

**PERCEPTIONS ON TEACHER PRODUCTIVITY: COMPARING
THE CASES OF SOUTH AFRICA AND SOUTH KOREA**

by

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DECLARATION

I hereby declare that this dissertation submitted in fulfilment of the degree

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is entirely my own work, except where references to other sources have been indicated, which I did under the guidance of my supervisors.

I further certify that this dissertation has not previously been presented for a degree at this or any other university or faculty.

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ABSTRACT

After more than 20 years of democracy in South Africa, the education system has certainly experienced a number of "growing pains". It is estimated that 99% of South African children today enter formal education, but the percentage of those who eventually complete Grade 12 on time, if at all, is much lower. It is commendable that access to basic education in South Africa has increased, but at the same time the quality of education in South Africa is still a major concern. In this dissertation I work from the premise that the productivity of teachers have a major influence on learner performance. I decided to consider the South Korean education system as basis for comparison. This system is reputed to be one of the most successful education systems in the world, experiencing many successes in global tests like PISA, PIRLS and TIMSS.

This study therefore explores the perceptions of teachers in South Africa and South Korea regarding teacher productivity. More specifically, the possible factors that relate to teacher productivity as well as methods for measuring teacher productivity were also investigated.

The recruitment and training process of an education system plays a vital role in managing the quality of its teachers. While South Korea generally has an oversupply of teachers (especially high school teachers), South Africa, on the other hand, has major teacher shortages. In order to raise the quality, identity and status of teachers, literature suggest that a multi-faceted entrance examination could be considered. This examination should be required at the end of an education student's studies, before receiving official teacher certification.

Based on the literature on teacher productivity, a questionnaire was constructed to measure the perceptions of South African and South Korean teachers (including principals) on teacher productivity. Schools in two districts (one from each country) were selected using a systematic sampling technique, and 30 schools from each district were drawn. From the Mangaung district in South Africa, 278 returned questionnaires were analysed, while from the Busan district in South Korea, only 40 questionnaires could be used.

With regards to the measurement of perceptions on teacher productivity, the results indicated that the younger teachers from South Africa and South Korea who participated in the study were more open to the possibility of regularly writing teacher competency tests. I

also found that the teachers from both samples were positive towards the prospect of principals measuring the productivity of teachers. In terms of value-added models that measure teacher productivity, I can conclude that further studies should explore the possibility to use the EMIS (Education Management Information System) to possibly track and link both teacher and learner performance in South Africa.

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CHAPTER 1: ORIENTATION

1.1 INTRODUCTION

"The quality of an education system cannot exceed the quality of its teachers"
(McKinsey and Company, 2007: 16).

Learners are always at the centre of any educational endeavour, but most educational role players, including parents and learners, would concur that the quality of teachers are vital to learner performance (Rockoff, 2004: 247). The performance of learners is the outcome or product of teaching. The inputs of teachers therefore have a direct influence on the performance of learners. These inputs are key in the results of learners.

In order to clarify the concept of inputs versus outputs, the term "productivity" is crucial. Productivity can generally be defined as achieving maximum output with the minimum use of inputs (Duyar, 2006: 1). The implication of productivity in an educational setting comes down to using as little resources as possible in order to achieve the best potential results.

At this stage the input from the South African government in terms of education expenditure, is enormous. The South African government allocated R¹265,7² billion from the 2015 budget to education. This amounts to 8% of the total budget for 2015 (RSA National Treasury, 2015: 2). One way of measuring the return on this huge investment is in terms of Grade 12 results, which is presented in the diagram below.

¹ Indicating South African Rand

² In South Africa, the comma is used to indicate the decimal point. In other parts of the world this would have been indicated as R265.7 billion.

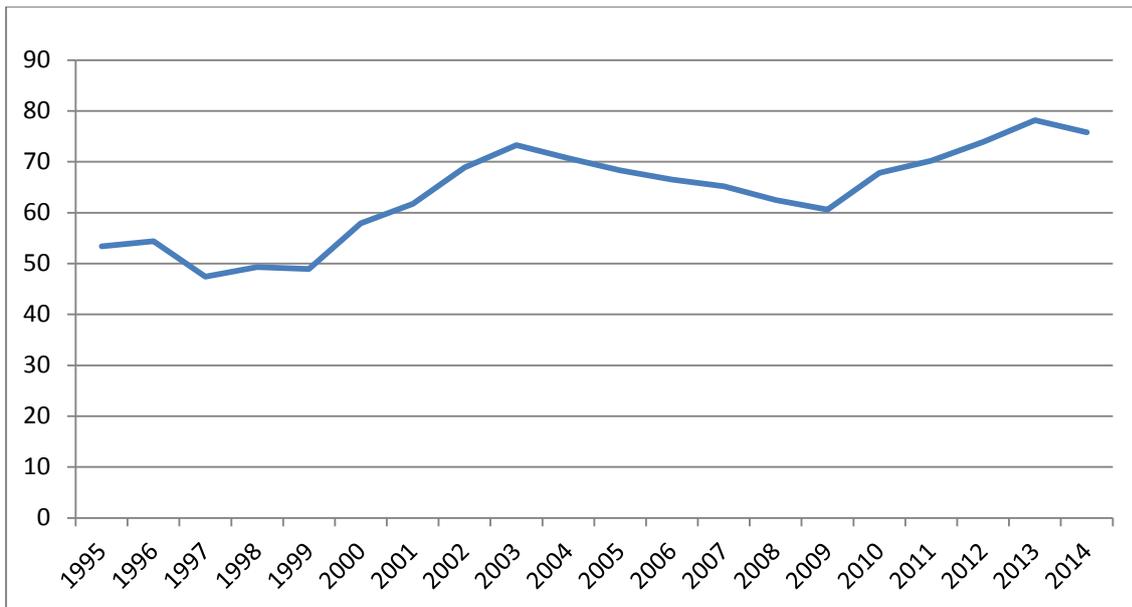


Figure 1: Gr.12 pass rate history for South African learners since 1995 (BusinessTech, 2015: 1)

The figure clearly shows a gradual increase in the Grade 12 pass rate of South African learners since 1995. This continuous upward curve can be misleading for many different reasons. Firstly, the pass requirements have changed dramatically over the past few decades. Grade 12 learners currently need to obtain 40% for three subjects (one of which should be Home Language) and 30% for three other subjects in order to pass Grade 12 (BusinessTech, 2015: 1; Department of Basic Education, 2009: 11). Secondly, the results of many subjects were also altered in some way (Bates, 2015: 1).

The pass requirements for Grade 12 learners might possibly be the most significant if taken into account that the Department of Education considers 30% as a pass in certain subjects. Learners then have to go to tertiary institutions where the pass rates for subjects are 50%.

In some of the critical subjects like Mathematics, South African learners find it even more difficult to perform satisfactorily. Table 1 reflects the performance of Grade 12 learners in Mathematics since 2011.

Table 1: Overall achievement in mathematics (Department of Basic Education, 2014: 109)

Year	Number of candidates who wrote	Number who achieved 30% and above	% who achieved 30% and above	Number who achieved 40% and above	% who achieved 40% and above
2011	224 635	104 033	46,3	61 592	30,1
2012	225 874	121 970	54,0	80 716	35,7
2013	241 509	142 666	59,1	97 790	40,5
2014	225 458	120 523	53,5	79 050	35,1

Table 1 indicates that only 53,5% of the learners who wrote the 2014 Mathematics exams achieved a score of above 30% (therefore passing Mathematics), while 3,2% achieved distinctions above 80% (Department of Basic Education, 2014: 109).

Even more disquieting than the Grade 12 results is the high dropout rate of learners in South Africa (eNCA, 2015: 1; Motsohi, 2014: 1; Rademeyer, 2014: 1). During a research conference Klinck (2013: 5) pointed out that about 60% of South African learners who start school do not complete their education. While 1 252 071 learners entered the South African public school system in 2003, only 688 660 (55%) of them wrote the Matric exam in 2014, of which only 150 752 (12%) gained admission to Bachelor studies. This equates to an effective pass rate of 41,7% for 2014, as opposed to the 75,8% that was announced publically (BusinessTech, 2015: 1). It is therefore doubtful whether South African learners are getting all the opportunities and support that they need to be successful.

This is, however, not a simple matter. Although the South African government is said to be focusing all their efforts towards creating a country with equal, accessible and quality education for all, in general the results are very poor (McCarthy & Bernstein, 2011: 8). It would be easy to blame it on teachers, learners, parents or even the government, yet blaming others will not solve the crisis the South African education system finds itself in. While there are numerous factors that could attest for this poor performance, I work from the premise that the productivity of teachers is one factor that has a profound influence on the abovementioned results.

With globalisation changing society as we know it, it is up to teachers to take up the challenges of staying abreast with new trends. This suggests that teachers cannot keep doing the same things they did 20, or even five years ago. For teachers to stay successful in the 21st century takes a lot of hard work and dedication. Teachers should accept the responsibility to adapt and grow to give their learners a chance to survive in an ever changing global economy (Jones, 2012: 1). Only then will their learners have the necessary skills they need to become thriving citizens.

On the other side of the world, South Korean learners are known for their exceptional performance on a global scale (e.g. PISA Tests done by OECD in 2000, 2003, 2006, 2009, 2012). Table 2 summarises the performance of learners in South Korea with regards to the PISA tests.

Table 2: PISA mean score and ranking of learners in South Korea (OECD, 2000-2012)

YEAR	CONTENTS OF PISA TEST		
	READING	SCIENCE	MATHEMATICS
2000	525 (6th)	552 (1st)	547 (2nd)
2003	534 (2nd)	538 (4th)	542 (3rd)
2006	556 (1st)	522 (11th)	547 (4th)
2009	539 (2nd)	546 (6th)	538 (4th)
2012	536 (5th)	538 (7th)	554 (5th)

One can rightly wonder what makes the Korean education system so successful. For a country with an estimated adult literacy rate of 22% in 1945 (after 35 years of Japanese colonisation), the literacy rate shot up to 87,6% in the 1970s. By the late 1980s the literacy rate was up to an impressive 93% (Savada & Shaw, 1990: 115), and today this number has grown to 97,9% (CIA World Factbook, 2013: 1). Furthermore, 93% of Korean learners are graduating from high school on time (Lynch, 2008: 1).

1.2 THE CONTEXT OF EDUCATION IN SOUTH AFRICA AND SOUTH KOREA

The comparative nature of this study necessitated some exploration of the background of the education systems of each country. A brief overview of the education systems of South Africa and South Korea is discussed in the next section.

1.2.1 SOUTH AFRICA

South Africa is a large country of 1 219 090km² at the southern tip of Africa. It has a population of 53,16 million (World Bank, 2014: online). The population density is 44 people per km² (World Bank, 2014: online). What makes South Africa unique is its rich cultural diversity.

South Africa has a high unemployment rate of 25,1% (World Bank, 2014: online), which causes a large proportion of the population to live in poverty. The average life expectancy of a South African at birth is 57 years (World Bank, 2013: online).

The South African education system has gone through numerous cycles of transformation over the last century. From having only 2,1% of the entire African school-aged population in school in 1905 (Troup in Blumfield, 2008: 2) this has gone up to the current reality where about 99% of children enter formal schooling (Spaull, 2012: 1).

The fact that South Africa has 11 official languages complicates its education policy and provision. The issue of language in schools has received attention since the very beginning of formal education. In 1921 the former Orange Free State Province³ recognised the importance of mother tongue education, so it became “...*compulsory for the mother tongue to be the medium of instruction in all standards of the primary school, and stipulates that the second language is to be offered as a subject from the child’s second school year – at first informally, but from standard 2 onwards more formally*” (Venter & Verster in Blumfield, 2008: 5).

During Apartheid (1948 – 1994) each racial group had its own Education Department. During this time education was politically driven and unfair, *inter alia* because resources were distributed unevenly to different ethnic groups, privileging White people. These separate Departments finally ceased to exist in 1995 (Donn in Blumfield, 2008: 18). Spaull (2012: 1) mentions that “*the post-apartheid government inherited a divided and mostly dysfunctional education system.*” He did however acknowledge that the current South African government has increased access to education.

³ Now known as the Free State Province

The modern education system in South Africa is divided into 4 different phases. The Foundation Phase is from Grades R – 3, while the Intermediate Phase covers Grades 4 – 6. The next phase is the Senior Phase (Grade 7 – 9) and finally there is the FET (Further Education and Training) Phase, which covers Grade 10 – 12 (Department of Basic Education, 2015). Furthermore, South Africa has two types of specialised schools, namely technical and agricultural schools (CDE, 2012: 2).

Although it seems as if the state of education in South Africa is improving, there is still a lot of room for improvement in order to raise the general educational standards of schools in South Africa.

1.2.2 SOUTH KOREA

South Korea is a small country of 100 266km² in south eastern Asia. It has a population of 50,42 million (World Bank, 2014: online). The population density is quite high at 517 people per km² (World Bank, 2014: online). South Korea only has one official language, Hangul (Korean). It has a low unemployment rate of 3,5%, while the average life expectancy of a South Korean at birth is 82 years (World Bank, 2014: online).

The South Korean education system is known for its “...*rapid expansion in all levels of schooling; efficiency in policy implementation; high equity in Education and a zeal for Education*” (Lee, 2008: 48).

The system was modernised after the 35 year Japanese colonisation came to an end in 1945 (Lee, 2008: 35). Since then, South Korea has used a 6-3-3-4 education system. This includes 6 years for Elementary School, 3 years for Middle School, 3 years for High School and 4 years for a college or university degree (Lee, 2008: 35). The system includes nine years of compulsory free education (Jones, 2013: 6).

There are numerous types of schools that learners can attend from Middle School level. These include schools attached to industrial firms, air and correspondence high schools, trade high schools, civic high schools and special classes for gifted learners (Lee, 2008: 38).

Although the South Korean education system has been consistently performing exceptionally well in global tests, there has also been widespread criticism. This is due to the extreme competition for college entrance, low confidence in school education, and high

private expenditure for tutoring at after-school classes commonly known as *hagwons* (Jones, 2013: 18). The continued pressures of parents and society in general drives many learners in South Korea to suicide (The Economist, 2011: 1). The passion that the South Korean society share for Education is commendable, but it seems as if their successes come at a price.

1.3 RATIONALE AND STATEMENT OF PURPOSE

I am very interested in the productivity of teachers because I have experienced different educational situations in South Africa and South Korea. At each school where I worked, every teacher I came across was different and I learned a lot by observing the behaviour of the individuals around me. Just by observing a teacher one can see which teachers have a positive impact on learners. This in turn could lead to better discipline in class and co-operation from learners. Some teachers just seem to be more productive than others.

The reason why I want to compare the perceptions on productivity of South African teachers to the teachers in South Korea is because I taught English in South Korea in 2010 and 2011. It was intriguing to see how the South Korean education system functioned. This was a complete eye-opener to me, as I have been a teacher in South Africa since 2007. The teachers in South Korea seemed to be very productive and this might be due to the South Korean educational policy. For example, Korean education students who graduate from higher education institutions have to pass an employment examination before being employed as teachers (Kim & Han, 2002: 40). Secondary school teachers are generally abundant, so only 20% of pre-service teachers become school teachers (Park, 2010: 13). Secondly, teachers are rotated between schools within their districts every five years (Park, 2010: 7). School principals' terms of office in South Korea is four years, which can only be served a maximum of two consecutive times (Kim, Kim, Kim & Kim, 2006: 15).

I realise that my own experiences influenced the assumptions I made. I therefore decided to engage in a formal study to gain insight regarding the perceptions of teachers in terms of teacher productivity. This was accomplished through comparing the cases of South Africa and South Korea. This research might lead to a better understanding of what the characteristics of a productive teacher are, ways to improve teacher productivity, possibly implementing guidelines to measure teacher productivity and perhaps developing new

educational policies for the identification and rewarding of teachers who are exceptionally productive.

1.4 PROBLEM STATEMENT AND RESEARCH QUESTIONS

The South African education system is under immense pressure from the government and the general public. In the light of recent Grade 12 results (as indicated in section 1.1) it is clear that the Matric pass rate has been improving, but at a cost. Some journalists and educational specialists surmise that this includes lowering the standards of exams, high drop-out rates, reducing the pass requirements and altering the results in some way (Bates, 2015: 1; Rademeyer, 2014: 1).

The general public is seemingly not always getting a true reflection of the state of affairs in the South African education system. The key to improving the quality of education in South Africa is the quality of the teachers. Being a successful teacher in South Africa requires motivation, dedication and perseverance. A South African teacher daily has to overcome an abundance of challenges. Firstly, many South African teachers have to teach without sufficient basic teaching resources like textbooks or computers. Furthermore, some teaching facilities in South African schools are not maintained. Many do not even have clean running water, electricity, sanitation or safe classrooms. This can lead to an unsafe working and learning environment (John, 2013: 1).

