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Development of a setting specific comprehensive physical education programme for South African primary schools located in disadvantaged neighbourhoods - grades 4 - 7

Masterarbeit
Vorgelegt am Departement für Sport, Bewegung und Gesundheit der Universität Basel zur Erlangung des Master-Zertifikats im Rahmen des Studiengangs „Sport, Bewegung und Gesundheit - Prävention und Gesundheitsförderung“

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Acknowledgements

When writing a master thesis, you learn a lot about the scientific way of working and you learn how to deal with scientific research problems. In this work these components were included too, but there was something else, something you cannot experience at your desk or in the lab.

As one of five master students of the University of Basel, I had the chance to write my master thesis within the framework of the *KaziBantu* project and thus the privilege to travel to South Africa to locally develop the planned physical education teaching material for disadvantaged schools. I quickly realized that in addition to the scientific component of this project, the human component plays an important role, especially in a country with a history like South Africa. From the beginning the dialogue and the exchange with the local people was central. I quickly noticed that neither the Swiss nor the South African way of teaching was better than the other, but that it is the balance between the two and the benefit of learning from each other, that makes this collaboration so precious.

In addition, due to this project, I was able to get to know and appreciate a new country together with the culture and its people. Besides many positive experiences, I have also come across my limitations again and again while completing this project. It was the first time that I worked on such a large project and therefore I had a lot to learn. For example, sometimes personal ideas and feelings had to have been compromised in order to benefit the project at large. Moreover, I learned that in such large projects, clear communication is the key to success, and that even the most hopeless situation always brings a solution.

For all these experiences, I would like to thank the people who made this possible. First of all, I would like to thank my supervisor Prof Dr Uwe Pühse. Through the coordination of the project and his skilful negotiations he is one of the cornerstones of this project. Special thanks go also to Dr des Ivan Müller. With his always positive attitude he gives the project a lot of energy. Dr des Müller was also always available to answer questions – during night or day. At the same time I would like to thank the entire Nelson Mandela University team in Port Elizabeth, especially the five master's students, Nandi Joubert, Danielle Smith, Siphesihle Nqweniso, Larissa Adams and Lusanda Ling Ganya, as well as Prof Dr Cheryl Walter. I would also like to thank the secretary, Shona Ellis, who organized everything for us during our stay in South Africa. In Addition to that, thanks to them we were blessed with making new contacts, establishing new relationships each day and learned more about the beautiful South African culture and the rainbow nation.

Five Months after my return to Switzerland, I now had time to put all these new and different puzzle pieces of experiences together, and I realized that with this master thesis I not only broadened my academic career but that I broadened the horizon of my life.

Abstract

Background

Exercise is a relevant part of a healthy development of children. At least 60 minutes of moderate-to-vigorous activity should be achieved daily by children to maintain and develop physical, emotional, cognitive and social skills. Today, many children with a western lifestyle move less than the recommended hour per day. A development that is also evident in deprived areas in South Africa, a low- to middle-income country.

Method

Physical activity in schools assumes an important function of promoting physical activity. Through scientific research and in collaboration with local teachers, experts and consultants, an adapted and simple lesson plan has been developed to be implemented in schools from disadvantaged areas in Port Elizabeth, South Africa. During a field stay from October to November 2017, the content of lessons was tested in pilot schools and the pedagogical-didactic concept of the teaching material was adapted and refined accordingly.

Results

A total of 128 lessons including appropriate assessments were developed by the *KaziBantu* physical education team. This equates to a 40-minute physical education lesson per week for primary school grades 4-7 during a 32-week school year. All lessons are based on the content of the South African curriculum and promote the motor and emotional skills of children in a varied and age-appropriate way.

Discussion

The *KaziBantu* teaching materials are still in the final stages of development. The implementation of the developed teaching materials will show what impact can be achieved on children's health parameters. The *KaziBantu* physical education team is aware of the difficult setting and that the implementation of the teaching material in the next few years should be a dynamic process that needs to be adapted.

Zusammenfassung

Hintergrund
Bewegung gehört zu einer gesunden Entwicklung von Kindern. Mindestens 60 Minuten moderate bis intensive Aktivitäten sollten täglich von Kindern erreicht werden, um körperliche, emotionale, kognitive und soziale Fähigkeiten stabil zu halten und zu entwickeln. Heutzutage bewegen sich viele Kinder mit einem westlichen Lebensstil weniger als die empfohlene Stunde pro Tag. Eine Entwicklung, die auch in benachteiligten Gebieten in Südafrika zu beobachten ist, einem Land mit niedrigem bis mittlerem Einkommen.

Methode
Als ein Mittel zur Förderung der körperlichen Aktivität soll der Schulsport dienen und übernimmt daher eine wichtige Funktion. Durch wissenschaftliche Forschung und in Zusammenarbeit mit lokalen Lehrern, Experten und Beratern wurde ein angepasster und einfacher Unterricht geschaffen, der in Schulen in benachteiligten Gebieten von Port Elizabeth, Südafrika, umgesetzt werden kann. Während eines Feldaufenthalts von Oktober bis November 2017 wurden die Unterrichtsinhalte in Pilotschulen getestet und das pädagogisch-didaktische Konzept des Lehrmaterials wurde dementsprechend angepasst und verfeinert.

Ergebnisse
Insgesamt wurden 128 Lektionen inklusive entsprechende Prüfungsformen vom *KaziBantu* Physical Education Team entwickelt. Daraus entstehende Noten können in den alltäglichen Schulalltag integriert werden. Dies entspricht einer 40-minütigen Sportstunde pro Woche für die Primarschulklassen der Schulstufen 4-7 während eines 32-wöchigen Schuljahres. Alle Lektionen basieren auf den Inhalten des südafrikanischen Curriculums und fördern die motorischen und emotionalen Fähigkeiten von Kindern altersgerecht und abwechslungsreich.

Diskussion
Die *KaziBantu* Unterrichtslehrmaterialien befinden sich noch in der finalen Entwicklungsphase. Die Implementierung der Lehrmaterialien wird zeigen, welche nachhaltigen Auswirkungen der Unterricht auf die Gesundheitsparameter von Kindern haben kann. Das *KaziBantu* physical education Team ist sich bewusst, dass die Implementierung des Lehrmaterials in den nächsten Jahren ein plastischer Prozess sein soll, welcher immer wieder angepasst werden muss.

Opsomming

Agtergrond
Oefening is deel van die gesonde ontwikkeling en groei van kinders. Ten minste 60 minute van matige-tot-intense fisiese aktiwiteit moet daagliks bereik word deur kinders om fisiese, emosionele, kognitiewe en sosiale vaardighede te onderhou. Vandag beweeg baie kinders met 'n Westerse lewenstyl minder as die aanbevole uur per dag. 'n Ontwikkeling wat ook in ontneemde gebiede in Suid-Afrika voorkom, wat 'n lae tot middel-inkomste land is.

Metode
Fisiese opvoedingsklasse en skoolsport speel ‘n belangrike rol om fisiese aktiwiteit in kinders te bevorder. Deur wetenskaplike navorsing en in samewerking met plaaslike onderwysers, kundiges en konsultante is aangepaste en eenvoudige lesse geskep wat in skole in benadeelde gebiede van Suid-Afrika geïmplementeer kan word met die hoof doel om kinders se fisiese aktiwiteit te bevorder. Tydens 'n besoek van Oktober tot November 2017 is die inhoud van lesse in skole getoets en die pedagogies-didaktiese konsep van die onderrigmateriaal is ooreenkomstig aangepas en verfyn.

Resultate
'n Totaal van 128 lesse, insluitende toepaslike evaluering, is ontwikkel deur die *KaziBantu* Liggaamlike Opvoedingspan wat in alledaagse skoollewe geïntegreer kan word. Dit is gelykstaande aan 'n 40 minute fisiese aktiwiteit les per week, vir primêre grade 1-7, gedurende 'n 32-weekse skooljaar. Alle lesse is gebaseer op die inhoud van die Suid-Afrikaanse kurrikulum en bevorder die motoriese en emosionele vaardighede van kinders op 'n ouderdomsgeskikte en gevarieerde manier.

Bespreking
Die *KaziBantu*-onderrigmateriaal is steeds in ontwikkeling. Die toekoms sal wys wat blywende impakonderrig op kinders se gesondheidsparameters kan hê. Die *KaziBantu* Liggaamlike Opvoedingspan is bewus daarvan dat die implementering van die onderrigmateriaal in die volgende paar jaar 'n dinamiese proses moet wees wat oor en oor aangepas sal moet word.

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List of Abbreviations

BC	Before Christ
BMI	Body Mass Index
CAD	Computer-aided design
CAPS	National Curriculum and Assessment Policy Statement
DASH	Disease, activity and schoolchildren`s health
DBE	Department of Basic Education
D-EDK	Deutschschweizer Erziehungsdirektoren-Konferenz
DSB	Deutscher Sportbund
HAKSA	Healthy Active Kids South Africa
HIV	Human Immunodeficiency Virus
MSc	Master of Science
NCS	National Curriculum Statement
PE	Physical education
R	Reception
SA	South Africa
SRSA	Department of Sports and Recreation South Africa
Swiss TPH	Swiss tropical and public health institute
TB	Tuberculosis
WHO	World Health Organization

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1 Introduction

The human body is a complex and sophisticated being which is made to move. Over thousands of years, evolutionary adaptations resulted in human bodies being of the most enduring on earth. No other mammal is as well adapted for running long distances. The human body adapted with an energetic system which allows energy storage for continuous expenditure, with subsystems like bones, ligaments, capsules and tendons that is able to hold the same level of performance for hours. Furthermore, the ability to maintain a constant body temperature, regardless of heat and humidity stressors, provides us with proof that we were made for long-lasting physical activity (Lieberman & Bramble, 2007).

Anthropologists argue that one of the reasons why our bodies are perfectly adapted to endurance events, is due to the ancestor genus Homo, and their persistence hunting technique. This refers to a hunting technique which was developed before there were domestic dogs who helped to fatigue the prey. The persistence hunting took place during the hottest time of the day. The animal was chased to complete exhaustion before killing the animal. With humans having the advantage of a better cooling system, a better body form and a perfect energetic system, humans where often in a better position to kill than many other animals. This led to the ability for humans to consume more meat in their diet, which is after the human evolutionary biologist Louis Liebenberg, a crucial point to their evolution (Liebenberg, 2006).

You may ask why this thesis begins with this introduction while the thesis focuses on the development of a setting specific comprehensive physical education programme for South African primary schools located in disadvantaged neighbourhoods – if the human body is already highly developed for physical activity? The answer is simple – because times and challenges faced have changed.

Our modern civilization faces many new challenges, completely different to the challenges once faced by our ancestors – with persistence hunting to feed ourselves definitely not one of them. One similarity however that we have with our ancestors, and not expected to change anytime soon, is the fact that without a healthy body, activities of daily living is much harder, or even impossible – regardless of the age of the individual. Even though today's civilization is more developed and knowledge about health and the human body is much larger than in the past, our lifestyles keep changing towards a life with less and less physical activity which sees the rise of 'new' health problems.

The physical activity recommendation for adults made by the American College of Sports Medicine is 30 minutes of moderate intensity physical activity five days per week, or 20 minutes of vigorous intensity physical activity three times per week (Garber et al., 2011). A staggering 40% of the adult American population is not achieving this minimal physical activity recommendation (Haskell et al., 2007). These trends don't stop at the boarder of America or at the adult age population. Presently, only 20% of all children in the world are achieving the

physical activity recommendations (Uys et al., 2016). Similar trends are seen in South Africa, especially in the township areas (Yap et al., 2015).

Numbers and facts which shows a questionable development of the world population with regard to a healthy lifestyle. Long ago the sedentary lifestyle affected the African continent as well and thus reached the roots of our physical development. The roots where persistence hunting was invented, where the perfecting of our human bodies to endurance runners by the bushmen began and where the foundation to a healthy body and lifestyle was laid.

2 Health risks among the South African population

2.1 Health systems of threshold nations

Health systems of threshold nations like South Africa are often burdened by communicable diseases like human immunodeficiency virus (HIV), tuberculosis (TB) and the transmission of other poverty-related diseases (Boutayeb, 2006). Furthermore, South Africa is also experiencing a rise in non-communicable or lifestyle disease such as diabetes mellitus type two, cardiovascular diseases, osteoporosis and obesity (Jamison & World Bank, 2006).

