are in his opinion very few teachers at schools who can successfully mentor Foundation Phase PE teacher students as there are so few teachers who are qualified in Foundation Phase PE.

The practical training of PE student teachers was consistently regarded as suitable for off-campus programmes, but mainly under three conditions: students had to have had some measure of PE training before starting work at a school, students had to have a qualified mentor at the school, and students had to receive a variety of support materials from their PE instructors, including the availability of “videos, slides and pictures”.

With regard to recommendations for future off-campus Foundation Phase PE teacher training programmes, the majority of respondents emphasised safety regulations during the presentation of PE, including knowledge of and skills in First Aid. Other common recommendations were that the training programme should include training in the management and organisation of large and culturally diverse classes, and the improvisation of equipment and facilities. The specific PE components of perceptual and gross motor development, as well as basic sport skills, were consistently identified by the respondents as the most important sections of Foundation Phase PE in which practical training in the programme is necessary.

### Summary and discussion

Although the students did not rate the improvisation of equipment and organisation of PE classes as important, the principals indicated that it is very important that these aspects should be included in the content of Foundation Phase PE training programmes. Safety measures in the presentation of PE should receive more attention in the content of the PE training programme, according to all respondents. Other specific improvements to the off-campus Foundation Phase PE teacher training programmes which emerge from the results in this study, most prominently include more comprehensive support in terms of practical training of perceptual motor skills and basic sport skills.

The general positive approach towards on-campus and off-campus Foundation Phase PE teachers training programmes, as reported by respondents in this study, is very similar to the opinions of stakeholders in other studies (Yaman & Turkey, 2009; Goulimaris *et al.*, 2008: 68). However, the concerns of on-campus

students, off-campus students as well as the principals in this study that additional support and strategies should be employed to enhance the instruction and evaluation of practical skills in Foundation Phase PE off-campus training, are also in line with similar concerns voiced in studies on distance PE education (McNeill & Eddy, 2005: 74). In addition, the fact that the vast majority of distance education student teachers in South Africa do not have access to computer technology (Frezen & Hendriks, 2009: 2), presents instructors and curriculum developers of off-campus PE teachers training programmes with unique challenges. Reed (2005: 273) and Wright and Wright (2001: 27) emphasise that distance learning programmes should be designed to meet the unique needs of target groups in the distance education market.

Considering these unique conditions in the South African education system and the results of this study, increased support for students by means of video material and cell phone technology seems to be some of the most prominent short-term improvements to be made in the off-campus programme. In this respect, the development and use of multimedia disks (MMDs – DVDs in hybrid format, which incorporate different types of technology like video material, slide shows and commentary and which can be played in any DVD-device) and cell phone technology through which students can receive video clips and other information on their cell phones, warrant further investigation.

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