South African teachers also have to cope with overcrowding in schools which causes enormous disciplinary and logistical problems. In some cases the learner-teacher ratio is as high as 50 learners per teacher, while teaching has to take place in classrooms meant for 35 learners. Learners often have to share desks and chairs, while other learners have to stand during lessons (John, 2013: 1).

Support from the Department of Education is not always sufficient (Mestry, Hendricks & Bisschoff, 2009: 482), while in-service training for teachers are not necessarily regular or constructive. Opportunities for professional development are often not advertised in time or effectively managed by the Department of Education (Mestry *et al.* 2009: 477).

When taking into account all of these factors that make it difficult for South African teachers to function effectively, it is increasingly difficult for teachers to stay productive. In order to gain an understanding of the productivity of South African teachers, in view of my own

positive experiences in South Korea, I therefore pose the following main research question: **How do the perceptions of teachers in South Africa and South Korea compare, regarding teacher productivity?**

In order to respond to this question, I have scaffolded my study as follows by posing a number of secondary research questions:

1. What is teacher productivity?
2. What are the perceptions of some teachers (including principals) in South Africa and South Korea regarding teacher productivity?
3. What can be learned regarding teacher productivity by a comparison of the perceptions in South Africa and South Korea?

1.5 RESEARCH AIMS AND OBJECTIVES

The broad aim of this research is to compare perceptions on the productivity of teachers in South Africa and South Korea. This could give educational role players including teachers, principals and educational specialists a better sense of what possibly makes teachers productive. While I do not want to suggest that South Korea has a superior education system, it has experienced many successes over the past few decades, so educational policy makers in South Africa could gain precious insights from this research. This in turn could guide educational policy makers in proposing ways in which teachers can continuously stay as productive as possible.

In order to meet these aims of the study, it is necessary to explore the following key factors regarding productivity:

1. Conceptualising of the term productivity.
2. Examining and comparing the perceptions of teachers (including principals) in South Africa with those in South Korea regarding the productivity of teachers.
3. Interpreting the results in order to assess what can be discovered regarding the productivity of teachers.

1.6 RESEARCH DESIGN

Before a researcher can decide which research design is suitable for his/her study, it is important to first evaluate the research questions. As this is a comparative study, where the

perceptions of teachers (including principals) from two different countries are considered and compared based on numerical data, the research design will be quantitative.

1.6.1 RESEARCH PARADIGM

The study was done from a pragmatic point of view. Pragmatism has served as a very useful theoretical framework for research studies since the early 20th century (Kloppenber, 2004: 202). Pragmatism, according to Morgan (in Mertens, 2014: 36), "*...emphasises actual behaviour, the beliefs that stand behind those behaviours and the consequences that are likely to follow from different behaviours.*" In line with Mertens' definition of pragmatism, I argue that the behaviour of each teacher is driven by his or her beliefs and principles. This in turn has consequences that follow from their behaviour. Morgan (2007: 67) goes further by summarising the key issues of pragmatism as how much shared understanding can be accomplished by people and what shared lines of behaviour are possible from that mutual understanding.

There are various advantages of adopting a pragmatic approach to research (Onwuegbuzie & Leech, 2005: 383-384), such as researchers becoming more flexible in their investigative techniques. Pragmatism is also of importance in connecting science to common sense and to refined methods of inquiry (Feinberg, 2012: 234). In this study I used quantitative methods, not in a positivist manner to find absolute truths, but rather in a common sense manner to shed some light on a practical problem in our education system.

1.6.2 RESEARCH METHODS

The research methods that I used in this study were a comprehensive literature review, as well as a survey in the two countries.

1.6.2.1 LITERATURE REVIEW

A literature review served as a key in gaining insights regarding the productivity of teachers in South Africa and in South Korea. An effective literature review will provide a solid foundation in advancing knowledge (Webster & Watson, 2002: xiii) and allowing new ideas to build on previous studies (Baumeister, 2013: 119).

Numerous academically approved databases were used to identify primary sources relating to this study. These included but were not limited to EBSCOhost (including ERIC), JSTOR,

Mendeley and Google Scholar. The importance of unconventional methods for identifying relevant sources should not be underestimated, as Greenhalgh and Peacock (2005: 1065) states: "*Informal approaches such as browsing, "asking around," and being alert to serendipitous discovery can substantially increase the yield and efficiency of search efforts.*" It would therefore be necessary to discuss the topic of productivity of teachers with as many educational stakeholders as possible. This would give me an idea of what is known about this topic in practice.

The proposed literature review also served as an invaluable tool in assisting and guiding the development of the questionnaires that were used in this research study.

1.6.2.2 SAMPLE SELECTION

The participants of this study would ideally be a teacher (or principal) currently employed in either the Mangaung (South Africa) or Busan (South Korea) areas. I chose the areas that I wanted to include for this study, so in terms of the selection of the research areas (Mangaung and Busan), it was done conveniently (cf. Maree & Pietersen, 2007: 177).

However, once the general population of these strata (in terms of schools) were determined, the systematic sampling method (cf. Maree & Pietersen, 2007: 174) was utilised where I made use of an official list of schools in the Mangaung and Busan areas. Every 9th school on the Mangaung list was selected, whereas every 22nd school on the Busan list was selected to participate in the study. The schools in the Mangaung area were visited personally (as far as possible), whereas the schools in the Busan district were invited to participate via electronic mail.

I intended to involve 30 schools from each of the two districts to participate in the study. Each school received the same number of questionnaires. The 60 principals from these selected schools were also requested to complete the same questionnaire.

I aspired to have a sample from both districts that was large enough to ensure that the validity and reliability of the study was in accordance with ethical research practice. The objective was to get 300 questionnaires from teachers and 30 questionnaires from principals in each district.

1.6.2.3 DATA COLLECTION

a) Instruments

The instrument used to collect the data was a questionnaire (available in English and Korean). As I was unable to find a standardised survey questionnaire that related to teacher productivity, I developed a new questionnaire. This questionnaire was utilised in order to collect relevant data regarding the perceptions of teacher productivity amongst teachers (and principals) in Busan and Mangaung.

The participants from Mangaung had a choice of completing a paper or online version of the survey (via surveymonkey.com), while the participants from the Busan sample could only complete the online version of the survey (via surveymonkey.com).

The purpose of a questionnaire, according to Artino, La Rochelle, Dezee & Gehlbach (2014: 464) is “... to develop a set of items that every participant will interpret the same way, respond to accurately and be willing and motivated to answer.”

One questionnaire was designed which teachers (including principals) could complete. The formulation of the set of questions was based on the literature review. To ensure the reliability and validity of the responses, all the questions and statements in the survey were formulated to reassure participants that their own productivity was not going to be scrutinised. The statements and questions were aimed at the productivity of teachers in general.

b) Data analysis and interpretation

The data of each country was captured separately on an Excel sheet, while each of the responses were coded according to the Likert scales in the survey questionnaire.

All questionnaires were processed and summarised using descriptive and differential statistics. Each particular question in the questionnaire was analysed as ordinal data. This was summarised using bar charts. As the questions were the same for South African and South Korean participants, it was possible to use the *t-test* and the one-way ANOVA test to compare the responses between groups, as well as within groups.

1.7 ETHICAL CONSIDERATIONS

When conducting any research the researcher should be guided by ethical research practices. As this study made use of human participants, I aimed to abide by the criteria for ethical research.

1.7.1 RESPONSIBILITY OF RESEARCHERS

Due to the nature of this study, I had to be very sensitive when I approached and invited schools from Busan and Mangaung to participate. I had to ensure that I had permission from all the relevant role players before I visited or contacted the specific schools.

Many respondents might have felt obliged to be biased towards the answering of questions posed in the questionnaires. This might have been to protect themselves or their schools.

Most teachers are under immense academic and administrative pressure at school, so it was critical not to interfere with any classes. Additionally, I had to give each school enough time to administer the survey questionnaires to make the process as convenient for them as possible.

1.7.2 INFORMED CONSENT

A letter of consent was included with the questionnaires. *“Informed consent implies two related activities: participants need first to comprehend and second to agree voluntarily to the nature of their research and their role within it”* (Israel & Hay, 2006: 61).

I ensured that each participant understood clearly what the study was about, what was required from them, what the value of their contributions was and that they should recognise that their participation was voluntary.

Informed consent is vital in conducting any research study, as all participants have the right to freedom of choice in this regard (Cohen, Manion & Morrison, 2007: 52).

1.7.3 ANONYMITY

“The essence of anonymity is that information provided by participants should in no way reveal their identity” (Cohen, Manion & Morrison, 2007: 64).

If a researcher wants to guarantee authentic and honest responses to a questionnaire, emphasis must be placed on complete anonymity and confidentiality. In order to guarantee the anonymity of all respondents, a sealed ballot box was provided to each school who received paper copies of the questionnaire. Respondents were required to fold the paper in half, staple it and place it in the sealed ballot box. They were also reminded not to write their names or the names of their schools on the questionnaire.

The online survey provided even more anonymity as it was not possible to identify the names of the participants, their schools or the number of participants there were per school.

1.7.4 PROTECTION FROM HARM

When human participants are used for research purposes, the top priority for researchers is to keep participants safe at all times. This includes protecting participants from embarrassment, and not sharing sensitive information or disclosing personal details (Cohen, Manion & Morrison, 2007: 333).

Sensitive questions that could possibly embarrass participants were kept to a minimum, and no participant was required to disclose any personal information such as contact details or addresses. The items in the survey were specifically generalised so that the participants did not feel that their opinions had to do with their personal situation. This was done to ensure even more privacy. No one except the researcher had access to any of the hard copy responses.

1.8 DEMARCATION OF THE STUDY

To demarcate the study was very valuable in understanding what the background and realities were of each respondent who participated in this study. I therefore explored the scientific and geographical demarcation of the study, as well as mentioning the specific contexts of each education system.

1.8.1 SCIENTIFIC DEMARCATION

Considering that the broad aim of this research was to compare perceptions on the productivity of teachers in South Africa and South Korea (section 1.4), this project fell in the realm of Comparative Education. One of the main aims of Comparative Education is to

compare different education systems within their societal contexts (Wolhuter; Popov; Ermenc; Manzon & Leutwyler, 2013: 372). In other words, when comparing the education system of one country with that of another, a researcher must always consider the context of the societies of those countries. This in turn allows for a better understanding of the specific education system.

In addition, Wolhuter (in Wolhuter *et al.*, 2013: 372) argues that *“the significance of Comparative Education lies on at least five planes: description, understanding, evaluation, application, and with respect to furthering the philanthropic ideal.”* According to Wolhuter, (2007: 17), Comparative Education could be useful in suggesting solutions for contemporary educational problems and issues. It is therefore clear that Comparative Education provides the theoretical lens through which the education system of a country can be looked at, so that certain lessons could be learned from their successes and failures.

Furthermore, Broadfoot (in Wolhuter *et al.*, 2013: 378) commented that the field of Comparative Education has become a vital mechanism for policy makers to judge the health of an education system and for learning about ways to improve it. She also states that *“...the commitment to ‘learning from comparing’ has arguably never been stronger.”*

One danger of Comparative Education is the temptation to adopt the education system of one country and implementing it in another country. This could be considered dangerous because the success of such an endeavour can never be guaranteed (Wolhuter, 2007: 17). This is due to the fact that the educational situation in each country is unique.

Drawing from the above, my intention with this study was to look at teacher productivity, and to compare the perceptions on teacher productivity of teachers (and principals) of South Korea and South Africa. This gave me insight into the health of the education systems in these two countries with regard to teacher productivity, and to suggest some lessons.

1.8.2 GEOGRAPHICAL DEMARCATION

The study was done in two different countries, namely South Africa and South Korea. Information about the geography of these two countries were vital, as this clarified the background of the participants in this study.

1.8.2.1 SOUTH AFRICA

My study took place in central South Africa, in the Free State province. Because I live in Bloemfontein, the capital city of the Free State, I decided to narrow my research area to the Mangaung Local Municipality area. Mangaung has a population of 750 000. The major cities and towns in Mangaung include Bloemfontein, Botshabelo, Mangaung and Thaba Nchu.



Figure 2: Map of South Africa (www.nationsonline.org)



Figure 3: Free State Municipality Map (www.mapsofworld.com)

1.8.2.2 SOUTH KOREA

The area I selected for the research in South Korea was Busan. It is the second largest city in South Korea, with a population of 3,56 million (Busan Metropolitan City, 2013: online). It is located towards the south eastern coast of South Korea. I chose Busan because I taught there in 2010 and 2011 and have a rudimentary knowledge about the area. It also afforded me an erstwhile Korean colleague who was willing to assist me in my research.



Figure 4: Map of South Korea (www.mapsofworld.com)



Figure 5: Busan Province Map (www.mapsofworld.com)

1.9 RESEARCH OUTLINE

The research report is structured as follows:

In Chapter 1 I introduce the term productivity, which serves as the basis for the problem statement. Next, the primary and secondary research questions are discussed, followed by an explanation of the research design of this study. Then I discuss the demarcation of the study. I also include the ethical considerations that I had to abide by.

Chapter 2 is a literature review in order to explore and conceptualise teacher productivity. The different factors that relate to teacher productivity, as well as the possible methods of measuring teacher productivity, are included in the literature review.

In chapter 3 the research methodology, design and sampling techniques are examined. A detailed discussion of the survey questionnaire is included, while the data analysis process is explained.

Chapter 4 summarises the research findings to get a clearer picture of the realities of teacher productivity in South Africa and South Korea. In this chapter, the results from the different groups (and sub-groups) are analysed and interpreted.

In chapter 5 I propose conclusions, suggestions and recommendations based on my findings. I also describe the limitations of this study.

1.10 SUMMARY

This chapter gave a detailed outline of the proposed study. It introduced the research topic and included background information about the research problem, as well as providing an explanation of my interest in this topic.

In order to develop viable and reliable questionnaires, a thorough review of the literature was required. This allowed me to explore the different aspects of teacher productivity.

The next chapter is an analysis of the body of research pertaining to the productivity of teachers.

CHAPTER 2: TEACHER PRODUCTIVITY

2.1 INTRODUCTION

In the previous chapter I pointed out that the South African education system has reached a very important point in terms of quality assurance. There is a perception that if the quality of education continues on its current path, where the value of a matric certificate is becoming increasingly questionable, there would be little hope left for the future of young South Africans. The main problem, it is argued by many, is that learners are getting used to sub-standard pass requirements (as low as 30% in many subjects) in school, so when they get to university there is an enormous drop-out rate of first-year students, as most modules have a 50% pass requirement. It is therefore important to raise the quality and standard of basic education.

One way to address the quality of education is to have better and more productive teachers. Unfortunately, the reality is that the quality of teachers in large parts of South Africa seems questionable. Many residents of poor communities have no choice but to attend schools characterised by a lack of discipline, poor management and a shortage of productive teachers (Van der Berg; Burger; Burger; De Vos; Du Rand; Gustafsson; Moses; Shepherd; Spaul; Taylor; Van Broekhuizen & Von Fintel, 2011: 5), although one should not think in terms of stereotypes and make assumptions. Very little scientific evidence exist, particularly with regard to teacher productivity, and with this study I endeavoured to contribute to this gap in the knowledge. I specifically aim to compare perceptions on the productivity of teachers in South Africa and South Korea

The influence of teachers on the performance of learners is mostly underestimated. In a research report done by McKinsey and Company (2007: 13), the effects of teachers on the performance of learners were significant, as can be seen in the diagram that follows.