According to the World Health Organization (WHO) during 2016, over 30% of South Africa's adult female population was classified as obese, having a body mass index (BMI) of ≥30 kg/m^2 (WHO, 2016). Depicting the global prevalence of obesity in the female population you can see that over a third of the whole adult female population of South Africa is experiencing increased risk for non-communicable diseases like diabetes (Figure 1).

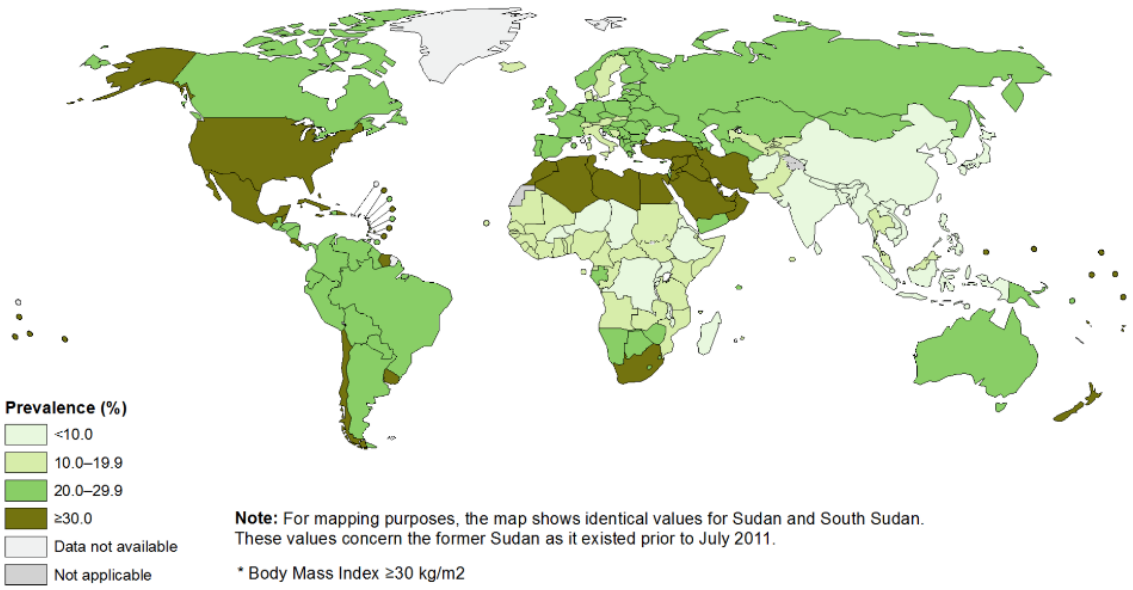


Figure 1: Prevalence of obesity among females aged 18+ in 2016.

One of the reasons for this development appears to be found in the adaptation to a western lifestyle which is mostly characterized by physical inactivity (Mayosi et al., 2009). Physical inactivity leads to many health conditions and diseases including obesity and diabetes type two (Baleta & Mitchell, 2014). As mentioned, the human body is designed to move, a fact which seems to have been forgotten by many living a westernised lifestyle.

2.2 The western lifestyle

Thousands of years ago, humans were hunters and gatherers and had to move to stay alive. Compared to the extended time of evolution, whereby the body of our ancestors had time to adapt slowly to some marginal changes in their way of life, the lifestyle change that occurred after the Neolithic Revolution (around 10 000 BC) and then mainly with the Industrial Revolution and the Modern Age, was too fast for our genome - we simply are not able to adapt to all the required changes fast enough. The human body still includes the majority of genes which were selected during the Palaeolithic Era in Africa (Lindeberg, 2010).

If one compares the Palaeolithic Era, which lasted till 2.5 million years ago, to the time of the agricultural revolution, which lasted till 11 000 years ago, it means that the time of the radical change of our lifestyle includes only 0.5% of the whole history of our human genome (Carrera-Bastos, Fontes, O'Keefe, Lindeberg, & Cordain, 2011). This rapid lifestyle changes, including the decrease of physical activity due to motorization, internet technology and other factors which facilitates daily life, included changes in the way we feed or nourish ourselves too. Due to more industrialisation, high caloric and processed food on the market and decreased time working women and men have to prepare food, our eating behaviour started changing as well (Lindeberg, 2010).

Since the focus in this master thesis is on the physical activity part, in the further course of this work we won't go deeper into the theme of the nutritional component. Subsequent text focuses on the role of physical activity in school environments, with special reference to its ability to reduce non-communicable diseases and decrease the prevalence of physical inactive adults in a poor neighbourhood in the northern part of Port Elizabeth, South Africa.

The WHO shows that in 2010, about 50% of the adult South African population are classified as physically inactive (Figure 2). Practically every second adult South African citizen has a physical activity level less than 150 minutes of moderate-intensity or less than 75 minutes of vigorous-intensity per week (WHO, 2010).

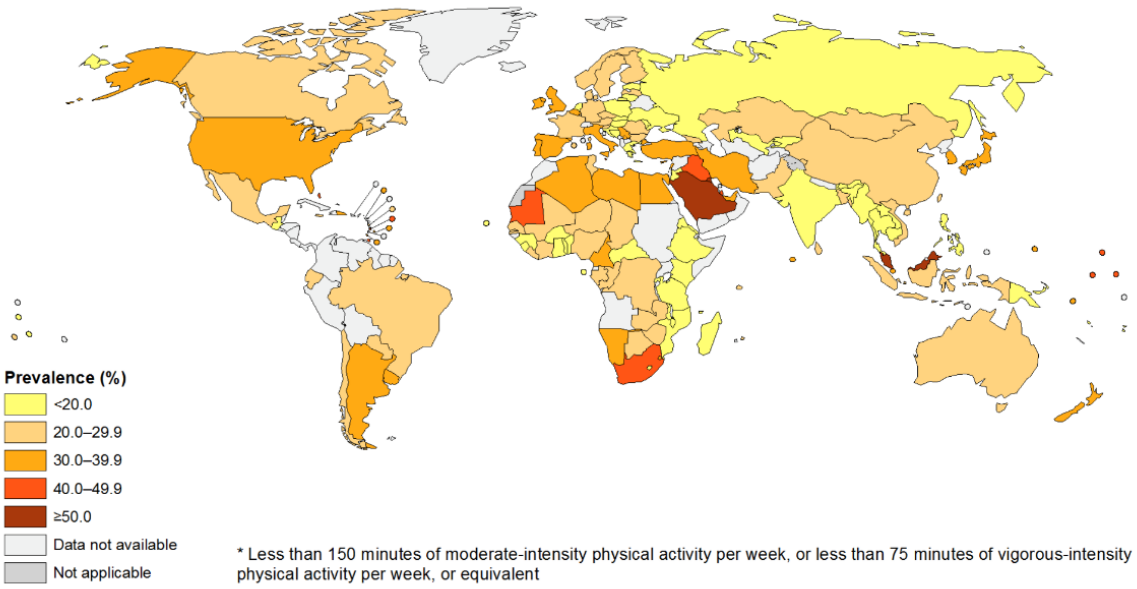


Figure 2: Prevalence of physical inactivity among adults aged 18+ (both sexes) in 2010.

2.3 The Healthy Active Kids South African (HAKSA) report card

Every two years, South Africa researchers publish a report about the health state of South African children and youth. The report included are over 30 authorities which analyse peer-reviewed manuscripts, dissertations and 'grey' literature (Uys et al., 2016). The aim of this report is to combine different aspects which effect children's health such as physical activity and the eating behaviour of South African children and to analyse how these aspects change over time.

The latest report was published in 2016 and contains two categories physical activity and nutrition indicators. Several aspects of health are covered in the report, including: overall fitness level of children, the overweight and obesity rate and inter alia also an analysis of their sedentary behaviour. The report card provides a school grading system, from 'A' to 'F', to grade each health category. An 'A' shows that a large majority of children and youth (81% - 100%) were successful in this category, whereas a 'F' signifies that only 0% - 20% of the children and youth succeeded (Uys et al., 2016). An overview of all physical activity indicators is shown below (Table 1).

Table 1: Physical activity indicators (Uys et al., 2016).

Grades by Physical Activity Indicators in the 2016 Healthy Active Kids South Africa Report Card

Physical Activity Indicator	2016 Grades
Overall Physical Activity Levels	C
Physical Fitness and Motor Proficiency	D
Organized Sport Participation	D
School	D
Activ Play	INC
Activ Transportation	C
Sedentary Behaviors	F
Family and Peers Support	C-
Community and the Built Environment	C-
Government Strategies & Investments	B

Note: The grade for each indicator is based on the percentage of children and youth meeting a defined benchmark: A is 81% to 100%; B is 61% to 80%; C is 41% to 60%; D is 21% to 40%; F is 0% to 20%; INC is Incomplete data.

The highest grade obtained during the 2016 report card, was a 'B' grade (61% - 80%) in the physical activity category, for government strategies and investments. One reason for this result is the fact that the Department of Basic Education (DBE) now works together with the Department of Sports and Recreation South Africa (SRSA). These two departments try to enlarge the access to sport, recreation and physical activity in every school in South Africa through their joined school sport program (SRSA, 2017). In addition, 40% of the SRSA's budget and 50% of the SRSA's conditional grant should in future be provided to the school sport program. Unfortunately, up until now children haven't shown a big compliance to the school sport program (Uys et al., 2016).

All the other analysed physical activity indicators, including "overall physical activity levels", "physical fitness and motor proficiency" and "sedentary behaviours" reached grades from 'C' to 'F'. The lowest result in the 2016 report card, a 'F' (0% - 20%) was achieved for children's sedentary behaviours.

Similar to the 2014 HAKSA report card, 2016's report showed that children did not meet the recommendation of two hours or less of screen time per day. On average, children from 10 to 17 years watch three hours of television per day (Statistics South Africa, 2013). Differences between genders were also noted, with girls spending more time in front of a screen than boys. Furthermore, a correlation between the duration of screen time per day and body mass were also observed. Children who spend an average of more than four hours per day in front of a screen, have twice the risk to be overweight than those who meet the screen recommendation (Diouf et al., 2016).

Lastly, focusing on indicators of physical fitness and motor proficiency, it is known that a high level of physical fitness and good motor proficiency can be linked to a higher school performance (Dwyer, Sallis, Blizzard, Lazarus, & Dean, 2001). In addition, Pienaar et al. (2015) found that over one fifth of the 800 tested primary school children had a motor proficiency score below average. Furthermore, motor proficiency was linked to socioeconomic status. The researchers therefore assume that the greatest difference in the learning of motor skills occur through the different possibilities of the environment (Pienaar, Visagie, & Leonard, 2015).

In summary, it is found that not only a large part of the South African adult population is classified as physically inactive, but that children and the youth are not participating in sufficient health promoting physical activity either. The dangers of a sedentary lifestyle are widely known, but particularly in children and the youth result in lower physical fitness, a lower motor proficiency and contribute largely to physical inactivity during adulthood as well. To break this vicious cycle, the school physical education and sports program could be an important key factor. This is due to the fact that schools are seen as a safe environment where children can learn to move and in the same time move to learn. This means that the movement should not only teach the movements themselves, but also acquire social and emotional skills through the movement (Gallahue, Donnelly, & Gallahue, 2003).

In the following chapter, strengths and limitations of the physical education subject in the school curriculum is explained.

3 Physical education in primary schools

3.1 Physical education

Physical education has a large history in the school curriculum, even though the content has significantly changed over time. Physical education in the school curriculum can be dated back to the ancient Greeks who taught gymnastics at high schools, with the goal of increasing fitness of learners for possible war. Plato argued that gymnastics help to develop courage, bravery and external appearance (Elmar Kornexl, 2010). Nowadays the principle aim of physical education as school subject changed significantly from Plato's argument, although his fundamental idea of personal and physical development through physical education is still identifiable.

The development of social skills through physical education and sports is mentioned in many school curriculums in many different countries. The debates about which principle goal the subject should pursue however, is often a controversial discussion. Nevertheless, it is possible to identify two main goals of the physical education and sports program at school level. First to promote health and second to contribute to general sports performance (Singrün, 2014). Due to the changing lifestyle, these two aspects are at the centre of the school sports debate and it raises the question of whether these aspects can be changed by the school sports at all.