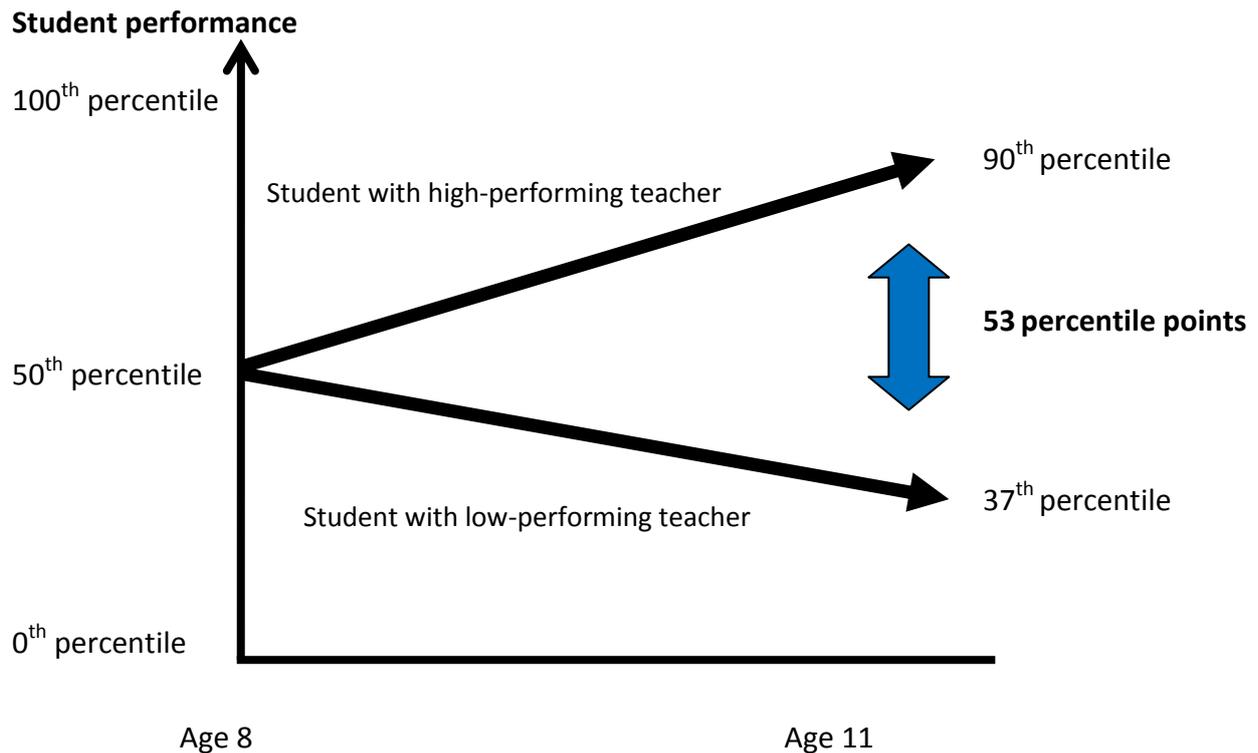


Figure 6: The effect of teacher quality on the performance of learners (McKinsey and Company, 2007: 13)

The graph above is based on the analysis of test data from research done by McKinsey and Company in the U.S.A. Teacher quality was found to be the most important variable regarding student performance. This study concluded that when two average learners (both at the 50th percentile) have different teachers for three years (one learner has a high-performing teacher, while the other has a low-performing teacher), the difference in their performance could be as much as 53 percentile points.

Furthermore, it is important to note that this deviation was measured at ages 8 to 11. This stage of a learner's education could be the most vital, as this is where learners are supposed to learn to read, write and count. The acquisition of these basic skills could determine the future success of a learner.

In this chapter the body of research regarding the factors relating to the productivity of teachers will be elucidated and described. Secondly, the different methodologies to measure the productivity of teachers will be investigated. Lastly, a summary will be made of the conclusions from previous literature.

2.2 FACTORS RELATING TO THE PRODUCTIVITY OF TEACHERS

It was mentioned in the previous section that teacher quality has a significant influence on learner performance. Harris and Sass (2009: 1) point out that “[r]elatively little is known, however, about what makes some teachers more productive than others in promoting student achievement”. It is very difficult to say why some teachers get better results than others, especially when there is a level playing field (see figure 7). When teachers have the same type of children in class, the same resources and the same amount of experience, one teacher might get desirable results, while another might not.

Due to this phenomenon, numerous researchers have searched for possible explanations to explain why some teachers are more productive than others. Most researchers agree that teachers are the most important asset in improving the results of learners, and that the levels of productivity of teachers differ substantially (Dee & Wyckoff, 2014: 26; also refer to Haberman, 1995: 777; Hanushek & Rivkin, 2012: 132; Leigh, 2012: 42; Loeb, Kalogrides & Beteille, 2012: 269; Wayne & Youngs, 2003: 89).

There are several factors that influence the productivity of teachers, which will be discussed in the next section.

2.2.1 DEFINING PRODUCTIVITY

The term productivity has applications for almost every field of interest such as economics, construction, agriculture and education. Although the term is widely used, it is generally confused and thought to be interchangeable with other terms such as effectiveness, efficiency, performance and profitability (Tangen, 2005: 34). Bernolak (1997: 204) describes productivity as how much and how well a person can produce from the resources used. On the other hand Pekuri; Haapasalo & Herralala (2011: 39) describe productivity as “...a relationship between output produced by a system and quantities of input factors utilized by the system to produce that output.” In addition, Bouckaert (1990: 53) includes concepts such as economy, efficiency and effectiveness in his definition of productivity.

Based on the above definitions it is clear that productivity can be described as a process where a result (or product) is produced by using a certain amount of resources. In the case of education this could refer to how much resources a teacher, school, system or country use to achieve desirable results. It is understandable that some teachers might feel that the

use of expensive technological aids including Smart Boards, data projectors or tablets might increase their productivity. Nevertheless, some teachers are getting excellent results even when there are little resources available to them. To use a lack of resources as an excuse for possible low productivity does not hold water. Ebadollah (2011: 773) debunks this as he demarcates school productivity under various dimensions, as indicated in the table below.

Table 3: Integrated model of school productivity (Ebadollah, 2011: 773)

Productivity dimensions	Multiple indicators
Adaption	Adaptability
	Innovation
	Growth
	Development
Goal attainment	Achievement
	Quality
	Resource acquisition
	Efficiency
Integration	Satisfaction
	Climate
	Communication
	Conflict
Latency	Loyalty
	Central life interest
	Motivation
	Identity

In short, the multiple productivity dimensions as proposed by Ebadollah (2011: 773) refer to the need for schools (and therefore also teachers) to adapt in order to attain their goals, while integrating external factors to build a sense of identity.

While it is crucial to gain a deeper understanding of the concept of productivity, the factors that influence teacher productivity are just as important. The first of these factors is the quality of teachers, which will be examined in the following section.

2.2.2 QUALITY OF TEACHERS

The quality of teachers is a crucial factor to ensure high learner performance (Gerritsin *et al.* 2014: 2; Hein & Allen, 2013: 4; Leigh, 2012: 41). However, demarcating specific characteristics to predict teacher quality is very difficult (Hein & Allen, 2013: 5). This has made it very complex for researchers to find consensus about teacher quality.

As mentioned earlier (section 2.2), there is a substantial difference in the quality of teachers. Not only is the quality of teachers clearly visible to the principal (Jacob & Lefgren, 2006: 60) and other teachers of a school, but parents also prefer certain teachers above others (Rivkin, Hanushek & Kain, 2005: 419). In many cases worldwide, a family will even move to another area, if possible, in search of the best possible education for their children (West & Chingos, 2009: 8). With this in mind, parents are still not guaranteed that their children will have a productive teacher, even in the perceived “best schools” (Rivkin *et al.*, 2005: 419).

The research done by Rivkin *et al.* (2005: 450) suggest that policymakers are facing a conundrum. If policymakers decide to change the basic requirements of becoming a teacher, there might be fewer qualified teachers. There is already a shortage of teachers in many countries, so making it more difficult to become a teacher is not necessarily a viable option in order to raise the quality of teachers.

The aptitude of teachers could also raise teacher quality, as discussed in the next section.

2.2.3 TEACHER APTITUDE

Taylor (in Grobbelaar, 2011: 1) posits that “teacher[s] can’t teach what they don’t know”. Nobody can expect a teacher to teach content which he or she does not understand. The problem is that there is evidence of a significant decline in teacher aptitude, as some American studies have found (Hoxby & Leigh, 2004: 1; Leigh, 2012: 41). To address this, most states in the USA implemented a standardised test before 2000, in which prospective teachers needed to achieve a set minimum Grade (Goldhaber & Brewer, 2000: 130).

Some studies have shown that a teacher’s level of literacy in particular has the most significant impact on learner results (McKinsey and Company, 2007: 16). In the light of this, the current Minister of Basic Education has proposed that South African teachers write the

same exams as their pupils. It might sound absurd, but researchers have tested teachers on basic subject content and the results were not good. This was publically announced in the media, for instance, as reported by Pakhati and Grobbelaar (*Teachers to write pupils' exam* (*BusinessDay* 17 March 2015: online); *Teachers fail primary school simple fraction test* (*TimesLive* 10 October 2011: online)).

The veracity is that there are teachers who don't do well in the exams their students are supposed to write. This is one of the main concerns in the South African education system.

Nevertheless, these "teacher tests" could serve as an excellent indicator of teacher aptitude (Phakathi, 2015: 1). Teachers who underperform in these tests could be supported, trained and mentored by the Department of Education. Only then will these teachers be more productive in the classroom.

This enhanced productivity could also lead to more effective teachers, as indicated below.

2.2.4 TEACHER EFFECTIVENESS

McBer (2000: 6) proposes the following model to explain teacher effectiveness:

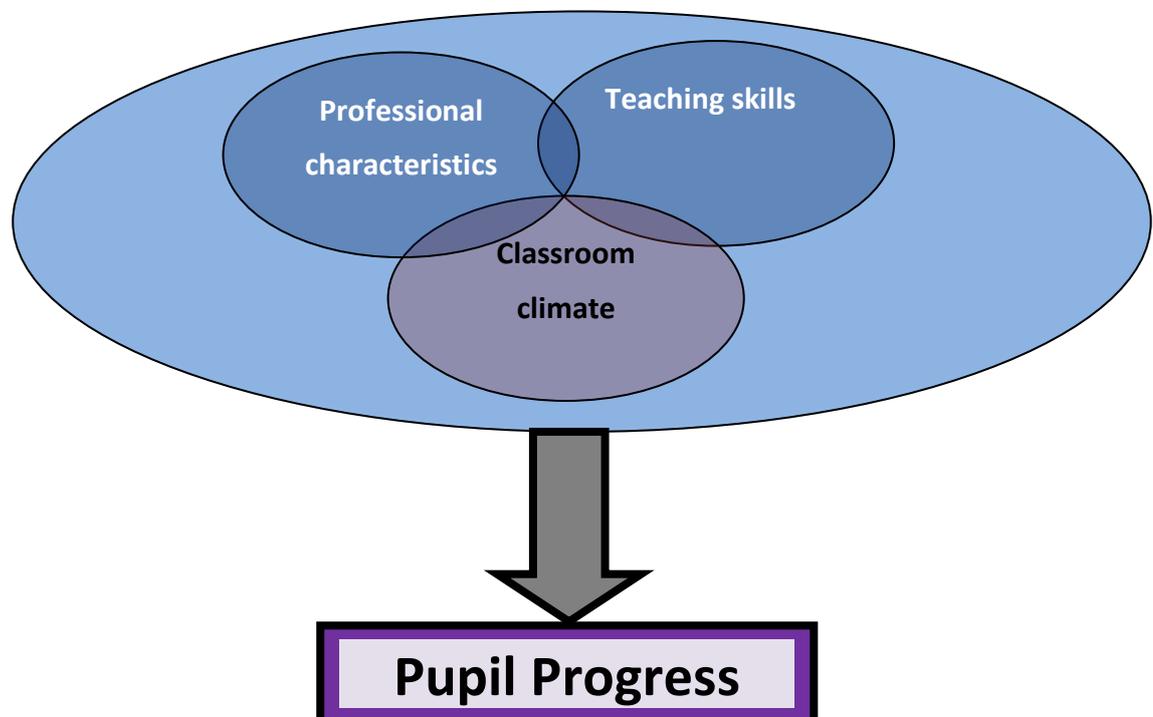


Figure 7: Teacher effectiveness (McBer, 2000: 6).

The model as indicated above, explains teacher effectiveness as three interconnected dimensions. Firstly, the professional characteristics of teachers can be viewed as the daily behaviour of teachers. This could include being prepared, prompt and neatly dressed, and communicating clearly with learners, colleagues and parents.

Secondly, teaching skills refer to the way the subject knowledge of the teacher is conveyed to the learners. Effective teachers also know how to adapt to their specific situation, especially when something does not go as planned. These teachers would then make use of introspection and critical reflection in order to “make it work” next time around.

Lastly, the classroom climate will ultimately determine whether or not the learners are focused and motivated to learn. A teacher who is too strict will end up with learners who are too scared to ask or say anything. On the contrary, a teacher who is too lenient will struggle to keep the attention of their learners.

Extensive research done by Hanushek and Rivkin has indicated that there is a significant difference in teacher effectiveness, which can more readily be exposed within schools rather than between schools (Hanushek & Rivkin, 2012: 131). This means that it is easier to differentiate between the effectiveness of teachers from the same schools as opposed to teachers from different schools. Kane, Rockoff & Staiger (2006: 20) also recommend that the best way to identify differences in the effectiveness of teachers is to evaluate the results of learners taught by different types of teachers within the same school. It would therefore be clear to any educational stakeholder which teachers are effective and which are not. To predict teacher effectiveness is however very difficult. The consensus is usually that teachers who are well qualified or have many years of experience are effective, although these factors do not guarantee teacher effectiveness (Brown, Morehead & Smith, 2008: 169; Hanushek & Rivkin, 2012: 132; Kane *et al.* 2006: 6; Wayne & Youngs, 2003: 108).

This is contradictory to general education policy, as it is widely recognised that teachers who have many years of experience are effective. The conflicting theory in this case is that when teachers stay in the same teaching position, at the same school, for an extended period of time, they often get into a “comfort zone”. This could even make them less effective than an inexperienced teacher.

While it is suggested that some teachers become less productive the longer they stay at the same school, teacher experience still has a role to play when it comes to teacher productivity. This is discussed in the following section.

2.2.5 TEACHER EXPERIENCE

As mentioned previously, for many decades teacher experience has been believed to be a key determinant of learner performance (Gerritsin *et al.* 2014: 3, Rockoff, Jacob, Kane & Staiger, 2008: 1). In the general education setting, it makes sense that experienced teachers are respected more, they are often used for training and mentoring education students and their opinion is valued at schools. The impact of experienced teachers on learner performance is therefore thought to be substantial.

There is however a significant number of scholars opposed to the theory that experience implies higher productivity (Hanushek & Rivkin, 2006: 1060; Hartlep & McCubbins, 2013: 3 and Rivkin *et al.* 2005: 419;).

There is some common ground where researchers mostly agree that teacher experience has the most significant effect on learner performance during the initial teaching years. In other words, the experience of teachers has the biggest effect when teachers start their career. As a result, the impact of new teachers on the results of learners will be considerably higher and usually negative (Rivkin *et al.* 2005: 447). After that, teacher experience has less of an impact on learner performance.

Teacher experience is also thought to have a more considerable impact on the earlier Grades (Gerritsin *et al.* 2014: 5). This finding has important policy implications, as it implies that the most experienced teachers teaching Grade R to Grade 3 should be managed carefully.

Considering that researchers propose that teacher experience has an influence on learner performance, it is imperative that the Education Department of a specific country recruit the best possible candidates. The section that follows explores the different strategies to attract the best student teachers.

2.2.6 RECRUITMENT AND TRAINING OF TEACHERS

Selecting and attracting suitable candidates to become teachers should be the top priority of all governments. England, for example, has led the way in recruitment and marketing of education as an attractive, viable and life-long career possibility (McKinsey and Company, 2007: 17-18). The British government spent a huge amount of money on national advertising campaigns (Barmby, 2006: 2) in an attempt to persuade top students to study education.

However, spending huge amounts of money on education does not necessarily guarantee success (McKinsey and Company, 2007: 1). What really matters is by "*... getting the right people to become teachers,...*".

Education systems across the world are constantly being scrutinised, so the debate about how to get the right candidates to become teachers is a continuous one. Research done by McKinsey and Company on the world's best school systems have found a consistent pattern with regards to the recruitment and selection of prospective teachers.

"Almost universally, the top school systems do two things: they have developed effective mechanisms for selecting teachers for teacher training, and they pay good starting compensation" (McKinsey and Company, 2007: 18).

In terms of teacher selection, Finland and Singapore has very successful selection processes. In the selection processes of both of these countries, there is a strong emphasis on academic achievement, the communication skills of the candidates, as well as their motivation to become teachers (McKinsey and Company, 2007: 18).

Not only is it important for a school system to have a good selection process, but the timing of this selection is just as crucial. It is therefore not always productive to have a screening process at the end of three or four years of teacher education.

Prospective education students should be screened and selected before their training commences. Finland and Singapore are excellent examples of this type of selection process.



Figure 8: Selection process for teachers in Finland (McKinsey and Company, 2007: 20).

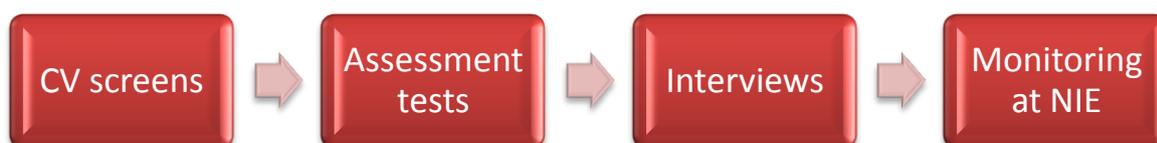


Figure 9: Selection process for teachers in Singapore (McKinsey and Company, 2007: 19).

It is clear that both Finland and Singapore have stringent selection processes, which in turn almost guarantees the output of high quality teachers.

In addition, the best school systems in the world allow only the top third of students (in terms of academic achievement) to even apply to become teachers (see table below).

Table 4: Teacher applications by country (McKinsey and Company, 2007: 16)

TEACHER APPLICATIONS IN THE WORLD'S BEST PERFORMING SCHOOL SYSTEMS		
COUNTRY	HIGH SCHOOL PERFORMANCE	PERCENTAGE OF APPLICANTS THAT EVENTUALLY BECOME TEACHERS
South Korea	Top 5% in school	9% of applicants
Finland	Top 10% in school	10% of applicants
Singapore	Top 30% in school	18% of applicants
Hong Kong	Top 30% in school	Unknown

Allowing large number of students to enter teacher training programs usually has a negative effect on the quality of teachers, and contributes to an oversupply of teachers (McKinsey and Company, 2007: 22).

Loeb *et al.* (2012: 270) suggest that schools can manage the quality of their teachers by using a number of different mechanisms. Firstly, schools can ensure that they recruit

quality teachers. Secondly, schools should retain quality teachers (and remove low-quality teachers). Finally, schools should continuously develop their current set of teachers.

In theory these mechanisms will ensure that schools attract the best possible teachers, but in terms of education policy it is not so simple to remove underperforming teachers from their posts.

To manage the standard of trained teachers, rigorous criteria for teacher certification could be imposed, as discussed below.

2.2.7 TEACHER CERTIFICATION

Previous studies regarding the impact of teacher certification on the performance of learners found that the degrees, coursework and certification of teachers had little significance, or were inconclusive, as a determining factor (Kane *et al.* 2006: 42 and Wayne & Youngs, 2003: 107). Kane *et al.* (2006: 42) further propose that “...the emphasis on certification status may be misplaced.”

If this is the case, traditional schools of thought where the emphasis is on teacher certification seems to be contradictory. This further suggests that teachers who have different certification levels, including those who are uncertified, can still be just as effective and productive as their fully certified colleagues.

A balance should still be maintained when implementing policies for teacher certification requirements, as these policies may “...prevent some poorly prepared teachers from entering the profession, they may also exclude others who would be quite effective in the classroom” (Hanushek & Rivkin, 2006: 1064).

During the 20th century, most teachers in the United States were required to complete teacher preparation programmes before receiving certification (Wayne & Youngs, 2003: 90). This has changed over time, bringing the value of teacher certification into question.

Researchers are not in agreement here, as some suggest that the certification of teachers make a significant difference in learner results. Conversely, many studies do as a matter of fact point to a statistically significant difference in mathematics, where additional

accreditation in mathematics has a positive impact on the teaching of mathematics (Goldhaber & Brewer, 2000: 139; Wayne & Youngs, 2003: 107).

2.2.7.1 SOUTH AFRICAN CONTEXT

To become a certified teacher in South Africa a potential candidate has to complete a Bachelor's degree in Education (B.Ed) or a three or four year Bachelor's degree in another field. In the latter case candidates must then complete a one year Post Graduate Certificate in Education (PGCE). After following any of these paths, a teacher subsequently needs to register with the South African Council for Educators (SACE) in order to receive official certification (Department of Basic Education, 2015: 1-2).

Still, South Africa is not producing enough teachers, especially in key subjects such as mathematics and science (McCarthy & Bernstein, 2011: 4). The report from the Centre for Development and Enterprise (CDE) also highlights the reality that the South African education system needs to produce at least 25 000 new teachers every year, but is only producing 10 000 (McCarthy & Bernstein, 2011: 4). Furthermore, it has also been found that only one third of the teacher training institutions in South Africa should in reality qualify for accreditation (McCarthy & Bernstein, 2011: 5).

Not only should the low supply of teachers be alarming, but also the quality of teacher training institutions in South Africa. In 2012 the reported percentage of teachers with certification in South Africa was at 97% (Department of Basic Education, 2013: 62). Although this a considerable proportion of the teaching force in South Africa, questions can still be posed regarding the quality of these qualifications. A survey done in 2007 by the Southern and Eastern African Consortium for Monitoring Educational Quality (SAQMEC), noted that South African teachers had the highest proportion of teachers with degrees of all 14 countries in the region (Department of Basic Education, 2013: 63). Even though the South African teachers were the most qualified, the South African mathematics teachers ranked 9th out of 14, while the language teachers ranked 7th out of 14 in terms of teacher subject knowledge (Department of Basic Education, 2013: 63).

2.2.7.2 SOUTH KOREAN CONTEXT

In the case of South Korea, there tends to be a general oversupply of secondary school teachers (as indicated in section 1.2). This can be due to the multiple paths a student can take to become a secondary school teacher, as opposed to only 12 universities around the

country that offer training programmes for primary school teachers (Kim, Kim & Han, 2009: 17). In 2004 there were more than 300 institutions in South Korea that offered training for secondary school teachers (Kim *et al.*, 2009: 16). These institutions include universities, graduate schools and education colleges (Kim *et al.*, 2009: 16).

Whichever route a prospective secondary school teacher decides to follow, an identical teacher certificate is issued by all the above mentioned institutions. After obtaining a teacher certificate, prospective teachers are still not guaranteed a teaching job – they first have to pass an employment examination. This exam is conducted by the MOE or POE (Metropolitan/Provincial Office of Education) and consists of three exams (Lee, 2008: 43). The first exam involves a written test on pedagogy and special areas. The second exam involves the writing of essays, while the third exam includes a practical test and an interview (Lee, 2008: 43). Students who fail this exam usually turn to the private sector to look for other jobs (Kim *et al.*, 2009: 17).

If a candidate wishes to become a primary school teacher in South Korea, the chances of being hired after receiving certification is much higher, as there are only 12 universities they can attend to be trained as qualified primary school teachers.

Not only does the certification of teachers differ between South Africa and South Korea, but there are also differences regarding compensation. The compensation and retention of teachers will be examined in the next segment.

2.2.8 COMPENSATION AND RETENTION OF TEACHERS

It should make sense that offering a competitive starting salary will attract better teacher candidates. The contrary was put forward by several academics, where little evidence of a positive correlation between high teacher salaries and the quality of teachers was found (Jacob & Lefgren, 2006: 62; Leigh, 2012: 41).

The opposing theory is that a competitive starting salary is an important component of attracting suitable candidates to become teachers (Hanushek & Rivkin, 2006: 1053 and McKinsey and Company, 2007: 26). Top performing education systems around the world seem to be successful in doing this. If salaries are higher, the total education expenditure rises. Some countries like Singapore and South Korea have countered this predicament by increasing the size of their classes (McKinsey and Company, 2007: 29). This was done based

on research that shows that class size does not have a significant influence on learner performance (Cho, Glewwe & Whitler, 2010: 31; McKinsey and Company, 2007: 12). In return, less teachers need to be employed, which makes higher salaries affordable.

2.2.8.1 PERFORMANCE PAY AND INCENTIVES

Implementing performance pay structures and incentives for effective teaching is a very complex undertaking (Jacob & Lefgren, 2006: 59). The literature about performance pay is once again divided. Some studies found a significant positive correlation between performance pay programs and learner performance (Carnoy, Brodziak, Luschei, Beteille & Loyalka, 2009: 20; Lavy, 2009: 2009; Muralidharan & Sundararaman, 2010: 13; West & Chingos, 2009: 19), while others like McKinsey and Company (2007: 37) found that “...the gains were not substantial.”

Nevertheless, performance pay has proved to be beneficial even in the private sector. Researchers have consistently established that a performance pay structure increases the output, motivation and effort of workers (Booth & Frank, 1999: 447; Gilpin, 2012: 15; Lazear, 2000: 1359). If this is the case, a performance-based pay structure would be able to attract better candidates to become teachers, and in turn replace current controversial performance pay programs that are based on rewarding experience and qualifications (Kim *et al.* 2009: 31).

An incentive-driven pay structure is also an excellent instrument to keep teachers motivated (Lavy, 2009: 1979; McKinsey and Company, 2007: 36-37). This would specifically be based on the performance of a teacher’s learners in national tests. Once again, the value that the teacher adds (in terms of the academic gains of learners from one year to another) would be calculated in order to determine the relevant incentive.

Employing incentives in an effort to raise the quality of teaching, would not come without obstacles. Koretz (2002:767) points out that some teachers would try to find ways to manipulate the results of their learners in some way in order to qualify for incentives. Furthermore, it would add additional pressure on teachers to perform. Still, incentives could also be a practical solution in persuading teachers to work in less desirable environments with limited resources (West & Chingos, 2009: 19). Countless schools in rural areas are often understaffed or they have to resort to hiring inadequately trained teachers.

These types of incentive programs would then be able to enhance the accessibility of quality education to all learners.

2.2.8.2 RETENTION OF TEACHERS

When maintaining a high standard of teaching in any country, it is crucial to retain teachers in the profession. The reality is that the supply and demand of teachers play an enormous role in increasing the quality of teachers. If there is a high demand for teachers and a low supply, this would influence the quality of teachers in a negative way. The reason for this is that schools are obligated to fill positions even if it means employing unqualified teachers.

The opposite is true that when there is an oversupply of teachers (for example high school teachers in South Korea, as mentioned in section 1.2), the competition for teaching positions increases accordingly. In terms of the quality of teachers this would be favourable.

The current situation in South Africa, according to the Department of Education (in SACE, 2010: 6), is that about 6 000 new teachers qualified at the end of 2006, while 20 000 left during the same year. Furthermore, research done by JET in 2001 (in SACE, 2010: 6) estimated that in order to maintain the education system, 15% of all matriculants need to become teachers. This figure is alarming, especially since only about 3% of matriculants are currently becoming teachers (SACE, 2010: 6).

Numerous factors could influence the retention of teachers. This includes the unfair assignment of learners to new teachers (Loeb *et al.* 2012: 273), school leadership and staff practices (Loeb *et al.* 2012: 299) and salaries (Wiswall, 2013: 37). It often boils down to the leadership role played by the principal.

Teachers are the driving force in ensuring hope for the future. Without teachers there would be no doctors, lawyers or scientists. The difficulty is to support and motivate teachers to stay in the education system until they retire.

In order to encourage teachers to make teaching their life-long career, it would make sense for them to teach at their "preferred" school. This in turn refers to the match quality of teachers, which is considered below.

2.2.9 MATCH QUALITY

“A match effect is anything that makes a teacher more or less productive at one school versus another” (Jackson, 2010: 8). This is a truly interesting phenomenon. After completing their teacher training and qualifying as a teacher, all new teachers have to take the next big step in finding their first teaching job. This can be a gruelling process, as some teachers have to apply to numerous schools before being appointed.

Most teachers have at least one “dream school” where they would love to teach, but the reality is that many teachers often take any teaching job they can get. This means that they often start their teaching career at a less desirable school or at a school that is quite far away. West and Chingos (2009: 6) put forward that teacher mobility could increase student achievement when teachers decide to move to schools where they believe they would be more effective.

Possible reasons for teachers moving to other schools include better salaries and working conditions (West & Chingos, 2009: 6). It is therefore understandable that many new teachers would jump at the first opportunity of moving to a better school. More experienced teachers are also inclined to move if it leads to a promotion.

Research done by Jackson (2010: 3) suggests that *“teachers who move schools are more effective after the move than before.”* This could be a significant finding, as some teachers might become less productive if they remain at one school for too long. This finding could be contradictory, as some teachers who have been teaching at the same school for many decades, are still leaders on their terrain. This could be in the classroom or even on the sports field.

Although match quality possibly has a considerable impact on the productivity of teachers, the status and professional identity of teachers also influence their productivity. This is explored in the next section.

2.2.10 TEACHER STATUS AND PROFESSIONAL IDENTITY

Education policy plays a pivotal role in determining the status of the teaching profession in a country (McKinsey and Company, 2007: 17). In South Korea, for example, high school

teachers enjoy a higher status than primary school teachers, due to the government's control of training institutions for primary school teachers (as mentioned in section 2.2.7.2).

In England teaching became the most popular profession in the country in the span of only five years (McKinsey and Company, 2007: 17). This was due to the government's extensive marketing strategies in an effort to raise the quality of their teaching force (as mentioned in section 2.2.6).

Some strategies to improve the status of the teaching profession of a country could include successfully managing the screening process of teacher applicants.

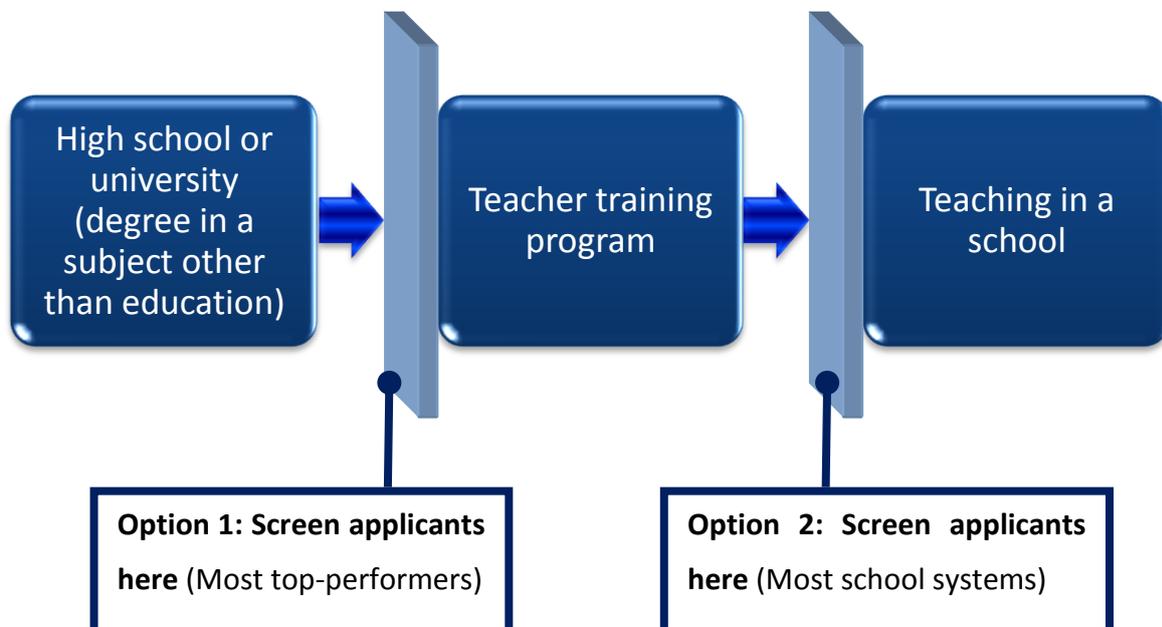


Figure 10: Screening applicants (McKinsey and Company, 2007: 21)

It is clear from the figure above that most top performing education systems around the world are managing the applicants who eventually become teachers. In doing this a country can improve the status of their teachers. When better candidates apply, the teaching profession will be more competitive and professional. In addition this will also manage the supply and demand of teachers.

After careful consideration of numerous factors that could possibly influence teacher productivity, the possible methods of measuring teacher productivity is scrutinised in section 2.3 below.

2.3 MEASURING THE PRODUCTIVITY OF TEACHERS

Most researchers have found it difficult to measure the productivity of teachers (Hanushek & Rivkin, 2006: 1058; Hanushek & Rivkin, 2012: 132-133; Harris & Sass, 2014: 184; Sass, Symekina & Harris, 2010: 2; Rivkin *et al.*, 2005: 422; Rockoff, 2004: 247; Slater, Davies & Burgess, 2009: 629). The main reason for this is because of the myriad contextual factors that makes up the characteristics of a teacher, along with a multitude of external factors that could influence the productivity of teachers.

The current literature on the measurement of teacher productivity mainly focuses on four different approaches. These are discussed in the following sections.

2.3.1 TEACHER SUBJECT COMPETENCY TESTS

Regular and constructive assessment tools (including teacher tests) that monitor the competency of teachers are currently getting global attention (Hanushek & Rivkin, 2006: 1064). This could be in the form of a pre-employment examination (Kim & Han, 2002: 40) as implemented in South Korea. So before any teacher receives official teacher certification, they should be required to pass a multi-faceted examination. This will bridge any possible differences in standard between teacher training institutions. These examinations would enhance the output of high quality, competent and employable teachers. Those teachers who do not perform adequately in this examination could then be required to attend supplementary training.

At a media briefing in March 2015, the South African minister of Basic Education announced that the Department of Education was going to consider testing Grade 3, 6 and 9 teachers in the subjects which they teach (Phakathi, 2015: 1). These results will supposedly only be used for research purposes, but it should serve as a useful measure of a teacher's competence.

This strategy has been used in research in South Africa before. JET Education Services did a study in 2009 where they included 268 schools from 8 provinces (excluding Gauteng). They

posed a simple Grade 6 fraction question to Grade 4 and 5 mathematics teachers. Only 53% of the Grade 4 mathematics teachers answered correctly, while 72% of the Grade 5 teachers were able to solve the problem (Grobbelaar, 2011: 1). These results surely vindicate the use of teacher competency tests.

Although teacher subject competency tests could be a viable option for measuring teacher productivity, the role of the principal should not be underestimated. The next section describes the role of the principal regarding teacher productivity.