It is a fact that a decrease of the health status and daily free-living movement of children is currently seen. According to the WHO, there are currently over 155 million school-aged children who are classified as overweight worldwide, with the occurrences ever increasing (WHO, 2005). As a consequence, loss of physical performance is seen, referring to a decrease in fitness and motor skills, including: flexibility, speed, coordination, force and endurance performance (Bös, 2009). A very logical consequence due to Hüttenmoser, due to the fact that today's youth sleeps for nine hours, sits for nine hours in school or in front of a screen, stands for five hours which only leaves an hour for physical activity, which is often not even attempted (Hüttenmoser, 2002).

Simultaneously physical education is seen elsewhere in the world as a popular school subject. A study conducted in Germany, the DSB-SPRINT-Studie (Eine Untersuchung zur Situation des Schulsports in Deutschland), showed that nearly two third of all the interviewed children said that for them, physical education and sports in school is an important subject, with only 13% finding physical education irrelevant (Deutscher Sportbund, Brettschneider, & Becker, 2006). On that basis it can be suggested that this distribution can also be found in other countries which means that a fundamental motivation for this school subject of the children is present. The question which arises is what focus should be used so that the children benefit the most for their further life.

3.2 The aim of physical education in different countries

When studying modern school curricula from different countries you often find three principal aims of physical education. In "Sportunterricht" (2008) German sport pedagogue Dietrich Kurz discussed what the tasks of physical education in schools are and could be in future. He tried to explain what these three often mentioned terms, "fields of movement" (Bewegungsfelder), "perceptivity" (Mehrperspektivität) and "dual task" (Doppelauftrag) in modern school curricula can mean.

The first task of the physical education, known as fields of movement, says that the aim of physical education is not only to present various sports but also the movement culture of the specific sport. For example, he takes the sport track and field and says that in modern school curricula the sport track and field is not the main focus, but rather the different aspects of this sport like running, throwing and jumping. The aim should be that children experience the different ways of executing movements and thereby transfer learned content to daily life activities (Dietrich Kurz, 2008).

The second task, the perceptivity, according to Kurz (2008) is linked to the previous task of the fields of movement. The goal should not only be that children experience as many ways of movement as possible but also that they reflect the movements and try to understand why this particular movement or skill could be helpful in their future life paths or how it could protect their health.

The third task deals with the dual task of physical education. Kurz (2008) explains that this task can be interpreted in many different ways, but for him teaching physical education is not only about teaching the movement, teaching the skills but rather also about what the children can transfer from the classes to their daily lives. They should understand that while running in school you can not only learn the technique of running or learn how to train your body to reach longer distances but also that it supports their development, that they learn something about themselves and their characters (Dietrich Kurz, 2008). This interpretation of how the school curriculum for physical education should look and what should be taught is only one of many approaches to describe the ideal physical education class. Which main content in each country will be thought has often a historical background and is also a question of the social structure of each country.

The sports scientist Singrün (2014) attempted to compare different physical education curricula for the four European countries Finland, Italy, England and the Netherlands and for two major nations like the United States of America and China. He observed that what these nations had in common was that the subject physical education in school has the aim to educate the children so that they are able to participate in physical activity throughout their entire life. This is because practicing sports has a positive effect on their bodily health as well as their social skills (Singrün, 2014).

Not identical was the weighting of the topics in the curricula. The principal goal of the school sport in Italy for example is to help the children to understand their body and how they can move it. Singrün (2014) summarizes that the children learn more about games, sport, rules, fair play and safety which is included in this task. Correspondingly the focus in Italy is that the children learn a palette of movements which should be as large as possible. Singrün (2014) also uses the term “motorische Alphabetisierung” which means analogous that they try to give the children a “motoric alphabetization” for their life journey.

The goal of the physical education lessons in the Netherlands is quite similar. After finishing school, children should have the capacity to participate at the culture of movement for their lifetime and also have a positive attitude towards it. The physical education curricula of Finland also follow these principles but in addition the Finns maintain that especially the cognitive presence should be developed, which means that the children are capable to judge themselves and their sports skills not least so that they are able to plan their own sports activities after school (Singrün, 2014).

As mentioned above the focus on the health topic exists in the other countries like England, America and China as well. But with additional focus on the performance a structural difference in the three curricula of these countries is apparent. The performance aspect in these countries is much more important than in the others as Singrün (2014) describes.

The German Professor for European Studies in Physical Education and Youth Sport, Roland Naul has carried together all the information of the different curricula and categorized the above-mentioned approaches in a graphic (Figure 3) and tried to chronicle the evolution of physical education from the 1960's until after the turn of the century (as cited in Richter, 2006). He splits the developments of the main concepts of the physical education topic in four dimensions (Sport Education, Movement Education, Physical Education and the Health Education.) The core of the graphic builds the physical education of the 1960's because this time reflects a period where the classical concept of physical education as it was previously known began to change in some of the European countries (Singrün, 2014).

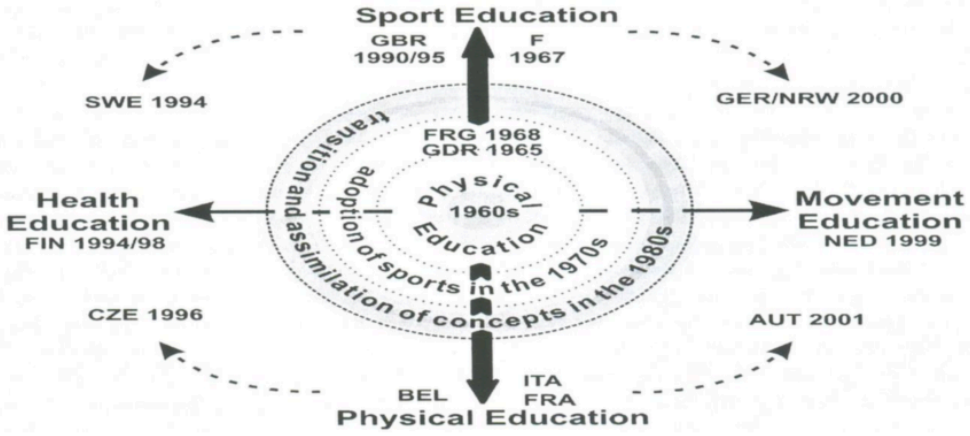


Figure 3: Vector model of the school situation according to Naul (as cited in Richter, 2006).

3.3 Physical education curriculum of Switzerland and South Africa

In the following chapter of this work the two physical education curricula of Switzerland and South Africa will be described and compared in more detail to understand their similarities and differences. These two countries are used because the *KaziBantu* project, (introduced in chapter four) is a collaboration between the Nelson Mandela University in Port Elizabeth, South Africa, the University of Basel in Switzerland and the Swiss Tropical and Public Health Institute, Basel, Switzerland, and therefore will include influences from both countries.

Lehrplan 21 of Switzerland

In Switzerland the "Lehrplan 21" has been implemented in the majority of the 26 cantons (D-EDK, 2018). This is a school curriculum for the whole country which contains learning objectives for each subject in school from the pre-school level to the end of the compulsory education. The objectives are structured in three cycles (cycle 1: kindergarten, grade 1 to 2; cycle 2: grade 3 to 6; cycle 3: grade 7 to 9). For each cycle there exists competences which the children should have achieved after finishing. A competency is defined by the knowledge, skills and volition of the learner(D-EDK, 2013).

The principal aim of physical education in primary and secondary schools in Switzerland is characterized in four sections. The sections are divided into the following subtitles - contribution to the educational task (Bildungsauftrag), participation at movement and sport culture (Teilhabe an der Bewegungs- und Sportkultur), education through movement and sport (Bildung durch Bewegung und Sport) and schools need movement and sport (Schulen brauchen Bewegung und Sport). In these subsections it is explained that the aim of physical education should be defined by an expansion of the movement dimension. The children should improve their body awareness and understand how movement can improve health and wellbeing. As in the above-mentioned examples of the physical education curriculum in other countries the learner should be encouraged so that he is able to be active, independent and responsible so that he can plan his sports activities independently after school (D-EDK, 2013).

The learner should not only learn new movements but also develop his character by participating in physical education. This development should occur on the emotional, social, cognitive, motivational and volitional level of the personality of the learner. At the same time the self-confidence should also be built through sporting success. Furthermore, it is mentioned that physical education in school contribute to a better atmosphere in class which inter alia promote the school performance of the children (D-EDK, 2013).

The specific competences which should be developed are summarized with six subtitles like "running, jumping, throwing" (Laufen, Springen, Werfen), "moving on apparatus" (Bewegen an Geräten), "presenting and dancing" (Darstellen und Tanzen), "playing" (Spielen), "sliding, rolling, driving" (Gleiten, Rollen, Fahren), and "moving in water" (Bewegen im Wasser). Each competence contains further explanations which should be achieved after each cycle. At the end of the semester the teachers are free to examine the learned competences (D-EDK, 2013).

National Curriculum Statement of South Africa

The National Curriculum Statement (NCS) is structured in four sections (NCS, 2011). The first section contain the curriculum and assessment policy for grade R to grade 3 (Foundation Phase), the second section contain the curriculum and assessment policy for grade 4 to grade 6 (Intermediate Phase), the third section contain the curriculum and assessment policy for grade 7 to 9 (Senior Phase), and the last section contain the documents for the grades 10 to 12 (Further Education and Training Phase).
For the first two documents physical education forms part of the subject "Life Skills" while from grade 7 to 9 it becomes part of the subject "Life Orientation". As the curriculum builds on progression from grade R to grade 9 the principle aims of the physical education lessons remain the same. According to the NCS (2011) "Participation in PE will nurture positive attitudes and values that will assist learners to be physically fit, mentally alert, emotionally balanced and socially well adjusted." The following analysis therefore puts the focus on the document for the grades 4 to 6.

The aim of the life skill subject is to develop the physical, intellectual, personal, emotional and social potential of each learner. The subject is divided into the three connected topics personal and social well-being, physical education and creative arts. Each of these three sectors generate a mark which counts a third for the certificate at the end of the school year.
For the section physical education, the goal is not only to promote knowledge of movement and physical well-being but also the emotional and social characteristics of each learner. This includes the development of relationship skills and also problem-solving skills and the enhancement of self-esteem. One grade is divided into four terms. For each term there are learning objectives as well as the recommended resources for teachers, examples of possible activities and safety measures for lessons in the curriculum.

The evaluation of these competences is measured by two separated scales considering the participation of the children and their movement performance. A learner can get a total of 30 points, 20 for participation and 10 for movement performance. Ultimately, the physical education mark determines one third of the total life skills mark (NCS, 2011).

Comparison of the Swiss and South African curricula

When comparing the two curricula it may be observed that both curricula follow the same direction. The aim of both documents is to promote physical activity in the children not only during school but also throughout their lifetime. Through movement the horizon of physical activity of the children should be broadened so that they are able to participate in many different movement activities which not only promote the bodily health but also the social and mental health.

A difference between the South African and the Swiss curricula which should be explained is that the assessment forms in the South African curriculum are clearly structured and divided into a performance and a participation component where the participation is more weighted than the performance. In the Swiss curriculum this aspect is more open, and teachers are free to choose how they would like to create exams. Furthermore, in the Swiss curriculum there is a separate, independent mark for physical education in the school certificate whereas the physical education mark in the South African school system reflects a third of the total life skill mark.

In general, the structure of the two curricula are similar and when compared with the vector model according to Naul (as cited in Richter, 2006) it becomes difficult to situate them at a precise place in this model. A central and vital part of both curricula is the movement education. For this reason, both curricula can be situated on the right-hand side near the Netherlands model. At the same time, times have changed, and another important point is the healthy body awareness and the development of social and mentally strong people, more like in the Finnish physical education curriculum where the focus is on the health education. Therefore, it would make sense to switch the movement education vector with the physical education vector in the graphic to situate both of the curricula between movement and health education.