2.3.2 THE ROLE OF THE PRINCIPAL

The role of the principal in managing and measuring the productivity of the teachers at his/her school is completely underestimated. An effective principal would undoubtedly know the staff well and would therefore be able to identify teachers who are more productive than others (Jacob & Lefgren, 2006: 64). Previous studies done on the effectiveness of a principal's assessment of the productivity of the teachers at their schools are in support of this practice (Harris & Sass, 2014; Jacob & Lefgren, 2006). Harris and Sass (2014: 36) concluded that the *"evaluation of teachers by principals are likely to be a useful component of teacher assessment when outcomes beyond student achievement are valued"*.

The study done by Jacob and Lefgren (2006: 64) also pointed out that learner performance measured by national tests, would probably increase when a system is used where principals assess the productivity of teachers. They also found that the principals in their study were very accurate in identifying the most and the least productive teachers in their schools (Jacob & Lefgren, 2006: 64). The problem was that most principals struggled to accurately evaluate the productivity of the "average" teacher (close to the median score).

Using a system based on the evaluation of principals certainly comes with both advantages and disadvantages. From the research done by Harris and Sass (2014: 33-36) and Jacob and Lefgren (2006: 64), the following table summarises the potential advantages and disadvantages of using a system where principals evaluate the productivity of teachers.

Table 5: Advantages and disadvantages of principals' evaluation of teachers (Harris & Sass, 2014: 33-36; Jacob & Lefgren, 2006: 64)

Advantages and disadvantages of principal's evaluation of teachers	
ADVANTAGES	DISADVANTAGES
Correlation with traditional human capital measures, include teacher intelligence, subject knowledge and teaching skills.	Principals find it more difficult to evaluate new teachers than experienced teachers.
Strong association with non-cognitive personality traits like motivation, enthusiasm, co-operation and interpersonal skills.	The evaluation of principals might be different in a high-stake situation (when determining the compensation or dismissal of teachers).
There is a cost advantage, as independent evaluators could be expensive. Principals evaluate teachers in a natural setting by having informal conversations with learners, parents and other teachers.	Some principals might not be willing to make these tough decisions when there are such serious consequences. This could be due to social or political pressures.
The results of learner achievement would probably increase when principals evaluate teachers.	The working relationship between teachers and principals could be negatively influenced.
This evaluation could offset the negative consequences of test-based accountability systems.	Most principals will only be accurate in identifying the most productive and least productive teachers.

There are clearly various advantages and disadvantages in requiring of principals to measure the productivity of teachers at their schools. The role of the Department of Education is examined in the subsequent section.

2.3.3 ROLE OF THE DEPARTMENT OF EDUCATION

Modern systems of compensation and retention of teachers are shifting the focus away from traditional measures of teacher productivity (such as bonuses) with regard to teacher qualification and experience (Harris & Sass, 2014: 2). The responsibility now shifts towards

the educational policy makers who need to re-evaluate the systems they have in place to measure the productivity of teachers.

Currently, the Department of Basic Education in South Africa makes use of a self, peer and supervisor evaluation system, called IQMS (Integrated Quality Management System). In a study conducted by De Clerq (2008: 16) she concluded that the IQMS is flawed. She found that the IQMS was neither realistic nor did the Department provide enough support to teachers. Furthermore, De Clerq (2008: 16) suggested that the IQMS needs to change *“...so that it reflects the local context, where educators and schools are at, and how they need to change and improve.”*

I have also been exposed to IQMS over a period of six years. In my experience I have also found that teachers are mostly negative towards IQMS as it entails more administrative tasks, something which frustrates teachers. Some even feel that the 1% salary increase is not worth all the effort.

In South Korea the teacher evaluation system focuses on developing the teacher's teaching ability, as well as the managerial abilities of principals and vice principals (Park, 2010: 11). Not only are teachers evaluated by their peers, principals and vice principals, but parents and learners also give feedback by completing checklists and questionnaires (Park, 2010: 12). These results are intended to identify possible weaknesses of teachers. Teachers who are found to achieve sub-standard results could face disciplinary actions or even dismissal (Park, 2010: 12).

Even though the education departments of both South Africa and South Korea utilise their own systems to evaluate the productivity of teachers, other countries are making use of value-added models. These value added-models will be evaluated in the next section.

2.3.4 VALUE-ADDED MODELS

Considering the continuous argument on the best method to measure the productivity of teachers, value-added models may still not provide a clear, unambiguous method for measuring teacher productivity (Harris & Sass, 2014: 33). Value-added *“...means evaluating teachers according to the learning gains of students on various achievement tests”* (Hanushek & Rivkin, 2012: 131).

In order to calculate the value added by specific teachers, an extensive test score dataset is required. These value-added models are often hampered by data limitations (Sass *et al.*, 2010: 34). Furthermore, complex formulae also need to be formulated in order to account for a number of different variables including family and peer influences, previous teachers, cognitive ability and neighbourhood inputs (Hanushek & Rivkin, 2012: 134).

To avoid bias in value-added models, researchers have pointed towards developing more flexible specifications while avoiding the simplification of assumptions (Sass *et al.*, 2010: 35). It is therefore critical for researchers to adapt value-added models in order for it to be successfully applied in research.

A typical value-added model is the General Cumulative Model of Achievement as proposed by Boardman and Murnane in 1979 (in Sass *et al.*, 2010: 4).

$$A_{it} = A_t[\mathbf{X}_i(t), \mathbf{F}_i(t), \mathbf{E}_i(t), \mu_{i0}, \varepsilon_{it}]$$

A_{it} refers to the achievement level for individual i at the end of their t^{th} year of life. $\mathbf{X}_i(t)$, $\mathbf{F}_i(t)$ and $\mathbf{E}_i(t)$ represents the histories of the individual, family and school-based educational inputs. μ_{i0} accounts for time-invariant characteristics an individual is endowed with at birth, while ε_{it} is an idiosyncratic error (Sass *et al.*, 2010: 4).

This model could be used as a basis for the formulation of new value-added models that measure the productivity of teachers. This should be supported by comprehensive and detailed datasets that could be utilised when incorporating a value-added model to determine the value added by a specific teacher.

The literature review is summarised in the table below.

2.4 SUMMARY

The purpose of this chapter was to conceptualise the term productivity, as well as exploring various factors that relate to the productivity of teachers. In addition, possible methods for the measurement of teacher productivity were investigated.

The table below highlights the main topics of chapter 2:

Table 6: Summary of chapter 2.

Defining productivity		
Theme	Findings	Reference
Definition of productivity	The definition of the term productivity is related to concepts such as effectiveness, efficiency, performance and profitability.	2.2.1
Factors relating to the productivity of teachers		
Construct	Findings	Reference
Quality of teachers	Although there is a significant difference in the quality of teachers, teacher quality is very difficult to predict.	2.2.2
Teacher aptitude	Teacher aptitude is on the decline in some countries. A standardised test is imposed by some countries to measure teacher aptitude.	2.2.3
Construct	Findings	Reference
Teacher effectiveness	Teacher effectiveness can be viewed as three interconnected dimensions (McBer, 2000: 6). Neither teacher experience nor teacher qualification guarantee teacher effectiveness.	2.2.4
Teacher experience	The experience of teachers has bigger effects when teachers start their career, and in the lower grades.	2.2.5
Recruitment and training of teachers	The top school systems have developed effective mechanisms for selecting teachers for teacher training, and they pay high starting salaries (McKinsey and Company, 2007: 18). The timing of the screening of teacher candidates is crucial.	2.2.6
Teacher certification	Teacher certification has little significance for determining the effectiveness of teachers.	2.2.7
	<p>Teacher certification in South Africa:</p> <ol style="list-style-type: none"> 1. Study B.Ed (4 years). 2. Obtain Bachelor's degree in any field (3 or 4 years) + PGCE (1 year). <p>Teacher certification in South Korea:</p> <ol style="list-style-type: none"> 1. Obtain teacher certificate: <ul style="list-style-type: none"> Primary school teachers – study at one of 12 universities nationwide. High school teachers – more than 300 institutions offer 	2.2.7.1 2.2.7.2

	<p>teacher training programmes.</p> <p>2. Pass employment examination.</p>	
Construct	Findings	Reference
Compensation and retention of teachers	<p>There is little evidence of a positive correlation between high teacher salaries and the quality of teachers.</p> <p>Performance pay and incentives for teachers could be a way to motivate teachers. Incentives could persuade teachers to teach in less desirable environments with limited resources.</p> <p>The supply and demand of teachers play an enormous role in increasing the quality of teachers. The unfair assignment of learners to new teachers, salaries, and school leadership and staff practices could all influence the retention of teachers.</p>	<p>2.2.8</p> <p>2.2.8.1</p> <p>2.2.8.2</p>
Match quality	<p>Teacher match quality refers to anything that makes a teacher more or less productive at one school, as opposed to at another school. New teachers often do not start their career at their “<i>ideal</i>” school. Teacher mobility could increase student achievement.</p>	2.2.9
Teacher status and professional identity	<p>The status and professional identity of teachers can be influenced by the efforts of the government of a country. This could be achieved through successful marketing strategies in order to attract the best possible candidates for the teaching profession.</p>	2.2.10
Measuring the productivity of teachers		
Construct	Findings	Reference
Teacher competency tests	<p>It is very difficult to measure the productivity of teachers due to numerous external factors as well as the unique characteristics of teachers.</p> <p>Teacher competency tests could be useful as a pre-examination for new teachers or as a continuous subject competency test for current teachers.</p>	<p>2.3</p> <p>2.3.1</p>
The role of the principal	<p>A system where principals assesses the productivity of the teachers at their schools has both advantages and disadvantages.</p>	<p>Table 2-3</p> <p>2.3.2</p>

Role of the Department of Education	Teachers should receive continuous support from the Department of Education when quality management systems are implemented.	2.3.3
Value-added models	These models are often complicated and biased. It is difficult to account for different variables that might influence learner test scores. An extensive dataset is required to calculate teacher value-added.	2.3.4

2.5 CONCLUSION

In this chapter I reported on the literature review that I did on teacher productivity. I found that researchers mostly agree that teacher quality is difficult to predict and even more difficult to measure. In addition, it was found that teacher aptitude plays a considerable role in determining teacher quality, and therefore some countries are requiring prospective teachers to write aptitude tests before entering teacher training courses. Furthermore, the recruitment, training, certification and compensation of teachers should also be considered as being crucial factors in determining the success of the education system of a country.

In the chapter that follows, I provide details with regard to the research methodology of this study.

CHAPTER 3: METHODOLOGY

3.1 INTRODUCTION

In order to answer the primary research question of this study, I had to decide how I was going to measure teacher productivity. The previous section reviewed the available literature on the productivity of teachers. It was clear that a multitude of factors have an influence on teacher productivity. Furthermore, the evidence clearly pointed towards a complexity in the measurement of the productivity of teachers. In addition, researchers who had attempted to measure teacher quality in South Africa, were unable to do so, as few African countries have datasets available for teachers (Hein & Allen, 2013: 7).

In the light of these current constraints in the measurement of teacher productivity in South Africa, I decided to rather gain insight on the perceptions of teachers regarding teacher productivity. I also took my teaching experiences in South Korea into consideration and decided to include teachers from South Korea as well.

3.2 RESEARCH METHODOLOGY

Teachers (including principals) from the Mangaung area in the Free State, South Africa, as well as in Busan, South Korea, participated in this survey. The perceptions of these teachers (and principals) would be valuable to my study, leading me to use a survey questionnaire as research instrument.

3.2.1 SURVEY QUESTIONNAIRE

“A formal standardized questionnaire is a survey instrument used to collect data from individuals about themselves...” (Siniscalco & Auriat, 2005: 3). The emphasis here is on the term *“standardized”*. If a survey questionnaire is standardised, then all respondents are exposed to the same questions, while making use of the same system of coding the responses (Siniscalco & Auriat, 2005: 3).

During my analysis of the existing literature, I found no studies that explored the perceptions of teachers regarding teacher productivity. Consequently, I concluded that I would need to develop a new questionnaire for exploring the perceptions of teachers. An adapted version of the Likert scale was utilised. A Likert scale is *“a psychometric response*

scale primarily used in questionnaires to obtain participant's preferences or degree of agreement with a statement or set of statements" (Bertram, 2007: 1). Instead of using a traditional five point scale that includes: strongly disagree, disagree, neutral (neither agree nor disagree), agree and strongly agree, I decided to omit the neutral option. This was done because bias is a known weakness of Likert scales (Bertram, 2007: 7). In other words, many respondents would tend to avoid extreme responses like strongly disagree or strongly agree.

The questions for the questionnaire were developed based on information gleaned from the literature review. The topics emphasised in the literature were expanded into questions that explored the perceptions of teachers regarding teacher productivity. Some sections in the questionnaire referred only to the South African context (e.g. type of school), while others referred to the South Korean context only (e.g. position at the school).

The questionnaire was originally designed in English, but was then translated into Korean. The translation was done by an experienced Korean teacher who teaches English in South Korea. I had to ensure that the questionnaires stayed identical, so that there were no discrepancies regarding the analysis of the results. To make it even more convenient for the respondents, I also made an online version of the questionnaire available (via www.surveymonkey.com). South African respondents had a choice of completing a paper copy or an online version of the questionnaire, but South Korean respondents could only complete the online version. In the case of the South Korean respondents, they had two weeks (after I sent a link of the survey to them via email) to complete the online survey.

3.2.2 PARTICIPANTS AND RESEARCH PROCEDURE

The participants were teachers (including principals) from schools in Mangaung, Free State, South Africa and from Busan, South Korea.

3.2.2.1 SAMPLING TECHNIQUE

The reason why the above mentioned research areas were chosen, was firstly because I had been a teacher in Busan in 2010, and secondly because I live, work and study in Mangaung. Consequently, this was a convenient sample in terms of the research areas.

I wanted to ensure that every single school (therefore every teacher and principal) in the Mangaung and Busan areas had an equal and fair chance of being selected to participate.

This would increase the reliability and validity of the research results. I consequently made use of a probability sampling method in terms of the choice of participants. A probability sampling method is one where all the members of a specific population have a chance to be selected (Barreiro & Albandoz, 2001: 4).

The systematic sampling method was used where I made use of an official list of all the schools in the Mangaung and Busan areas. *“In systematic sampling, every kth element in the total list is chosen (systematically) for inclusion in the sample”* (Rubin & Babbie, 2013: 397). Before the participating schools were identified, all the schools were alphabetically grouped according to the type of school.

a) The Mangaung sample

I decided to invite 30 schools from each of the two districts to participate. The schools were selected using the systematic sampling method. There were 266 schools on the list for the Mangaung district, so I selected every 9th school for participation. The first school was randomly selected from the first nine schools on the list, and thereafter every ninth school was selected.

My only limitation regarding the selection of schools was that selected schools had to have at least ten teachers. A total of nine schools initially selected in the Mangaung district did not meet this criteria. These schools were replaced by alternately using the school directly above or below them on the list. The schools in the Mangaung district were situated in Bloemfontein, Mangaung, Botshabelo and Thaba Nchu.

I attempted to contact each principal at the selected schools in Mangaung telephonically before I visited their school. It was difficult to reach some of the principals, as some of the schools experienced problems with their telephone lines. Nevertheless, most schools were very co-operative, so I managed to visit 28 of the 30 schools. Twenty-seven schools agreed to participate in the study, and subsequently I was able to collect data from 25 schools.

Table 7: Demographics of schools in Mangaung

School	District	School size	Type of school	
1	Mangaung	501-1 000	Public	Intermediate
2	Mangaung	501-1 000	Public	Primary
3	Mangaung	501-1 000	Public	Primary
4	Mangaung	501-1 000	Public	Secondary
5	Mangaung	1 001+	Public	Primary
6	Mangaung	1 001+	Public	Primary
7	Mangaung	501-1 000	Public	Primary
8	Mangaung	501-1 000	Public	Secondary
9	Mangaung	501-1 000	Public	Secondary
10	Mangaung	301-500	Public	Primary
11	Mangaung	301-500	Public	Primary
12	Mangaung	0-300	Public	Intermediate
13	Mangaung	501-1 000	Public	Intermediate
14	Mangaung	1 001+	Public	Intermediate
15	Mangaung	301-500	Public	Intermediate
16	Mangaung	501-1 000	Public	Primary
17	Mangaung	1 001+	Public	Primary
18	Mangaung	301-500	Public	Intermediate
19	Mangaung	301-500	Public	Primary
20	Mangaung	501-1 000	Public	Combined
21	Mangaung	0-300	Private	Primary
22	Mangaung	501-1 000	Public	Primary
23	Mangaung	0-300	Public	Special
24	Mangaung	501-1 000	Public	Primary
25	Mangaung	1 001+	Public	Primary

The participating schools in Mangaung were all visited during the third term of 2015. I delivered a total of 15 questionnaires at every school (some schools received less because they had less than 15 teachers) and also left a sealed ballot box with the principal. The participants could put their completed questionnaires (after they were folded and stapled – as instructed) inside. Of the 382 paper questionnaires I delivered, 279 were returned. The

electronic version (via the surveymonkey.com link) of the questionnaire was sent to only three schools, as most schools preferred to complete the paper version of the questionnaire. Only three participants responded using the online version of the questionnaire.

I received a total of 282 questionnaires, of which I could only use 278. Questionnaires were deemed unusable and were omitted if they were incomplete or not completed at all. The utilisable questionnaires were 73% of the original number of questionnaires sent to the schools.

Each participant was required to indicate how their school is classified.

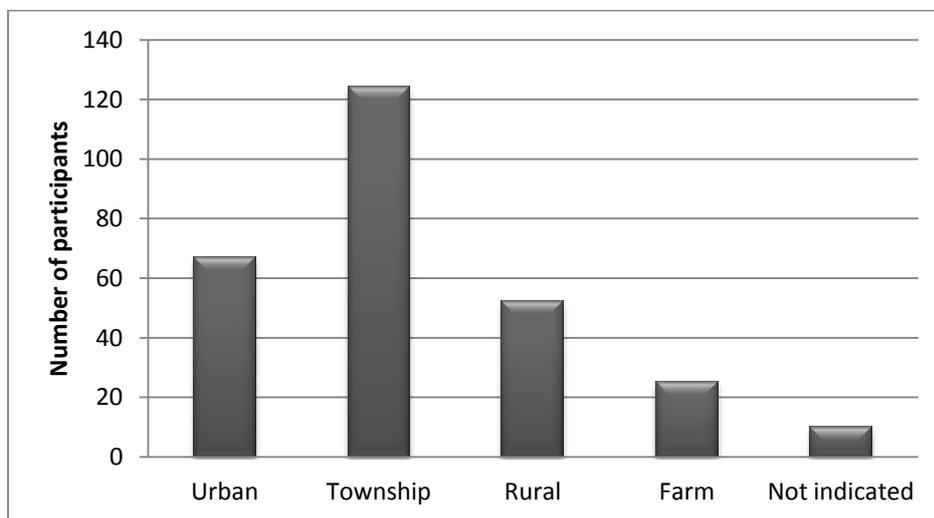


Figure 11: Classification of participating schools in Mangaung (n=278)

The demographic details of the participants are indicated in Table 8, below.

Table 8: Demographical information of respondents

Question	Responses	N	%
Gender	Female	190	68,35%
	Male	81	29,14%
	Not indicated	7	2,52%
		278	
Age group	20 -29 years	38	13,67%
	30 -39 years	42	15,11%
	40 -49 years	113	40,65%
	50 -59 years	75	26,98%
	60+	10	3,60%
		278	
Qualifications	Grade 12	3	1,08%
	Diploma	62	22,30%
	Degree (or degree and diploma)	127	45,68%
	Honours degree	73	26,26%
	Master's degree	9	3,24%
	PhD	1	0,36%
	Not indicated	3	1,08%
		278	
Position at school	Teacher	209	75,18%
	HOD	42	15,11%
	Vice-principal	8	2,88%
	Principal	18	6,47%
	Not indicated	1	0,36%
		278	
Number of learners in class	0 – 15 learners	31	11,15%
	16 – 25 learners	22	7,91%
	26 – 35 learners	61	21,94%
	36 – 45 learners	93	33,45%
	45+ learners	68	24,46%
	Not indicated	3	1,08%
		278	

In addition, the respondents were required to share more detailed information about their teaching career, as reflected in the table below.

Table 9: Teaching careers of respondents in Mangaung

Question	Responses	N	%
Teaching experience	Less than 10 years	73	26,26%
	10-19 years	68	24,46%
	20+ years	126	45,32%
	No written answer	11	3,96%
		278	
Number of schools taught at	2 or less schools	142	51,08%
	3 or more schools	120	43,17%
	No written answer	16	5,76%
		278	
Teaching as first choice of study	No	133	47,84%
	Yes	143	51,44%
	Not indicated	2	0,72%
		278	
Left education to pursue other occupation	No	248	89,21%
	Yes	28	10,07%
	Not indicated	2	0,72%
		278	

The respondents also had to indicate which phases they teach. They were allowed to indicate more than one phase. The figure below summarises these responses.

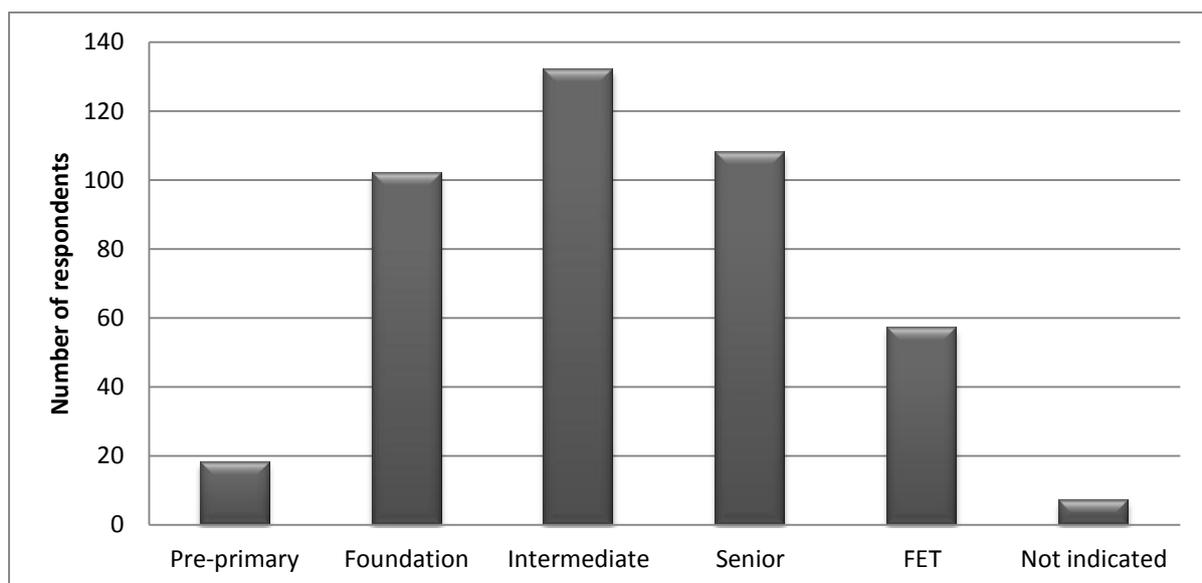


Figure 12: Phases that respondents teach (n=278)

b) The Busan sample

As in the case of the Margaung sample, I grouped all the schools in Busan according to the type of school. After grouping the schools, I decided to invite 30 schools to participate. The schools were selected using the same systematic sampling method. There were 650 schools on the Busan list, so I selected every 22nd school for participation. Again, the first school was randomly selected from between one and 22, and thereafter every 22nd school was selected. This selection included 14 elementary schools, 8 middle schools, seven high schools and one special school.

I experienced various difficulties when I tried to contact the schools in Busan. Firstly, the list of schools that I had for the Busan district was not as detailed as the Margaung list. It did not contain the full contact details of each school, and only the websites were listed. I needed the email address of each school, but the websites only yielded their telephone numbers. In order to solve this problem, I had to phone each school and ask to speak to someone who speaks English.

This is where I encountered my second issue: language. I contacted all 30 schools on my list, but at seven of the schools I was unable to get hold of someone who could speak English. Initially, most of the people I spoke to were very surprised and even suspicious after receiving my call. I was able to get email addresses for 23 schools. Subsequently, I sent the link of the online survey to these email addresses, but two emails were not delivered (the email addresses were incorrect). I could therefore conclude that 21 schools in Busan received the link to participate in this study.

As I could not visit the schools (or the principals) in Busan personally, and the schools are not identifiable on the questionnaire, it was unclear how many different schools completed the online survey. However, the electronic version (via the [surveymonkey.com](https://www.surveymonkey.com) link) of the questionnaire was completed by 40 participants from Busan.

Each participant was required to indicate the size of their school, the type of school, as well as how their school is classified.

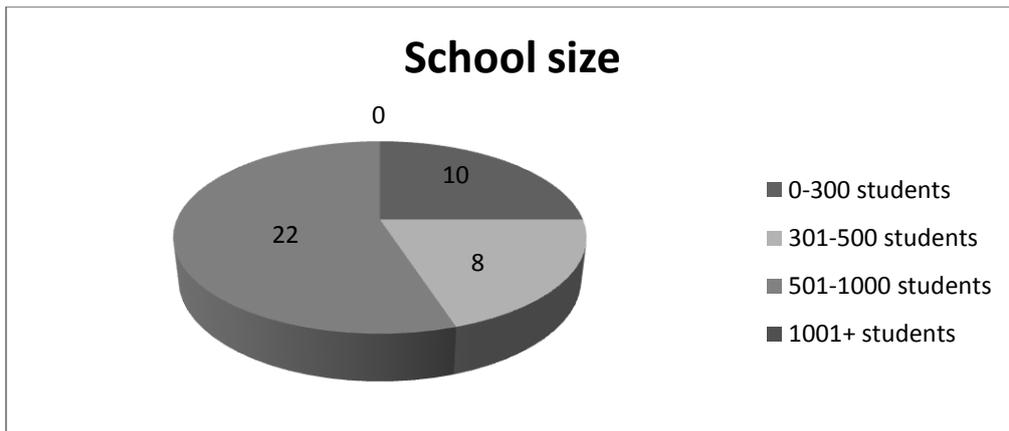


Figure 13: Size of schools (n=40)

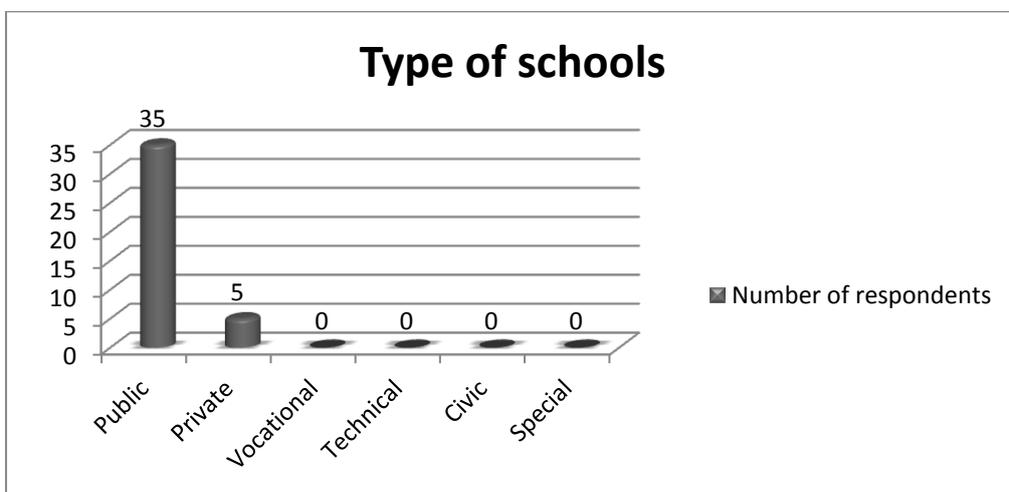


Figure 14: School type (n=40)

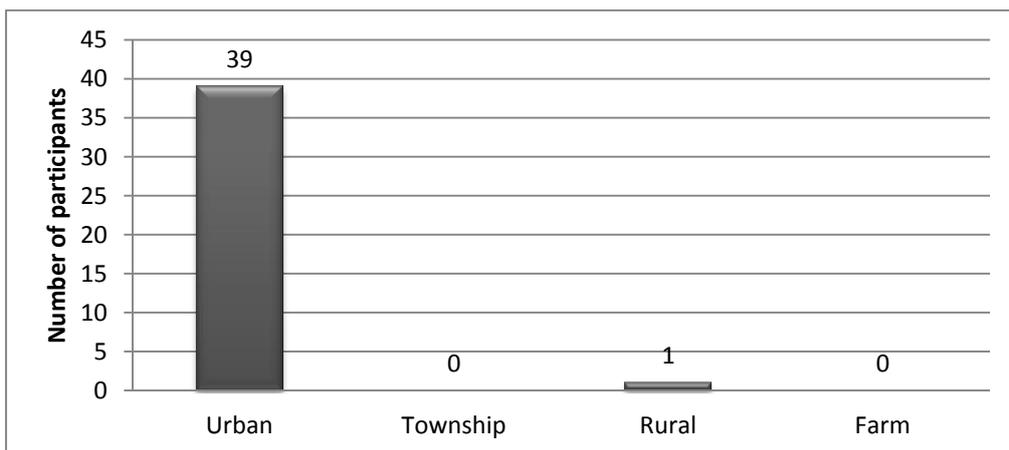


Figure 15: Classification of participating schools in Busan (n=40)

Every participant also had to share some background information. This information is summarised in the table below.

Table 10: Demographical information of respondents

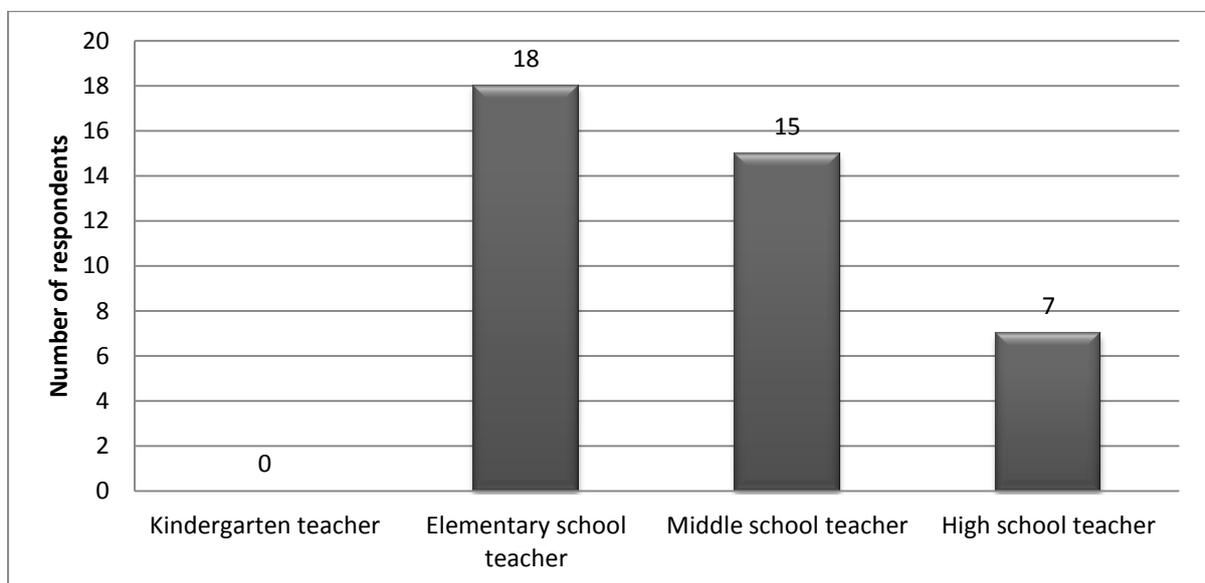
Question	Responses	n	%
Gender	Female	30	75%
	Male	10	25%
		40	
Age group	20 -29 years	2	5%
	30 -39 years	14	35%
	40 -49 years	7	17,5%
	50 -59 years	15	37,5%
	60+	2	5%
		40	
Qualifications	Grade 12	0	
	Diploma	1	2,5%
	Degree (or degree and diploma)	15	37,5%
	Honours degree	1	2,5%
	Master's degree	20	50%
	PhD	3	7,5%
		40	
Position at school	Teacher (Grade 2)	11	27,5%
	Teacher (Grade 1)	23	57,5%
	Vice-principal	3	7,5%
	Principal	3	7,5%
		40	
Number of learners in class	0 – 15 learners	2	5%
	16 – 25 learners	27	67,5%
	26 – 35 learners	10	25%
	36 – 45 learners	1	2,5%
	45+ learners	0	
		40	

In addition, the respondents were required to indicate more detailed information about their teaching careers, as reflected in the table below.

Table 11: Teaching careers of respondents in Busan

Question	Responses	N	%
Teaching experience	Less than 10 years	10	25%
	10-19 years	11	27,5%
	20+ years	18	45%
	No written answer	1	2,5%
		40	
Number of schools taught at	2 or less schools	12	30%
	3 or more schools	28	70%
		40	
Teaching as first choice of study	No	6	15%
	Yes	34	85%
		40	
Left education to pursue other occupation	No	37	92,5%
	Yes	3	7,5%
		40	

The respondents also had to indicate their involvement in education by specifying which group of students they teach. They were allowed to indicate more than one. The figure below summarises these responses.