3.4 Measurable effects through physical education in schools

As mentioned previously, the decreasing activity level of children due to the lifestyle change in our society, is a fact that can be observed worldwide. Physical education in schools seems to be a potential solution in combating this problem. This is because in no other setting than schools can you attain as many young people in one place and educate them about health topics and let them experience the positive impact of physical activity on their well-being and health. At the same time there are many tasks in the curricula of physical education in schools which teachers need to fulfil. According to Singrün (2014) there are so many tasks that it seems as if physical education could be the solution for every health-relevant problem (Singrün, 2014). Which raises the question which measurable effects can be achieved through physical education.

Since the focus of this thesis is creating a toolkit for physical education lessons in underprivileged regions with the aim of promoting an active and healthy lifestyle in the next paragraphs some studies will be mentioned which examined the changes of the motoric performance through physical education in schools. With the focus particularly on the changes in the parameters strength, endurance and coordination.

Strength skills

When dealing with strength training in children trainers or teachers are often faced with many prejudices like a high risk of injuries and a loss of mobility. However, it has long been demonstrated, that adapted strength training can already be practiced in childhood with positive results. As Menzi (2007) explains, strength training with children has a significant effect on the strength and health of bones throughout childhood.Physical education with a focus on strength has resulted in an increase in the maximum force. In a quasi-experimental study Singrün (2014) showed that a five week training intervention of three units per week of 15 to 20 minutes showed a significant increase in strength in every tested item like sit-ups, squats, pull-ups, bench press and prone extensions (Singrün, 2014).

Endurance skills

It has also been shown that endurance training in a school setting can be successful. In a quasi-experimental study with 5th grade children, Singrün (2014) showed that boys and girls in a five week training program improve their aerobic endurance performance significantly. Both sexes improved equally (Singrün, 2014). These results convince because of the fact that the bodies of children and adolescents already behave similarly to those of adults. Thus, even in children and adolescents there are structural and functional signs of adaptation through endurance training (Weineck, 2010).

Coordination skills

As the physician and sports scientist Weineck explains, it is never too early to train the coordinative abilities. There is only unadjusted training. On a biological level our body is fully developed for coordinative stimuli earlier than for conditional performance (Weineck, 2010). It is therefore not surprising that it has been shown that coordinative skills can be successfully developed during physical education in school. McGuine and Keene (2006) show that with a balance training program of four weeks the risk of ankle sprains in high school basketball and soccer players was significantly reduced (McGuine & Keene, 2006). In another study Singrün (2014) examines the performance change of ball coordination of 5th grade children during a four week training program with two units per week of 20 minutes and observed that in every tested unit there were significant differences (Singrün, 2014).

In conclusion, it can be assumed that well-structured and executed physical education lessons can indeed have positive effects on the physical performance of the children. However, it should be mentioned that physical education in school also have to deal with the discontinuity, which can cause the developed effects to disappear quickly because of the semester breaks and public holidays. Despite this fact, the training component of the physical education lessons remains an important part of physical education in school because through the general education aspects the children learn to train themselves individually and correctly and experience that their efforts have a positive and noticeable effect on their body (Singrün, 2014).

4 The *KaziBantu* project

4.1 The aim of the toolkit

As mentioned, the double burden of disease, including communicable and non-communicable diseases, especially in low income countries like South Africa are on the rise (Mayosi et al., 2009). Besides communicable diseases, a major challenge for today's health system and also in the future are non-communicable diseases like diabetes, cardiovascular diseases, cancers and obesity-related diseases (Yap et al., 2015). As an example, since the year 2000 approximate 171 million people were diagnosed with diabetes and it is expected that in the year 2030, 366 million people would be diagnosed with diabetes worldwide, signifying an increase of 1.6% in 30 years (Naidoo, Coopoo, Lambert, & Draper, 2009). One reason for this development is that younger generations are more and more overweight. Today more than 10% of the world child population is estimated to be overweight and a quarter of them are obese (Lobstein, Baur, & Uauy, 2004). These problems exist in South Africa as well and are not limited to some regions of the country but concerns all low-income communities in urban (Steyn et al., 2004) and rural (Tollman et al., 2008) regions. With this background, the DASH study, an acronym for "Disease, Activity and Schoolchildren's Health", aimed to study the health burden which occurs through factors like communicable poverty-related diseases, malnutrition and inactivity. The

DASH study is a three year (2014-2017) longitudinal epidemiologic cohort study, with a final follow-up in March 2018. The main goal was to quantify the severity of the effects on the state of health of children from township regions around Port Elizabeth in South Africa. The structure of the study was based on eight disadvantaged schools of black and coloured communities around Port Elizabeth. The children were examined twice and were between 8 and 12 years old. In each study they were tested for their disease status, anthropometry, level of physical fitness, cognitive performance and psychosocial health.

The eight schools were divided into four intervention schools and four control schools. The intervention schools received a multi-fold school-based intervention consisting of physical education lessons, health and hygiene lessons, dancing-to-music lessons, nutritional supplements and anthelminthic (deworming) medication (Yap et al., 2015).

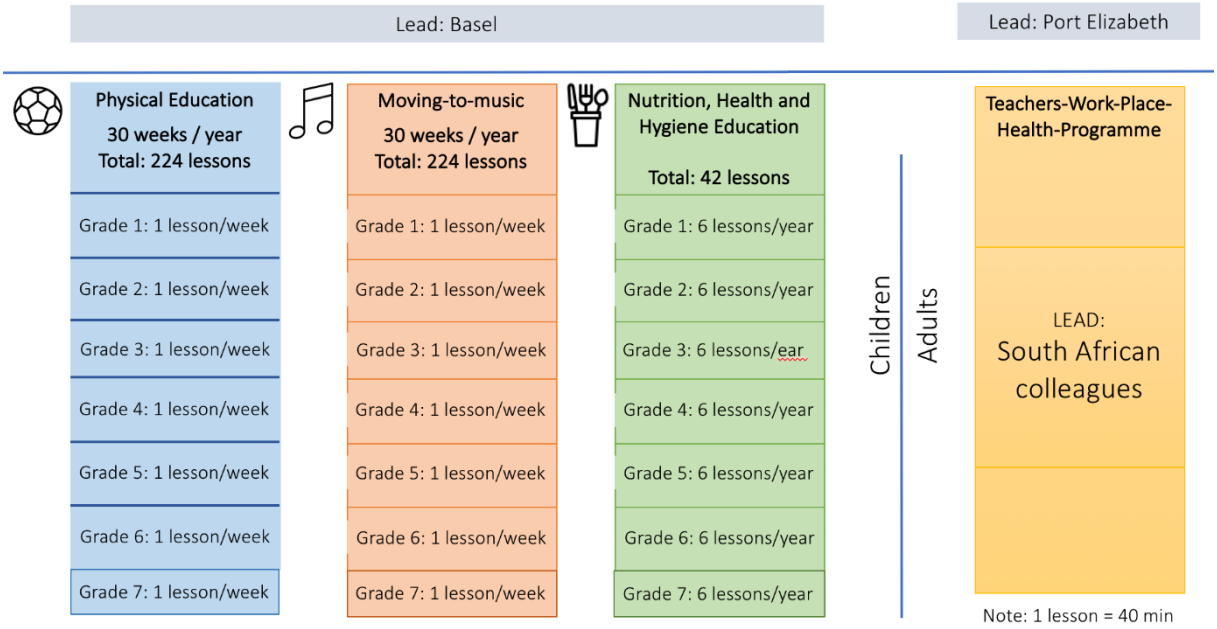
The results of the study showed, among other things, that the children who were in the intervention group had a better health-related quality of live due to physical activity, which means that the children had a better subjective perception of the overall functioning of their body (Salvini et al., 2018) . In addition, it has been found that about one fifth of girls and a little more boys live up to 60 minutes of physical activity for six days a week. At the same time, almost a third of the children do not meet these requirements almost every day of the week. It has also been shown that there is a negative correlation between the activity level of the children and the risk of hypertension and high body fat levels. Another influence of the physical activity on the intervention group was that, on the one hand, a smaller increase was observed in the skinfold measurement as well as in the body mass index (Müller et al., 2017).

Based on this and other studies (Naidoo et al., 2009; Draper et al., 2010) which showed that physical activity at school has a positive impact on the health and behaviour of children, the follow up of the DASH study was born – the *KaziBantu* Project. Here, the aim was to create a teaching tool which targets the physical and mental fitness of children and tries to transform their lifestyle into a more healthier lifestyle. The *KaziBantu* teaching tool is a multidimensional teaching tool for children which consists of three different teaching components, “physical education”, “moving-to-music” and “health and hygiene”. Together, this teaching tool should provide children with knowledge and experiences along the way, which enables them to maintain an active and healthy lifestyle into adulthood. Furthermore, not only children should benefit from this teaching material, but their teachers as well. Firstly, through the already prepared lessons for the children and secondly through the ‘*KaziHealth* Teachers Workplace Health Program’. Here, teachers can learn more about their health status and are provided with tools to improve lifestyle behaviour.

The *KaziKidz* team, responsible for the development of the three teaching modules for the schoolchildren, was located at the University of Basel and the Swiss Tropical and Public Health Institute, with close collaboration with local experts and advisors in South Africa. The Nelson Mandela University in Port Elizabeth was responsible for the development of *KaziHealth*, the Teachers’ Toolkit. The analysis of the number of school weeks in a school year, led to the

conclusion of the development of 224 lessons for "physical education" and "moving-to-music" (Table 2). This corresponds to one lesson per week during the entire grade 1-7 school year. Furthermore, it was decided to design six "health and hygiene" and “nutrition” lessons per grade.

Table 2: Development plan KaziKidz and KaziHealth program.



In the following part, focus will be placed on the physical education tool. The uniqueness of the environment where the toolkit will be used will be explained, as well as the pedagogical concept that has been taken into account during the design of the teaching material.

4.2 The environment and specific setting

Most people in South Africa who live in lower social classes, live in so-called townships. Accroding to Pernegger & Godehart (2007) there is no clear definition for the term ‘township’. As stated by them the most common definition for these areas are “underdeveloped, usually (but not only) urban, residential areas that during Apartheid were reserved for non-whites (Africans, Coloureds and Indians) who lived near or worked in areas that were designated ‘white only’.” (Pernegger & Godehart, 2007)

Historical documents indicate that townships existed in Cape Town and Port Elizabeth at the beginning of the 19th century. However, the first modern settlement of this type probably originated in 1867 in the town of Kimberley in the north of the country, when the first townships were built for miners (Darity, 2008). As the professor for political economy, Prof Patrick Bond writes, black people were initially either lured out of their original settlement area or were forced to leave their home places. The emergence of such townships then increased, especially from the beginning of the 20th century, after the Buren war, and was further fuelled by the

emergence of health problems. For White people, it was clear that these problems have their origins in the black population and racism and segregation began to intensify (Darity, 2008). The more white people in the course of time gained power and were in the positions to create laws, the more pronounced the segregation between people of different skin colours became. The climax of the fast enlargement of such township regions and the resulting racial discrimination and segregation during the Apartheid era was experienced in 1948 by South Africa, where the concept of Apartheid was officially incorporated into the constitution until 1994 where South Africa finally managed to become democratic (Darity, 2008).

But even after the end of Apartheid understandably, the social and health problems did not simply disappear. According to the Gini coefficient, South Africa is still the country with the second largest unequal distribution of family income in the world (Central intelligence agency, 2013). This means that living conditions for families in township regions have still not changed greatly. Therefore, the disadvantaged areas are still struggling with health issues from the legacy of the colonial era and the Apartheid era. At the same time, however, the steadily progressing urbanization and the change in lifestyle brings with it new health problems, such as the increased incidence of non-communicable diseases (Myer, 2004). To summarize, many of the problems that still prevail in townships regarding health, poverty and race in South Africa today are the effects of long-term social, political and economic discrimination (Myer, 2004).

Growing up in this environment means facing many obstacles from birth. The most common causes in township regions to get sick or even die is through violence, high blood pressure, diabetes mellitus, stroke or psychological stress, and in addition to this, the medical standards in township areas have a lower standard than in urban developed areas (Butchart et al., 1991). Which means that people from the township areas should know how to get out of the way as best as possible of health problems by living a healthy lifestyle and they should know how to deal with conflicts.