**Figure 16: Involvement in education (n=40)**

3.2.3 SURVEY INTEGRITY

In order to generalise the results from the questionnaire, it was imperative to conduct the study using ethical research practices. As the primary researcher I decided to include human participants, which bound me to specific research procedures.

3.2.3.1 ETHICS

The first step before even considering contacting any school or principal was to apply for ethical clearance from the Ethics Committee of the University of the Free State. The Faculty of Education at the University of the Free State granted me ethical clearance for this study in June 2015 (reference number: UFS-HSD2015/0253). Secondly, I needed to get permission from the Free State Department of Education to conduct my research at schools in the Free State. The Department approved my application in September 2015.

I also needed permission from the Busan MOE (Ministry of Education) to conduct the study in Busan, South Korea. After countless enquiries, phone calls and emails, a senior education officer at the Busan MOE concluded that there would be no permission document required for me to conduct research in the Busan district. The only condition was that I had to contact the principals myself in order to get permission to conduct the study at the individual schools.

3.2.3.2 RELIABILITY

Reliability is in essence to which extent a research instrument can consistently represent the total population of the study and whether or not the instrument can be used again to obtain similar results (Joppe in Golafshani, 2003: 597).

As I developed my own survey instrument, it was necessary to measure the internal reliability of the questionnaire. This was done using Cronbach's Alpha. Cronbach's Alpha was calculated for determining how reliable the survey instrument was. "*Cronbach's Alpha is an index of reliability associated with the variation accounted for by the true score...*" (Santos, 1999: 1).

The value of Alpha can range from 0 to 1, where a higher score would indicate a more reliable instrument. An Alpha score of above 0,7 is considered to be acceptable (Nunnally in Santos, 1999: 1).

In the case of the Mangaung sample, the Alpha value was 0,8676. This indicates that the research instrument was highly reliable (Cohen *et al.* 2007: 506). The Alpha value for the Busan sample was 0,8611 which also indicates very good reliability. The combined Alpha value of Mangaung and Busan was 0,8671.

3.2.3.3 VALIDITY

When a researcher scrutinises the validity of a research instrument, the meaningfulness of the instrument is questioned (Drost, 2011: 114). The validity of a research instrument also refers to whether or not the instrument actually measures what it was intended to measure.

Once again, the questionnaire used in this study has never been used in research before, as I have developed the questions and statements myself. The research instrument was able to measure the teachers' perceptions regarding teacher productivity, therefore I can conclude that the instrument was valid.

3.3 DATA ANALYSIS

The research instrument allowed me to make use of quantitative research methods with regards to the data analysis. This was done by using descriptive as well as differential statistics.

Each particular question in the questionnaire was analysed as ordinal data. The mean scores were calculated for each construct from each country. This was summarised using bar charts. As the questions were the same for South African and South Korean participants, it was possible to use the *t-test* and the one-way ANOVA test to compare the responses between groups and also within groups.

A total of 70 questions on the questionnaire was coded in order to summarise and analyse the data. The remaining two questions were written responses (both numerals), so it was also possible to summarise them. The data was first captured using an Excel worksheet. The questions were grouped according to different themes or constructs. Next, the data was exported to the STATA IC 11 program in order to engender the differential statistics.

3.3.1 DESCRIPTIVE STATISTICS

Data can be summarised and described using the mean score (\bar{x}) which is the average of a set of data. In the case of the Likert scale where the level of agreement or disagreement of the participant is represented by an ordinal number from one to four, the median (Me) would indicate the middle score after the data has been organised in ascending order. Lastly, the mode (Mo) would be the value or response that most participants chose to represent their opinion about a certain issue.

The standard deviation measures how far an individual score is from the mean, so it therefore indicates how much the scores vary. The formula for calculating the standard deviation of scores is:

$$s = \sqrt{\frac{\sum(x - \bar{x})^2}{n - 1}}$$

3.3.2 INFERENCEAL STATISTICS

Where descriptive statistics provide a basic summary of the gathered data, inferential statistics attempt to make inferences and predictions based on the data (Cohen *et al.* 2007: 504). Secondly, inferential statistics are often more powerful and valuable to researchers than descriptive statistics (Cohen, *et al.* 2007: 504).

Taking into consideration that I drew two separate, random samples, it would be beneficial to compare the responses of different sub-groups within the samples.

3.3.2.1 ONE-WAY ANOVA TEST

The one-way analysis of variance (ANOVA) uses the F-ratio in order to determine whether or not there is a statistical significant difference (in other words $p \leq 0.05$) between more than two groups of samples (Cohen, 2007: 547). “The F-ratio is the between group mean square (variance) divided by the within group mean square (variance)” (Cohen, 2007: 547).

When a statistically significant difference is calculated between the groups, this difference is not necessarily applicable to all the groups. In order to determine which groups have a statistically significant difference, a researcher has to make use of a variety of *post-hoc*

tests. These *post-hoc* tests include the Tukey, Scheffé, Dunnett's and Bonferonni tests (Cohen, 2007: 548; Seltman, 2009: 328).

For the purpose of this study, the Scheffé *post-hoc* test was applied to establish if there was a statistically significant difference between the groups.

3.3.2.2 THE STUDENT'S *T*-TEST

"The t-test is used to discover whether there are statistically significant differences between the means of two groups" (Cohen *et al.* 2007: 543). When the difference is statistically significant, the value of $p \leq 0.05$. Therefore the null-hypotheses can be rejected with a 95% certainty (Cohen *et al.* 2007: 543).

3.4 SUMMARY

It was imperative that both populations had an equal and fair opportunity to be selected to participate in this study. As I am staying in Bloemfontein, the selection of the Mangaung sample was more convenient and successful than the Busan sample. That the Busan sample was much smaller than the Mangaung sample was a concern to me, but I realise that this is part and parcel of field work, and was as good a sample as I could get.

The next chapter will summarise the results of the survey questionnaires.

CHAPTER 4: PERCEPTIONS OF TEACHERS AND PRINCIPALS FROM SOUTH AFRICA AND SOUTH KOREA

4.1 INTRODUCTION

In order to analyse and compare the perceptions of the participants from the two different samples, the previous two chapters included a literature review of teacher productivity, as well as a detailed description of the research methods used to gather the data for this study.

In this chapter, the results of the survey will be evaluated and summarised using descriptive and inferential statistics. The first section of this chapter will consider the responses in terms of each specific construct. The next section will compare the data using inferential statistics. The *t*-test and the one-way ANOVA test were utilised to compare the data so that statistical significance could be identified. The sub-groups from each sample will be compared according to gender, first choice of study, and age groups. Lastly, all the results will be summarised.

4.2 RESULTS OF SURVEY QUESTIONNAIRE

The results of the survey questionnaires were categorised according to different constructs. Each factor that relates to productivity was analysed after which the measurement of teacher productivity followed.

4.2.1 DESCRIPTIVE STATISTICS

Each of the 70 Likert scale items in the survey questionnaire were divided into the different constructs. The average of each response in the questionnaire was calculated for all the constructs. These averages are presented visually in the form of a bar chart. The responses of the samples were separated for Busan and Mangaung.

4.2.1.1 FACTORS RELATING TO TEACHER PRODUCTIVITY

In total, there were nine factors or constructs relating to teacher productivity (see section 2.2.2 to 2.2.10). The results were as follow:

a) Quality of teachers

Bearing in mind that the quality of teachers have a profound influence on learner outcomes, certain items in the survey referred to teacher quality.

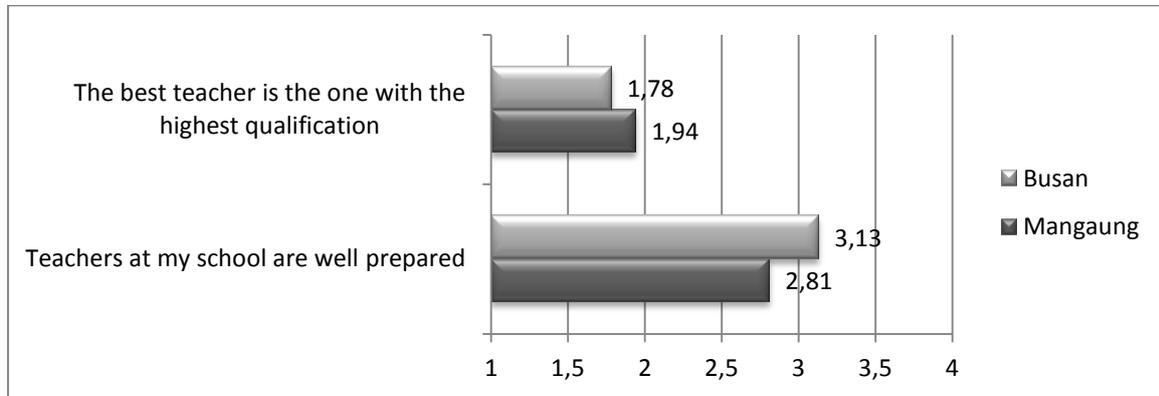


Figure 17: Perceptions on teacher quality

Respondents from both samples agreed that a teacher’s qualifications do not determine his or her effectiveness. However, there was a slight disparity between the perceptions of the respondents when it came to teacher preparation. Teachers from the Busan sample felt that the teachers at their schools are very well prepared.

b) Teacher aptitude

As previously mentioned, the quality of an education system is largely determined by the quality of its teachers. The perceptions of the participants regarding the importance of teacher aptitude is summarised below.

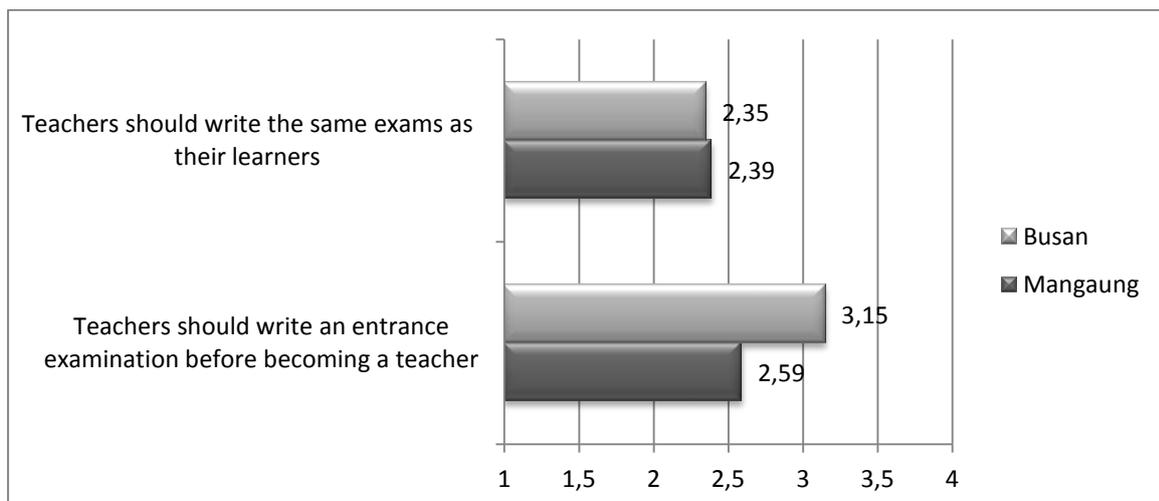


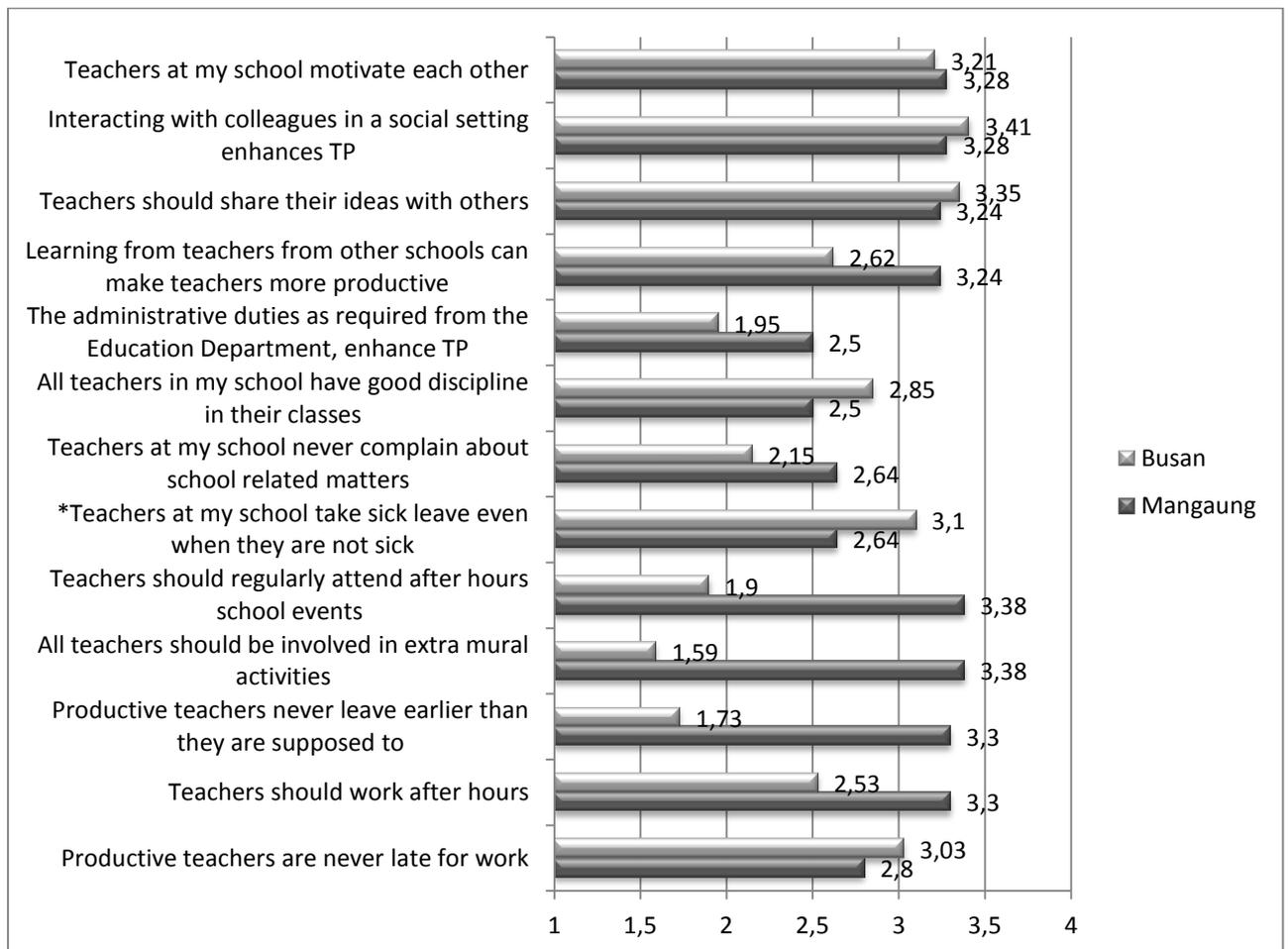
Figure 18: Perceptions on teacher aptitude

In terms of teacher aptitude, the respondents from both samples were quite neutral about whether or not teachers should write the same exams as their learners. The South African media is currently putting a lot of pressure on education policy makers to require teachers to write the same exams as their learners (see section 2.2.3).

Teachers from the Busan sample are in agreement that all teachers should write an entrance examination before becoming a teacher.

c) Teacher effectiveness

There is consensus amongst researchers that the effectiveness of teachers differ substantially (section 2.2.4). This could be due to many different factors which were explored as indicated in the subsequent bar chart.



*The responses for these statements were inverted to be in line with the rest of the statements.

Figure 19: Perceptions on teacher effectiveness

Participants from both samples agreed that the teachers at their schools motivate each other, that social interaction with their colleagues enhances teacher productivity, that teachers could share their ideas with others and that productive teachers are never late for work.

However, there were large discrepancies between the responses of the participants regarding after hours school responsibilities. The biggest discrepancy was regarding the opinions concerning extra mural activities and school events hosted after normal working hours. The participants from Busan felt that it is not necessary for teachers to be involved in extra mural activities or school events after hours.

Furthermore, participants from Mangaung agreed that productive teachers never leave earlier than they are supposed to, whereas participants from Busan did not agree.

d) Teacher experience

The literature indicated that teacher experience does not have a significant effect on learner outcomes (section 2.2.5). The perceptions of the participants in this regard were mostly in line with the traditional school of thought, in other words that experienced teachers are greatly valued.