In order to teach children the importance of this knowledge of how to live a healthy lifestyle and how to deal with conflicts, township schools can make an important contribution. Studies have shown that well-structured and safe schools in township areas are an important place for children to shape their character and strengthen their resilience to the difficult life circumstances (Mampane & Bouwer, 2011). With the *KaziBantu* project, trying to create a teaching tool in a low-infrastructure environment with many organizational challenges, such as large classes and teacher’s time pressure. The aim was to create a toolkit which playfully enhance children's motor and social skills so that they are prepared for upcoming challenges after school and practice a healthy and active lifestyle.

4.3 Methods

When creating the teaching material, it was important for the *KaziBantu* team to seek close cooperation with local teachers, bringing local experts on board to anticipate as many cultural differences and anticipate as many difficulties in planning as possible. We were supported by two physical education teachers from South Africa which taught several years at privileged and advantaged schools and five master students from the Nelson Mandela University in Port Elizabeth, South Africa, who not only lived in the country, but who were also involved in the DASH study and were well acquainted with the circumstances in township regions.

The official kick-off for the project was on the 16th of August 2017 together with the project management of the University of Basel, representatives of the Swiss Tropical and Public Health Institute (Swiss TPH), the main sponsor of the project, the Novartis Foundation, the four Master students from South Africa and the five Master students from Switzerland. Besides the exact goals for the project, the following schedule was announced (Figure 4).

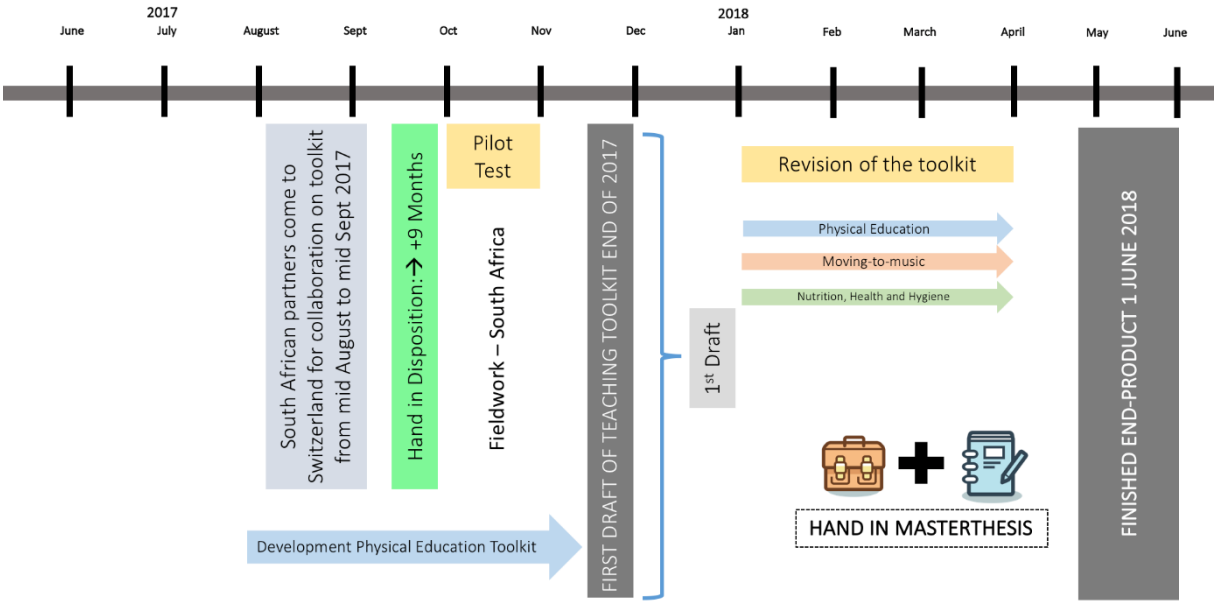


Figure 4: Schedule KaziKidz physical education toolkit.

At the end of the kick-off meeting followed a one-month intensive work phase, whereby the goal was to lay the foundation of the lesson contents to have put together 60% of the content by the end of September. One of the first tasks were to define the further basic structure of the toolkit. Based on local expert knowledge, which we received from the four South African master students, it quickly turned out that the pedagogical and didactic content of the toolkit had to be an issue that needed to be addressed in a second step. First, we had to clarify the institutional and technical barriers in this environment, which are to follow.

Teacher related barriers

Teachers in township schools are often not specifically trained to teach physical education, nor can they attend further education in this subject, especially in grade 4-6. As a result, teachers are often overwhelmed with teaching physical education, adding to the burden of already large class sizes. Therefore, the teachers regularly lose confidence in their own teaching skills. Furthermore, physical education is often seen by teachers as less important than other school subjects such as Mathematics and the Sciences. It is also difficult for teachers to properly assess physical education which adds to their teacher barrier. Lastly, the planning of teaching units is a problem because teachers lack the experience and they generally do not have the knowledge to plan a structured lesson including a warm-up, main physical education section and an adequate cool-down.

Institutional barriers

The infrastructure at most township schools is at a low level. In terms of sports infrastructure, there is generally plenty of space to move around, but the playing field is usually limited to a hard concrete floor with two netball baskets. The existing sport fields are generally full of stones and broken glass making it unsafe to play or exercise on. The material that can be used for physical education changes from school to school but is mostly limited to a maximum of one or two balls and some cones. At the same time, the class sizes of 40-60 children per class are well above the average of privileged schools with 20-30 children per class. In addition to that, the teachers are often under heavy time pressure and so physical education are often replaced if time is needed for other subjects. Further projects that try to aid the teaching of physical education often lacks the alignment with the National Curriculum and therefore create even more work for teachers.

With these points, our goal was therefore to create a teaching tool based on the existing national curriculum, to make implementation as easy as possible for teachers. Furthermore, the lessons were designed by taking into account barriers such as large class sizes and time pressures faced by teachers. In addition to that, at the end of each term, a formal assessment was planned so that teachers can document the learned content during the school year.

All lessons were designed so that implementation can be done with minimal equipment and material. Lessons were structured with progression, so that children can continually improve their motor skills. In order to guarantee this advancement of motor skills, lessons were based on the metaphor of Clark and Metcalfe (2002), which describes the development of motor skills as follows.

The mountain of motor development

In an attempt by Clark and Metcalfe (2002) to describe the development of motor skills in a metaphor, an image of a mountain was used. This mountain can be divided into six different periods, namely the reflexive-, preadapted-, fundamental patterns-, context-specific-, skilful- and the compensation-period (Clark & Metcalfe, 2002). The totality of all motor skills does not result in a single mountain peak but different peaks of different heights, depending on the level of individual motor skills (Figure 5).

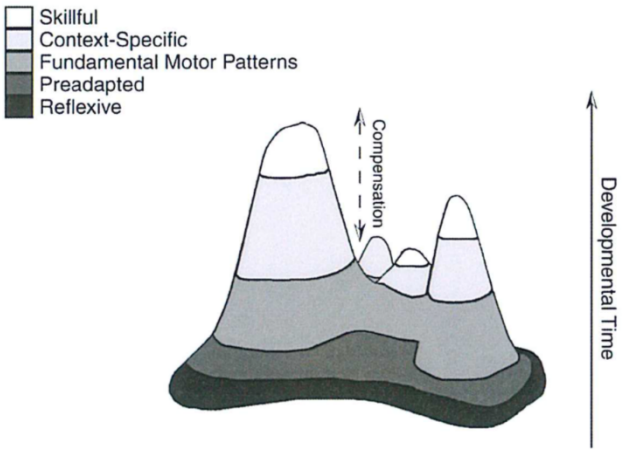


Figure 5: The mountain of motor development (Clark & Metcalfe, 2002).

According to Clarke and Metcalfe (2002), none of these periods can be assigned exactly to any age. Although a period is age-dependent, it is not determined by a specific age. Rather, motor development is seen as a cumulative, sequential and interactive process that lasts a lifetime, because the goal is to adapt to the different phases of life and to be an autonomous actor in this world (Clark & Metcalfe, 2002).

The individual periods describe the two as follows:

Prenatal development
Before a child is born, the parents have gained their own experiences in life and, depending on their lifestyle, give the foetus information along the way - information on a healthy and physically active lifestyle. However, this does not mean that this information cannot be changed, but according to Clark and Metcalfe (2002) only the genetic component reflects. This is at the same time this is the height where the climber begins his journey to the summit.

Reflexive
Clark and Metcalfe (2002) subdivided this period into a time before birth and a postpartum period. As soon as the child enter the world at birth, the challenges change abruptly. In the reflective period in which one is already born, there are spontaneous movements and reflex movements. Reflex movements include drinking from the mother's breast or protecting

potentially painful stimuli. The spontaneous reflexes are reflexes that do not occur due to a specific stimulus but are simply executed. Clark and Metcalfe (2002) assume that the new born will become accustomed to the great change from womb to outside world in this reflex phase. In addition, the reflexes should serve to create a first dialogue with the outside world.

Preadapted

This is the phase in which the transition passes from pure reflex movements to purposefully controlled movements which make the individual an independent and adaptable actor in the world. The goal is to overcome the gravitational force and to control the various degrees of freedom of our body to an individual which can move itself and to feed itself. This phase usually lasts from the second week of life until the end of the first year of life (Clark & Metcalfe, 2002).

Fundamental motor patterns

In this phase of movement learning, according to Clark and Metcalfe (2002), is about laying the broad base of movements. A base on which you can always fall back on when learning new skills. The most important learning step here is the learning of adaptive movements which allow the individual to adapt when moving through the environment. Part of this phase is the development of interactive patterns of coordination that allow humans to purposefully throw or intercept objects.

Context-specific period

From this point on, the learning of movement always becomes more individualistic. Once the fundamental repertoire of movement, which looks similar in all people is learned, the development is more influenced by family, culture and social factors. In this phase, the perceptual-cognitive capabilities are added. For now, a human being no longer has to be able to understand only the movements, but also to understand the rules of the game as well as to acquire context specific knowledge. Because the context-specific knowledge plays an important role in this phase, collecting experiences in these forms of movement is an important point in order to continue to climb the mountain. Also, in this phase it is important to notice that all the experiences and environmental influences that children collect, are important factors which determine how fast and how far the person climbs the mountain. However, as with climbing a real mountain, the higher you get, the more difficult it gets as well (Clark & Metcalfe, 2002).

Skilful period

When a person has reached this stage of movement execution, he can perform movements with greatest security in different environments. In order to carry out tasks associated with this movement execution, it requires minimum energy. The movement is perfected with a precisely controlled output. However, it takes a long process to achieve this level of movement execution and few motor skills are developed, if any, to such a level. By reaching this period, one has reached the metaphorical pinnacle of movement learning (Clark & Metcalfe, 2002).

In order to reach this peak, a person inevitably runs through the different periods of motor learning while building on the previous stage as a basis. However, it is not exactly defined how

long a person stays on each level. Climbing up the mountain requires sequential and cumulative workouts at each level for the improvement of the specific motor ability (Clark & Metcalfe, 2002).

In our specific case of the *KaziBantu* project we can assume that the majority of the grade 1-7 children are in the period of the "fundamental motor patterns" and the "context-specific period". It was therefore important to provide exercises and games through the lessons which, on the one hand, expanded the children's movement foundation and, on the other hand, strengthened existing skills and abilities. Especially for grades 1-3, we oriented ourselves on the period "fundamental motor patterns". For grades 4-7, we focused more on the "context-specific period".

In order to create the most suitable teaching material for the teachers with a maximum movement learning effect for the children, we therefore agreed to design lessons that contain repetitive elements. On the one hand we wanted to relieve the teacher who has to do physical education with large classes and on the other hand to give the children the opportunity to learn certain abilities and skills by repeating them. To adapt the exercises and games to the different levels of learning, most contents therefore also contain different variants to make them easier or more difficult.

Lesson content

The games and exercises which were used in the toolkit are for the most part not creations of our own, but adapted forms of already existing physical education content to our setting. We were inspired by other teaching aids such as the book series "Platinum - Life Skills", the book "Crows and cranes: more than 300 illustrated games and interesting activities", the "Competence Box for Physical Education" from the Zurich sport office and many websites such as "www.mobilesport.ch" or "www.teachpe.com".

Fieldwork: Planning and development

After the first intensive work phase in Switzerland, where a large part of the games and exercises for the 224 physical education lessons were put together and 60% of the lessons were provisionally structured, we set out on 9 October 2017 for Port Elizabeth, South Africa. The aim was to test as many lessons as possible on site at different schools and to adapt and improve them in cooperation with the local teachers at township schools.

In Switzerland, we planned our stay and looked to visit as many schools as possible to get a more accurate picture of the different places and infrastructures. At the same time, we chose the "Sapphire Road Primary School" in the Northern Areas, which is a coloured community and the township school "Enkwenkwezini Primary School" to work closer together with the teachers of these schools. The intent was to work closely with two schools to build a foundation

of trust between the teachers and us to get as unfiltered information as possible, about topics which support the physical education teachers.

Arriving in Port Elizabeth it turned out that the time of our stay (between October and November) was suboptimal for two reasons. One reason was that due to the long Christmas and summer vacations which came closer there was exam time in South African schools. Therefore, many of the teachers did not have time to talk to us about the quality of the current physical education classes at their school, or to do our prepared lessons and then discuss them with us. A second reason for the suboptimal timing was that at the time we were in Port Elizabeth there were riots in some township areas with road blocks and shootings. According to our local partners, these circumstances would have been too dangerous to drive into the regions at all.

Nevertheless, we were able to benefit greatly from our stay in South Africa and incorporate many important experiences and insights into the educational tool *KaziKidz*.

Here are some important points in the overview:

Qualification of teachers
In our lesson observations, we quickly realized that teachers are often overwhelmed with the number of children they have to teach. What works well in the classroom due to the limited space is already much more difficult outside. Most teachers taught in the open air the same way as in the classroom, which means that during exercises, often only one or two people demonstrated the exercise and the remaining children had to watch until it was their turn. Organizing various teams and presenting the games that we proposed was often difficult for the teachers. It often happened that they tried to play a game but did not understand the core of the game and played a completely different game which only worked moderately. With such examples, we can say that the teachers lacked knowledge and experience with physical activity and sports training.

Lesson design
The combination of too little time to prepare the physical education lessons, many children in a class and teachers which is not specifically trained for physical education, often meant that games and exercises were implemented incorrectly. If the explanations of games were longer than 6-7 sentences, usually only the first half was implemented, as the teachers in our opinion did not read the whole description. This assumption was confirmed when we tested the same lesson in two different forms at two different schools. The first lesson had only a textual description and the second lesson, in support of the teacher, had pictures beside the written text. The lesson with the illustrations worked a lot better and was also perceived as pleasant by the teachers.

Motivation of the teachers vs. motivation of the children
The motivation of the teachers for the physical education lessons was difficult to estimate. Teachers told us during interviews that they like physical education and that they enjoy being

outside with the children. However, we felt that the teachers only did the physical education lessons because we were there and wouldn't perform the physical education lesson otherwise. The children, were very motivated for the physical education lessons. If teachers gave children a clear mission and explained how a game should work, they were full of energy and ambition, despite the lack of sportswear and well-functioning infrastructure.

Material
Material and equipment was deficient at all three schools we attended. None of the schools had adequate standard balls, cones or bean bags. Often, we heard from teachers that it was one of the main reasons physical education lessons would not be carried out. Also, it is not because schools never had material and equipment, but that the these would get stolen and therefore not replaced.

4.5 Structure of the *KaziKidz* toolkit

Content - Physical Education toolkit

In this section of the thesis, the focus is on the description of grades 4-7 and explain our thoughts in creating the lessons. My colleague, Melanie Glover, does the same in her master's thesis for grades 1-3.

As mentioned earlier, it was important to stay as close as possible to the South African curriculum, always taking into account the feasibility of the lessons in this challenging setting. Therefore, at the beginning we made a compilation of the learning contents recommended in the National Curriculum and Assessment Policy Statement (CAPS). The two tables below provide an overview of the CAPS curriculum content (Table 3+4). The contents for two degrees are the same in each grade, which means for grades 4 and 5 as well as for grades 6 and 7.

Table 3: CAPS overview for Physical Education grades 4+5.

TERM	1	2	3	4
TOPICS	Participate in movement / Movement sequences	Invasion games / Target games	Rhytmic movement	Track & Field
ACTIVITIES	Walking, Running, Hopping, Skipping, Leaping, Jumping, Rolling	Netball, Soccer, Rugby, Frisbee, Obstacle course	Marching, Aerobics, Stepping, Gymnastics	Shot put, Javelin, Long / High Jump, Sprints, Distances, Relays
ASSESSMENTS	Passing & Ball control / Dribbling	Passing & Catching / Agility	Acrobatics Show / Partner acrobatics	Track & Field / Running

Table 4: CAPS overview for Physical Education grades 6+7.

TERM	1	2	3	4
TOPICS	Striking & fielding games	Physical fitness programm	Rhythmic patterns / Coordination	Refined sequences
ACTIVITIES	Cricket, Tennis, Soccer, Hockey	Agility, Power, Speed, Flexibility, Endurance, Circuit training	Aerobics, Galloping, Marching, Hopping, Skipping	Gymnastics
ASSESSMENTS	Precision shooting / Team Skills	Muscle endurance / Scoring	Passing & Taking the space / Agility	Show -> Create own dance / movement in group

On the basis of this list of the various topics, as well as the activities proposed, we tried to find a compromise, which was as close as possible to the CAPS, but at the same time also ensured the teaching ability for the teachers and the fun factor for the children.

Therefore, we were looking for four sports that were appropriate and easy to teach in the township setting, with little material and taking into account the preferences of the two sexes as balanced as possible. Our choices were soccer and athletics, activities that reflect the preferences of the boys, and netball and moving-to-music, activities that are especially popular with girls.

In order to ensure that well-organized lessons are available in spite of large class sizes and little material, and that the children can get enough exercise and at the same time achieve a certain level of the taught sports, we decided to keep the same four sports over the four grades. In each of the four terms per grade, another activity is the focus, in turn changing the focuses of the different activities per grade. A concrete example is discussed in chapter 4.6 with the activity “Soccer”.

After defining the four different main activities, the respective forms of examination had to be determined. In doing so, the prescribed main topics were taken into account and an exercise was determined for each term and each main activity. For this purpose, a criteria grid was created for each form of examination, consisting of a participation component and a movement component (for example, see chapter 4.6), which the teacher only has to fill out for each child on the exam day. It was also important to us that the teachers are able to communicate the forms of examinations early in the term, so that the children are aware of what they are training for and thereby better prepared and motivated.

Design – Physical education toolkit

After some of our lessons had been tested and interviews conducted with four teachers we had more information regarding the teachers' needs. Among other useful information, we also received information regarding the toolkit's appearance, to best enable teachers to use it outdoors during the physical education lessons.

The teachers indicated it was important for them that the lessons were kept short and compact and that they could be taken outside. From this information, we concluded that the individual lessons should be designed on a DIN A4 sheet, recto verso if necessary. In addition, the lessons should be laminated so that they can be taken outside even in wet conditions.

Together with the three other Swiss master students, who were responsible for the toolkits "Moving-To-Music", "Health and Hygiene" and "Nutrition", we looked for a solution to bundle the three parts of the *KaziKidz* toolkit. We decided to arrange the lessons in a box with a sort of file folder per grade. Through this design, the lessons can be removed individually from the folders and possibly also copied, if a school does not have a toolkit for each teacher.

We collected all our ideas and drew them with a computer-aided design (CAD) software (Figure 6) so that we could pass our ideas on to the international video, television and animation production company "Rooftop Production", Port Elizabeth, South Africa. "Rooftop Production" is the company that was brought on board by the *KaziBantu* project management to do all the corporate design for the project, as well as the illustrations of the lesson content. Our idea of the first draft was then implemented by "Rooftop Production" (Figure 7).

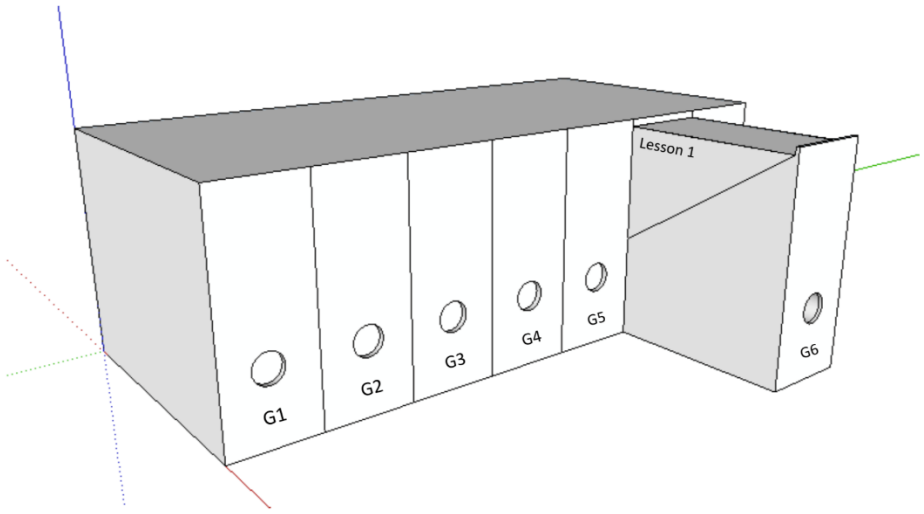


Figure 6: First CAD Draft of the KaziKidz toolkit design.

Figure 7: First "Rooftop Production" designs of the KaziKidz toolkit.

In some other sessions together with "Rooftop Production" we discussed other important topics, such as the design of a new logo and the design of a mascot for the entire learning tool.

We agreed on a mascot named "*Kazi*" which reflects a lion with human features. The aim was to select a powerful and mighty animal that is also dressed in an active and sporty way, so that the children can take this as a role model (Figure 8). The mascot remains the same for the entire toolkit, changing only the T-shirt depending on which part of the toolkit it appears in.

Figure 8: The KaziBantu mascot in the physical education dress designed by "Rooftop Productions".

After the design was decided and all 224 lessons had been created, "Rooftop Production" began drawing the illustrations for the physical education lessons. After that process, the designers sent us their work and we reviewed the illustrations and send feedback and requests for changes back to Rooftop Production.

4.6 Physical Education example lesson

Each lesson in the *KaziKidz* physical education toolkit from grade 1 to grade 7, has the same structure. The lessons are standardized for 40 minutes and are divided into a warm-up, a main part and a cool-down. The main part should last 20 minutes, with the warm-up and cool-down each 10 minutes. The fundamental structure of each lesson also consists of a list of material and equipment needed throughout the lesson.

Individual exercises and games are all structured the same way as well. To aid in teachers' understanding, the content is subdivided into: "equipment", "how to play", "goal of the game" and "what to watch out for".

Equipment
Here, a brief list is displayed on which material the teacher would needs for each lesson. This short list will enable him / her to prepare the material for the next learning content before the end of an exercise or a game, and thus can design a fluid lesson without much lost time.

How to play
In this section, the game is explained as simple as possible to the teachers. The goal is that a teacher can perform any game without having known it beforehand. This goal is guaranteed on the one hand by a short text which describes the content, as well as an illustration which contributes to a better understanding.

Goal of the game
In order for the teacher to classify which skills and abilities should be promoted when teaching the content, the section "goal of the game" describes the main focus of each lesson.

What to watch for
If the teacher is overwhelmed with the keywords of "goal of the game" and does not know exactly what he / she should pay attention to in an exercise, he / she can use the rubric "what to watch for". For each learning content, one feature is selected and described so that the teacher can focus on correcting it. The goal is that through these comments, exercises with a higher quality and correctness can be performed.

A grade six soccer lesson has been selected in the following example. This lesson focuses on precision shooting (Figure 9+10).

Grade 6 | Lesson 2 | Time: 40 min

Soccer: Precision shooting

Physical-education: Intermediate phase

Equipment

- Balls.
- Cones.
- Stones.

Treasure island

Introduction
Time: ~ 10 min

What you need: Balls, cones, stones.

How to play

The teacher divides the class into 4 teams. Each team has about 7 cones (slalom) in front of them (1m distance from one cone to the other). At the end of the slalom there is one spot with "diamonds" (stones). The learners have to dribble through the slalom, take a diamond and dribble back through the slalom. The team with the most diamonds wins the game.

Goal of the game

- Learn to dribble fast and stay focused.

What to watch for: The learners have to do the dribbling course both ways. Tell the learners to make little but fast steps so that they can better control the ball.

Divide the group in two teams. One team does the exercise "The tunnel shot". The other team plays the game "Precision wins". First explain the exercise "Precision wins", and let the learners play. The teacher then works with the other team. After 10 - 15 minutes change the team activities.

The tunnel shot

Main part
Time: ~ 10 min

What you need: Balls.

How to play

Ask the learners to get into groups of two learners. Each pair has one ball. One learner stands some metres away and opens his/her legs. The other learner now tries to shoot the ball through the legs of the first learner. After some tries the learners need to change their roles.

Goal of the game

- Learn to shoot the ball accurately towards a target.

What to watch for: Tell the learners to try shooting at different distances. The greater the distance, the harder it gets.

Page 1 of 2

Figure 9: Grade 6 - soccer lesson 2 "precision shooting" Part 1

Grade 6 | Lesson 2 | Time: 40 min

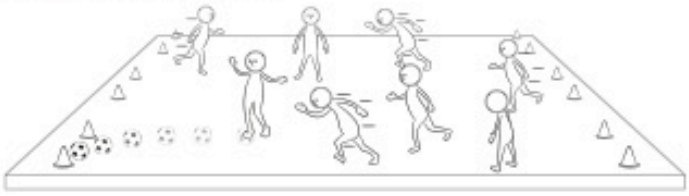
Precision wins

Main part
Time: ~ 10 min

What you need: Ball, cones.

How to play

The learners need to form two groups and play soccer against each other. On each end of the activity area are three little goals 1 metre wide, demarcated by cones. To score a point, the teams have to shoot precisely in one of the three goals on the opposite side of the field.



Goal of the game

- Learn to shoot accurately in a real game situation.

What to watch for: Tell the learners that no goalkeeper is allowed within 2 metres in front of the little goals.

Mystic knot

Cool down
Time: ~ 10 min

What you need: No equipment required.

How to play

The learners form teams of 10 and begin by holding hands with each other, sometimes crossing their arms. They don't give both hands to the same learner. When everyone is holding hands, the learners try to untangle the knot, but they are not allowed to release the hand of their partner.

Goal of the game

- Concentrate on the task.

What to watch for: The learners are not allowed to lose the hands of their partner. Encourage the learners not to abandon but to resolve the problem.

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Figure 10: Grade 6 - soccer lesson 2 "precision shooting" Part 2

4.7 Strengths and limitations of the project

The *KaziBantu* project is a multimodal approach to improve children's health in disadvantaged regions in South Africa. With the two vectors, teacher health education and providing health education for the children, *KaziBantu* seeks to tackle the rapidly evolving health issue at its source. It is an approach with a lot of potential which takes time to develop into a well-functioning final product, given the complexity of the setting and the diversity of the project. In the following section, the strengths and weaknesses of the *KaziKidz* physical education toolkit will be discussed.

First of all the tight scheduling could be a weakness of the physical education toolkit. From the kick-off meeting, mid-August 2017, to the submission of the first final version of the teaching material, end of April 2018, provided only eight and a half months. In this time, 224 lessons and the design of a whole teaching tool from scratch had to be developed. In addition, due to the time spent on the field in South Africa, which coincided with the exam period of South African Schools, the time could not be used as extensively for testing of the lessons as originally planned. As a result, far less than half of the lessons could be tested once. Which means we had to design some lessons based on the accumulated experiences without testing them in the real setting.

Another challenge is the education of the teachers for the school subject of physical education. Despite providing games and exercises that were not to complex, we noticed that the teachers often lacked the skill for well-executed physical education. Even though the exercises or games are brief and simple, teachers often only take a quick look and then teach a different form of content.

Another difficulty for achieving measurable change with the toolkit in the future is the discontinuity of physical education in South Africa. At the moment, physical education still seems to play a secondary role among teachers. Many of the physical education lessons ultimately do not even take place because of various reasons. For example, when we visited in order to test lessons, the lessons did not take place due to bad weather. Once because it had rained previously and the concrete place was still slightly wet and once due to extreme heat and glaring sunshine. In addition, public holidays and vacations also interrupt the periods of the sporting activities.

One of the strengths of the teaching tool is certainly its proximity to the South African curriculum. Each lesson is as close to the national curriculum as possible, so teachers do not need to be concerned about whether they meet the requirements of school inspectors. The same applies to the examination forms for grades 4-7. As specified in the CAPS, the physical education grade is divided into two sub-grades (participation and movement performance) and ultimately results in a maximum score of 30 points, which together with the other sub-scores from "personal & social well-being" and "creative arts” Can easily be converted into the “Life Skills” final mark.

Another asset of the teaching material is the simple and ready-made structure of the lessons. This allows the teachers to easily read the lessons the day before and perform them the next day. Another relief for the teachers are the repetitive elements which means they will not have to explain new games and exercises to 60 children at each physical education lesson. At the same time, these repetitions mean that the children already know the content and thus a higher physical intensity can be achieved over time, as well as a greater fun factor.

Furthermore, the goal was to consider possible sports and games which are known in South Africa and already have a sports history background. With the main activities being soccer, athletics, netball and moving-to-music, it was also considering how the preferences of both sexes can be addressed.

Finally, the attractive and compact design is one of the strengths of the toolkit. Lessons that are short and compact but nevertheless clearly explained with illustrations can be better integrated into everyday lessons by the teachers.

5 Discussion

According to the WHO constitution of 1968, health is a fundamental human right. This includes enabling people to be educated on health issues, as well as providing the maximum resources to enable the population to live healthily without discrimination by race, age, ethnicity or any other status (WHO, 2017). The *KaziBantu* project aims to support this human right and to provide some of the necessary resources for schools in disadvantaged areas.

With the development of a primary school teaching tool specifically geared towards the setting of poor fringe groups such as the township population in South Africa, a contribution is made to promoting a healthy lifestyle and increasing knowledge about health issues. The specific case of the physical education toolkit serves to promote the physical, intellectual, emotional, personal and social competencies of the children, thus helping them to live a healthy life during school as well as subsequently as adults (NCS, 2011).

The *KaziBantu* project contains potential, as physical education at disadvantaged schools is not yet well developed. Through the two-month field stay in Port Elizabeth, South Africa, the *KaziBantu team* got better acquainted with the social, schooling and infrastructural conditions in the disadvantaged areas. Thereafter, we realized that there is a significant gap in this setting regarding the promotion of physical activity. With assistance such as ready-to-use lessons, the workload on the teachers can be lessened and the subject can hopefully be taught with renewed enthusiasm. Because the children do not have to be particularly motivated to play outside despite of lack of sportswear. Rather you have to give them the space to move, according to Pienaar, Visagie, & Leonard (2015) who found out that the level of the motor skills correlated with the environment.

According to us it would be too visionary to think that with the handing over of the teaching materials, the teachers would suddenly follow them exactly and carry out all the lessons as planned. The education of the teachers as well as the existing material are the Achilles heel of the project. While watching the physical education lessons, it is noticeable that teachers often fail because of exercises and games they either have never played or experienced before, or because they simply do not have the necessary sporting expertise to organize the physical education class in a proper manner.

Therefore, in future, the focus should be on teaching the teachers. On the one hand, this will assist the teachers in organizing physical education lessons, such as creating teams quickly during the lesson, or aiming for improvements of learner's movements. On the other hand, teachers should have personal experience with the proposed games and exercises of the *KaziKidz* physical education toolkit. Because only then will they comprehend what is important in this content and what they should explain to the children.

A second focus should be the material used. Even though we considered, while developing the lessons, that the material can either be made by the children themselves or the classes include as little material as possible, this component remains a challenge. To make physical education attractive to both teachers and children, according to us there is a certain amount of material needed, such as balls, cones, bean bags, skipping ropes and hula-hoop rings, which should be included with each toolkit. The issue of sustainability of this teaching material should, of course, be discussed. However, we believe that the physical education material could be another motivating aspect for the teachers and the children and therefore could be an initial impulse for teaching the *KaziKidz* toolkit. Especially for the first pilot phase these two points should be considered and implemented as well as possible.

If the project manages to overcome these challenges and the education of teachers on the importance of the health of children is improved, the developed teaching materials can provide a good basis to implement consistent and high quality physical education in the townships and thus take a step towards a balanced educated and healthier communities in poor neighbourhoods of South Africa.

"Sport has the power to change the world. It has the power to inspire. It has the power to unite people in a way that little else does. It speaks to youth in a language they understand. Sport can create hope where once there is only despair." Nelson Mandela, 2000

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Appendix

Lesson grade 6 – Netball (Sample)

Grade 6 | Lesson 1 | Time: 40 min

Netball: Muscle edurance

Physical-education: Intermediate phase

Equipment

- Balls.
- Cones.
- Ribbons.

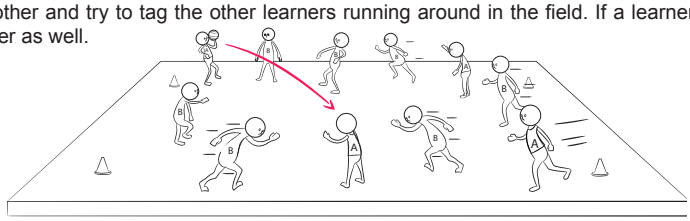
Tag the enemy

Introduction
Time: ~ 5 min

What you need: Ball and ribbons.

How to play

The teacher marks out an activity area with 4 cones. The area is smaller if there is a small group of learners and bigger if there are more learners. Designate four “catchers” and give them a ball. The catchers now have to pass the ball to each other and try to tag the other learners running around in the field. If a learner is tagged he/she becomes a catcher as well.



Goal of the game

- Learn to collaborate and to find solutions to get to their goal.

What to watch for: The catchers are not allowed to run with the ball or throw it.

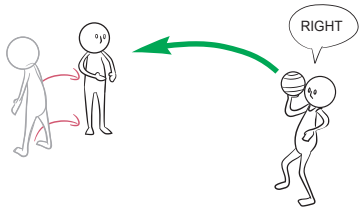
Quick reactions

Introduction
Time: ~ 5 min

What you need: Balls.

How to play

The learners form groups of 2. Each group has a ball. Learner 1 has the ball and is the passer. Learner 2 stands 3 metres ahead of learner 1, facing in the same direction. Learner 1 with the ball calls either “left” or “right” and passes the ball in that direction. Learner 2 rapidly spins around to the left or right and attempts to catch the ball.



Goal of the game

- Learn to react quickly and catch the ball.

What to watch for: If the learners struggle to catch the ball, tell them to adjust the distance between them.

Page 1 of 3

Grade 6 | Lesson 1 | Time: 40 min

While playing the game “Corner ball”, the teacher interrupts the game for 2 minutes and lets the learners do each of the Superman/Superwoman workouts. Stop the game 5 times, always after 4 minutes.

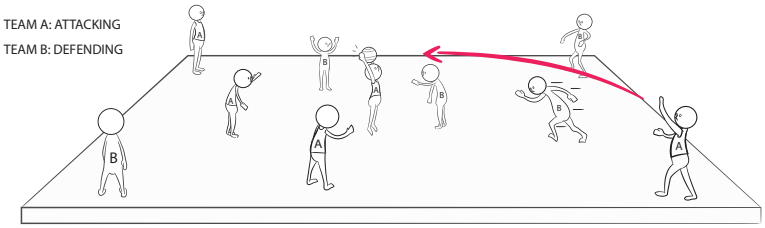
Corner ball

Main part
Time: ~ 10 min

What you need: Balls, cones, ribbons.

How to play

Mark out a playing area 15 m by 15 m. The teacher divides the class into two teams of 5 – 10 players, each with two players in diagonally opposite corners. The game begins with a “corner” player passing to a teammate. The attacking team aims to move the ball from one corner player to the opposite corner player. If the defending team intercepts a pass, they roll the ball to their nearest corner player and immediately become the attacking team. After intercepting the ball or after a goal is scored, the attacking team immediately transitions into defence. Regularly rotate the corner players. A team scores when the ball is passed successfully from one side to the other.



Goal of the game

- Develop agility, footwork, ball handling, attacking skills, defence skills.

What to watch for: Stop the game from time to time if you see a great example of spatial awareness or shooting.

Superman/Superwoman workout

Main part
Time: ~ 10 min

What you need: Water bottles with sand (if you do not have enough, tell the learners to bring bottles filled with sand for the next lessons).

How to play

Wall sitting: Sit with your back against a wall. The feet are parallel and the knees bent at an angle of 90°. (2 minutes)

Planking: The elbows are angled 90°. The body forms a line like a board. If the hips move up or down you must stop the exercise. (2 minutes)

Reverse plank: The body forms a line from the head to the feet. The elbows are at a 90° angle. As soon as the hips move down you must stop the exercise. (2 minutes)

Hip lift: The knees form a right angle. Only the shoulders and feet remain on the ground. As soon as the hips move down and you are unable to maintain the position, you have finished the exercise. (2 minutes)

1

2

3

4

Grade 6 | Lesson 1 | Time: 40 min

Superman/Superwoman workout

Continued

Goal of the game

- Train for muscle endurance and learn to "feel" the body.

What to watch for: Tell the learners that it is not a problem if they cannot hold the exercise for two minutes. With more training, they will improve. If they cannot complete the exercise, they should have a little break of 10 seconds and then continue. Observe if the learners are doing the exercises as indicated. If not, try to correct them.

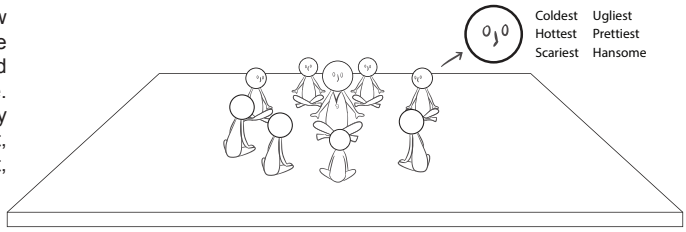
1, 2, 3 Freeze

Cool down
Time: ~ 10 min

What you need: No equipment required.

How to play

Have the learners form a large circle, sitting down, facing inward with the teacher sitting in the middle of the circle. On the teacher's command "1, 2, 3, freeze", all the learners in the circle must freeze while sitting down. If a learner moves, he/she is eliminated. Continue playing until only a few players remain. If you have a large group, make different circles and designate a leader for each circle. Tell the learners each round that they have to show a different face, coldest, hottest, scariest, ugliest, prettiest, most handsome face, etc.



Goal of the game

- Cool down with a funny activity.

What to watch for: Learners cannot lie down, hold their heads up, or close their eyes. There is to be no arguing with the teacher when eliminated and only the teacher can eliminate learners.

Lesson grade 6 – Soccer (Sample)

Grade 6 | Lesson 2 | Time: 40 min

Soccer: Precision shooting

Physical-education: Intermediate phase

Equipment

- Balls.
- Cones.
- Stones.

Treasure island

Introduction
Time: ~ 10 min

What you need: Balls, cones, stones.

How to play

The teacher divides the class into 4 teams. Each team has about 7 cones (slalom) in front of them (1m distance from one cone to the other). At the end of the slalom there is one spot with "diamonds" (stones). The learners have to dribble through the slalom, take a diamond and dribble back through the slalom. The team with the most diamonds wins the game.

Goal of the game

- Learn to dribble fast and stay focused.

What to watch for: The learners have to do the dribbling course both ways. Tell the learners to make little but fast steps so that they can better control the ball.

Divide the group in two teams. One team does the exercise "The tunnel shot". The other team plays the game "Precision wins". First explain the exercise "Precision wins", and let the learners play. The teacher then works with the other team. After 10 - 15 minutes change the team activities.

The tunnel shot

Main part
Time: ~ 10 min

What you need: Balls.

How to play

Ask the learners to get into groups of two learners. Each pair has one ball. One learner stands some metres away and opens his/her legs. The other learner now tries to shoot the ball through the legs of the first learner. After some tries the learners need to change their roles.

Goal of the game

- Learn to shoot the ball accurately towards a target.

What to watch for: Tell the learners to try shooting at different distances. The greater the distance, the harder it gets.

Page 1 of 2

Grade 6 | Lesson 2 | Time: 40 min

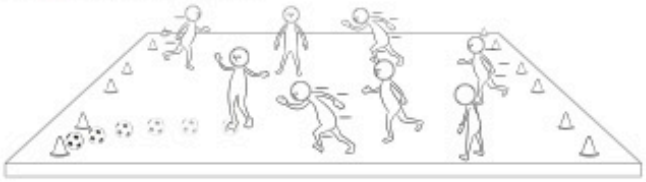
Precision wins

Main part
Time: ~ 10 min

What you need: Ball, cones.

How to play

The learners need to form two groups and play soccer against each other. On each end of the activity area are three little goals 1 metre wide, demarcated by cones. To score a point, the teams have to shoot precisely in one of the three goals on the opposite side of the field.



Goal of the game

- Learn to shoot accurately in a real game situation.

What to watch for: Tell the learners that no goalkeeper is allowed within 2 metres in front of the little goals.

Mystic knot

Cool down
Time: ~ 10 min

What you need: No equipment required.

How to play

The learners form teams of 10 and begin by holding hands with each other, sometimes crossing their arms. They don't give both hands to the same learner. When everyone is holding hands, the learners try to untangle the knot, but they are not allowed to release the hand of their partner.

Goal of the game

- Concentrate on the task.

What to watch for: The learners are not allowed to lose the hands of their partner. Encourage the learners not to abandon but to resolve the problem.

Page 2 of 2

Lesson grade 6 – Acrobatics & gymnastics (Sample)

Grade 6 | Lesson 4 | Time: 40 min

Acrobatics & gymnastics

Physical-education: Intermediate phase

Equipment

I move

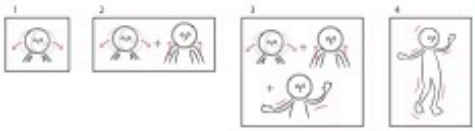
Introduction
Time: ~ 10 min

What you need: No equipment required.

How to play

Ask the learners to form a big circle. They all start singing and moving as follows:

- "I move I move I move, I move my head, I move I move I move, I move my head" (learners move their heads).
- "I move I move I move, I move my shoulder, I move I move I move, I move my shoulder" (learners move their heads & shoulders).
- "I move I move I move, I move each arm, (learners move their heads, shoulders and arms).
- Learners move their upper bodies, their hips, their feet, their legs, their entire bodies.



Goal of the game

- To be able to coordinate different body movements, only move body part that is requested.

What to watch for: Tell the learners to only move the body part that is requested.

Partner acrobatics: Repetition

Main part
Time: ~ 10 min

What you need: No equipment required.

How to play

Ask the learners to get into groups and let them practise the following pyramids.

Goal of the game

- Practise partner acrobatics.
- Stabilization, creativity, body tension, cooperation and trust.

What to watch for: Walk around and help the learners if they are not able to imitate the pictures.

Page 1 of 3

Grade 6 | Lesson 4 | Time: 40 min

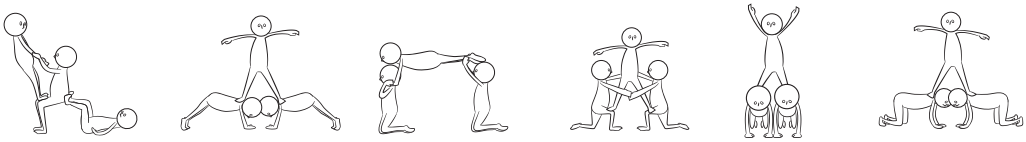
Pyramids of 3

Main part
Time: ~ 10 min

What you need: No equipment required.

How to play

Learners have learned how to keep body tension and how to cooperate. Now let them try by themselves. Make groups and let them try out the following pyramids without any more information. Walk around and help the learners to become creative and demonstrate different pyramids.



Goal of the game

- Practise pyramids.
- Stabilization, creativity, body tension, cooperation, trust.

What to watch for: Walk around and help the learners if they are not able to imitate the pictures.

Massage in a circle

Cool down
Time: ~ 5 min

What you need: No equipment required.

How to play

Ask the learners to sit in a circle and look at each other's backs. Ask the learners to massage the back in front of them until the teacher gives the signal to turn to the other side (after 2 minutes). Then massage the back in front of them.

Goal of the game

- Relax deeply while massaging someone else's back. Different formation: circle.

What to watch for: Learners should be aware of the other learners feelings. Don't massage too hard or too soft.

Explain exam exercise

Exam
Time: ~ 5 min

What you need: No equipment required.

How to explain

Learners get into groups of 6. Each group must show 5 different pyramids.

- 2 different partner acrobatics:
  Make groups of two. Each learner in the group performs at the same time. The teacher gets to see 3 pyramids.
- 2 different pyramids of 3:
  Make groups of 3. Each learner in the group performs at the same time. The teacher gets to see 2 pyramids.
- 1 pyramid of 6:
  The whole group performs at the same time. The teacher gets to see 1 pyramid.

Grade 6 | Lesson 4 | Time: 40 min

Explain exam exercise

Continued

Criteria: Fill out a profile for each learner, watch for precision and a quick build up. Every pyramid must be held for at least 5 seconds.

	Term 4
1. Concentration/endurance	
2. Learning progress	
3. Meet the objectives of activities	
4. Social interactive skills	
5. Commitment/attitude	
Total points (max 10)	
Final mark:	

Goal of the exam

- Precision.
- Body tension.
- Cooperation.

What to watch for: Before the test, let the learners practise once.

Assessment - Soccer (Sample)

Intermediate phase | Evaluation sheet | Physical-education

Assessment – Soccer "Passing & ball control"

Class: _____ Grade: _____ Date: _____

Frequency of participation: If a learner was in the physical education lesson and participated well, he receives a "**1**" behind his name. If a learner was in the physical education lesson but did not participate well, he receives only a "**0.5**" behind his name. In total, the learner can get 20 points for his participation.

Movement performance: The learner will be observed from the teacher for his passing and ball control skills. He can get 10 points for his movement performance in total.

TERM 1		Frequency of the participation in PE Lessons per term										Movement performance				
	Name	L1	L2	L3	L4	L5	L6	L7	L8	%	Points (max 20)	Ball control	Passing	Points (max 10)	Total points per term (max 30)	Final mark
1.																
2.																
3.																
4.																
5.																
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Level	Limited	Adequate	Proficient	Excellent
Frequency of participation during Physical Education periods:	0% = 0 points (did not participate at all) 1-5% = 1 point 6-10% = 2 points 11-15% = 3 points 16-20% = 4 points	21-25% = 5 points 26-30% = 6 points 31-35% = 7 points 36-40% = 8 points 41-45% = 9 points 46-50% = 10 points	51-55% = 11 points 56-60% = 12 points 61-65% = 13 points 66-70% = 14 points 71-75% = 15 points	76-80% = 16 points 81-85% = 17 points 86-90% = 18 points 91-95% = 19 points 96-100% = 20 points

Intermediate phase | Evaluation sheet | Physical-education

Assessment – Soccer "Passing & ball control"

Movement Performance – Passing & Ball control

Organisation: Two children are facing each other with about 7 meters distance in between. The two children have one ball which they are passing one another by foot. The exercise is well done when the player is able to give precise passes and is able to control the ball in a proper manner.

Skill level	1	2	3	4	5
Controlling	The child struggles mostly everytime and takes many attempts to control the ball once.	The child has a severe loss of control and takes a few attempts to control the ball.	The child struggles with his footwork but controls the ball.	The child controls the ball but has always to watch the ball and his feed.	The child shows good technique and controls the ball effortlessly with a cushioning effect.
Passing	The child struggles to pass the ball.	The child passes the ball but accuracy is poor.	The child can pass the ball in a general direction of the receiving player	The child passes the ball within a few feet of the receiving player.	The child passes the ball accurately to another player.

Name					
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Final evaluation table:

Description of competence	Points achieved	Percentage	Final mark
Outstanding achievement	**24-30**	**80-100**	**7**
Meritorious achievement	**21-23**	**70-79**	**6**
Substantial achievement	**18-20**	**60-69**	**5**
Adequate achievement	**15-17**	**50-59**	**4**
Moderate achievement	**12-14**	**40-49**	**3**
Elementary achievement	**9-11**	**30-39**	**2**
Not achieved	**0-8**	**0-29**	**1**

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Date: 30th April 2018 Signature:

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