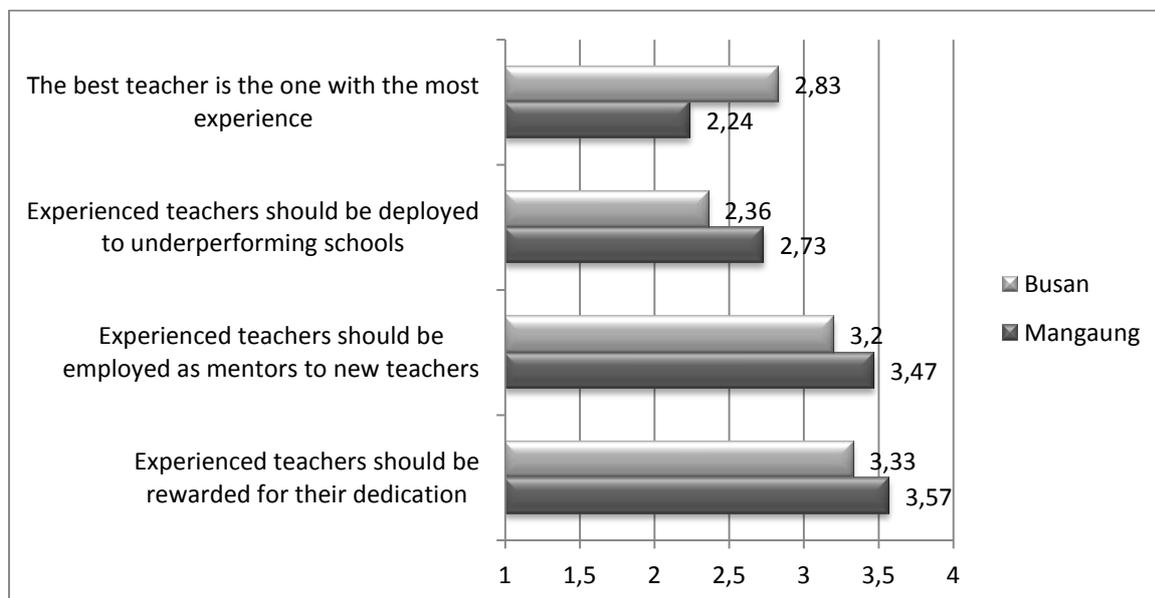


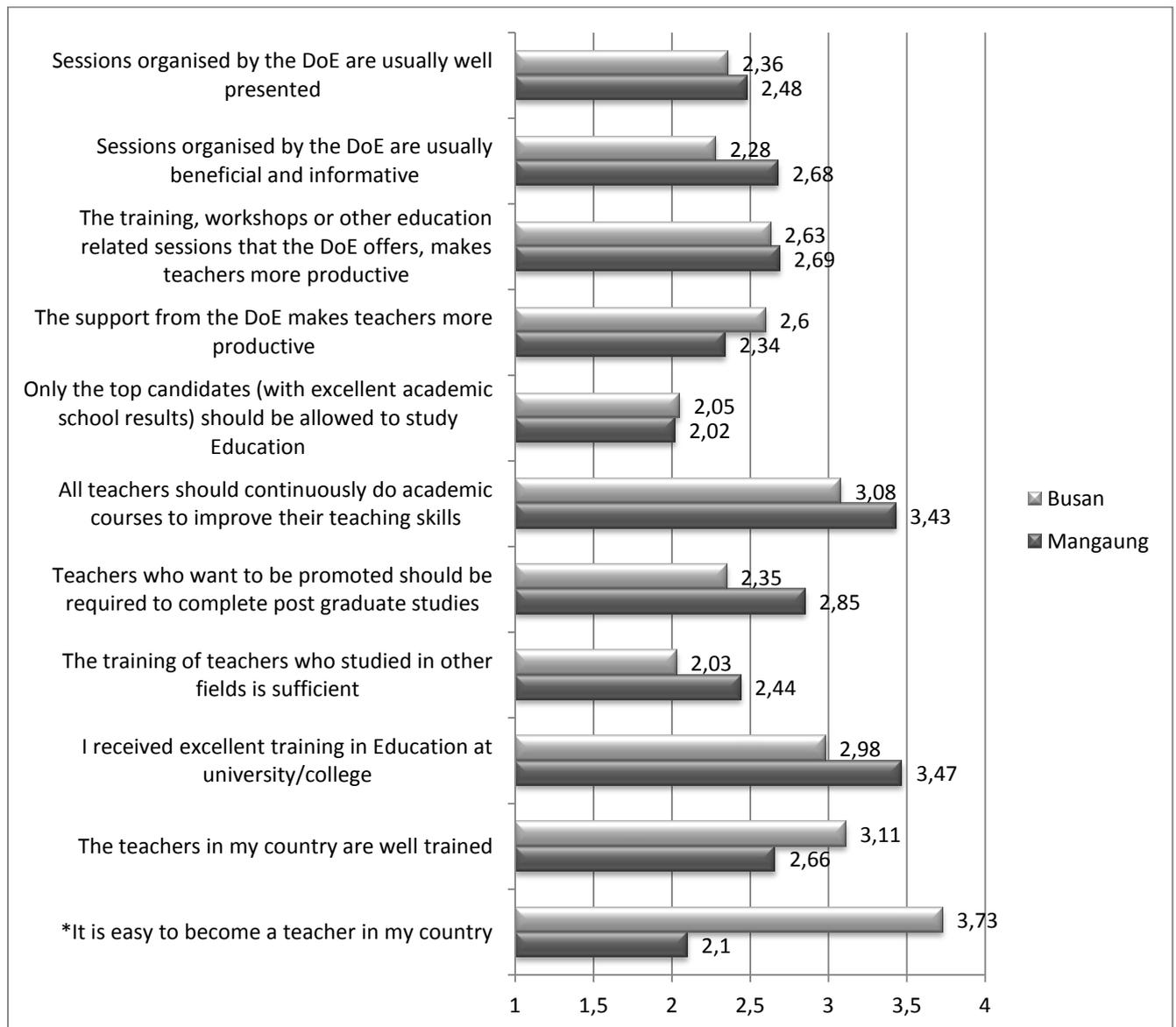
Figure 20: Perceptions on teacher experience

In terms of teacher experience, both samples strongly agreed that experienced teachers could mentor new teachers and that experienced teachers could be rewarded for their

dedication. The responses of the participants regarding the importance of teacher experience is in line with the literature, although the perceptions of both samples indicate a higher sense of value for teacher experience than teacher qualifications (see figure 4.1).

e) Recruitment and training of teachers

The recruitment, selection and training of teachers play a major role in determining the level of success of the education system of a country (2.2.6).



*The responses for these statements were inverted to be in line with the rest of the statements.

Figure 21: Perceptions on the recruitment and training of teachers

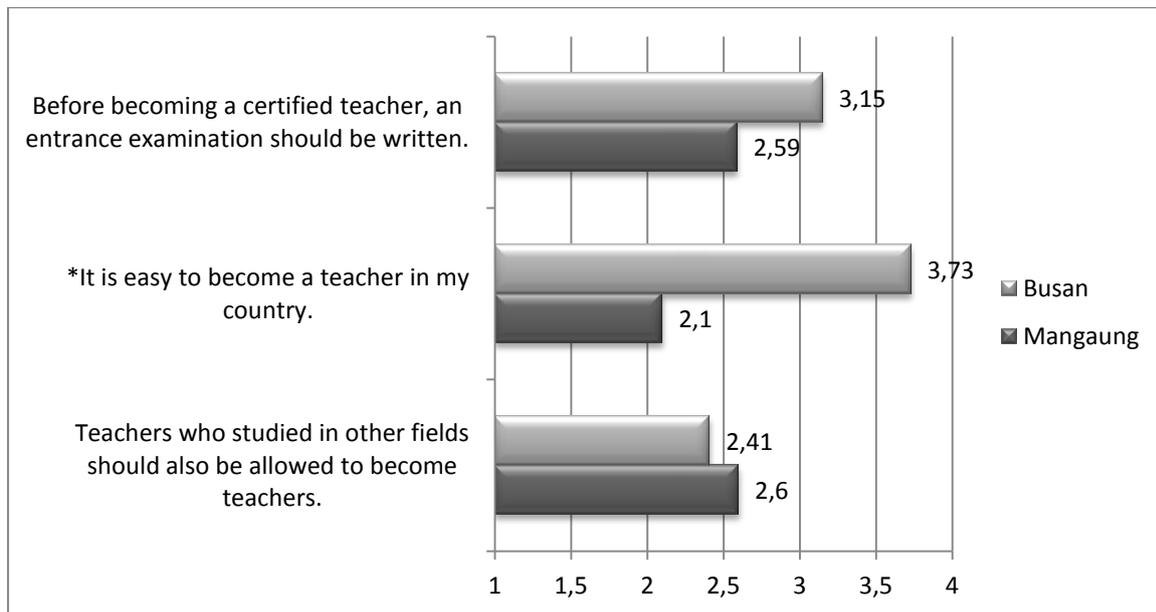
With regards to items on the questionnaire that related to the influence of the Department of Education on teacher productivity, both samples had analogous responses. In terms of

teacher recruitment, both samples had a neutral opinion when it came to allowing only top candidates to study education. The respondents from both samples mostly agreed that they received excellent training in education and that all teachers could continuously do academic courses to improve their teaching skills.

There was a significant difference in the responses of the samples when asked if it was easy to become a teacher in their country. Once again, the responses for this particular statement were inverted, therefore the average response of the Busan sample (3,73) actually indicates that the respondents strongly disagreed with the statement. This correlates with the literature review (sections 2.2.6 & 2.2.7.2). Conversely, the Mangaung sample had a neutral response to this statement, indicating that it is their opinion that it is not that difficult to become a teacher in South Africa.

f) Teacher certification

The certification of teachers is completely different for the two samples as mentioned in section 2.2.7. The perceptions of the teachers (as indicated below) confirmed this.



*The responses for these statements were inverted to be in line with the rest of the statements.

Figure 22: Perceptions on teacher certification

Teacher certification plays a pivotal role in ensuring the productivity of teachers. The Busan sample felt that all teachers could write an entrance examination before becoming a certified teacher. Both samples agreed that teachers who studied in fields other than education could also be allowed to become teachers.

g) Compensation and retention of teachers

The literature study (section 2.2.8.2) revealed that there is a major shortage of teachers in South Africa, while South Korea is experiencing the total opposite with an oversupply of high school teachers.

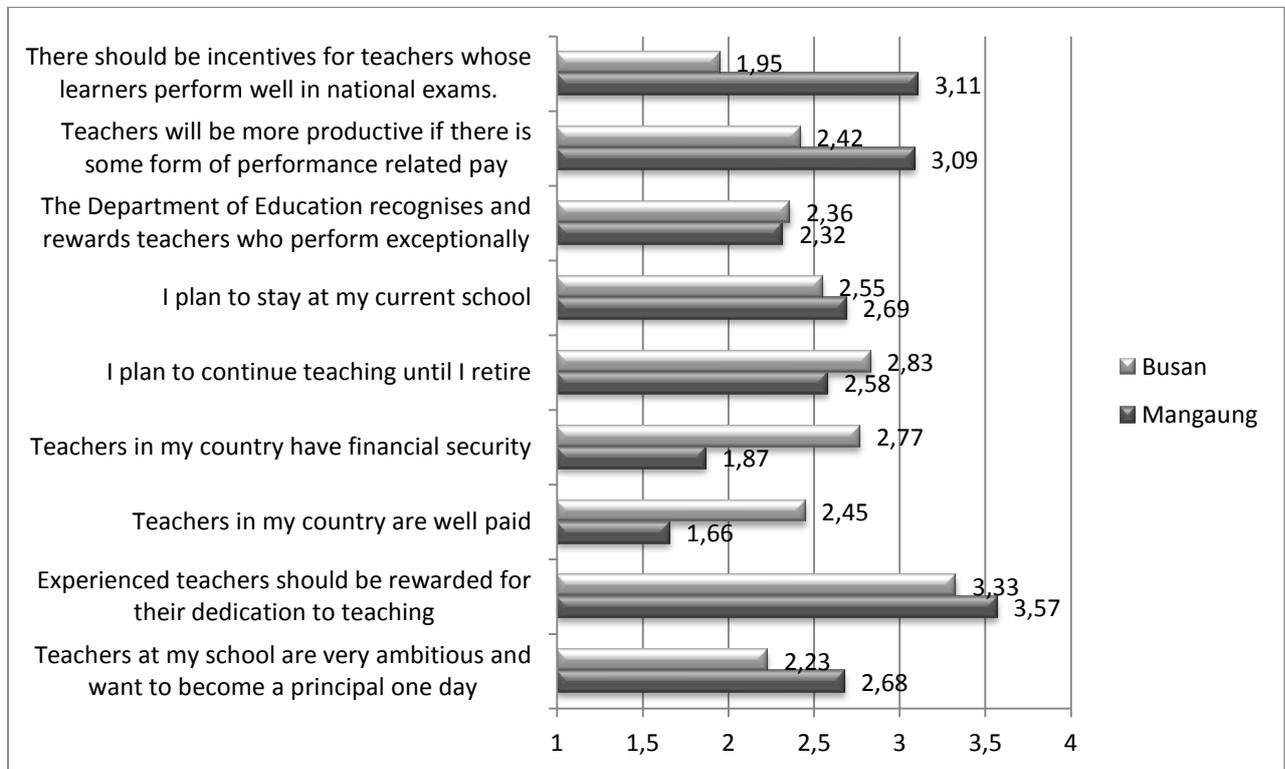


Figure 23: Perceptions on the compensation and retention of teachers

There is always enormous pressure on both teachers and learners when it comes to national learner assessments. The Mangaung sample strongly agreed that teachers could receive incentives or some form of performance-related remuneration if their learners do well in national exams, as opposed to the Busan sample who didn't respond as positively to these statements.

The perceptions of both samples were similar on many items in this section, but there was a significant difference when it came to statements regarding the remuneration of teachers in each country. Participants from Busan mostly agreed that they have financial security and that they are well paid, whereas teachers from Mangaung felt that they are not.

Both samples agreed that experienced teachers could be rewarded for their dedication to teaching.

h) Match quality

The reality is that many teachers are not satisfied with the schools where they teach. In South Korea, as mentioned before, teachers and principals are rotated between schools regularly (section 1.3), in order to try and maximise their productivity. Some teachers in South Africa stay at the same school for as much as 40 years (their entire teaching career). The figure below reflects the perceptions of the teachers in terms of match quality.

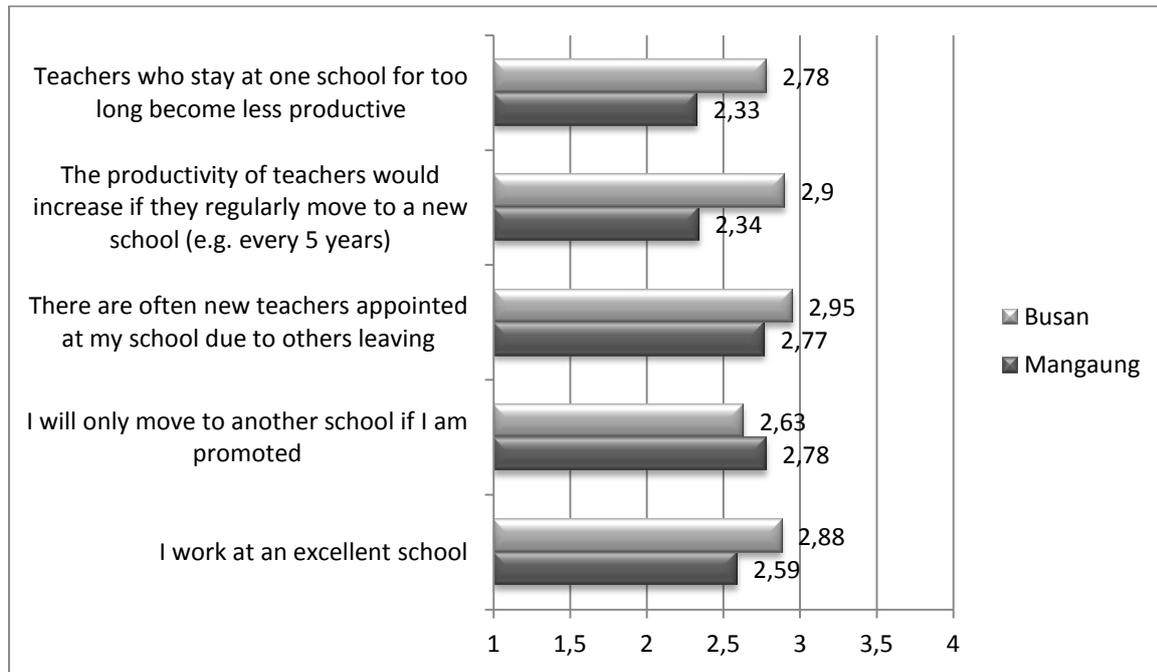


Figure 24: Perceptions on match quality

The responses in this section were very similar, with both samples mostly agreeing that they would go to another school only if they were promoted. They also agreed that they work at an excellent school and that there are often new teachers appointed at their schools due to others leaving. Participants from Busan responded stronger regarding the increase of teacher productivity when they are required to move to other schools regularly, as well as agreeing that teachers who spend too much time at one school become less productive.

i) Teacher status and professional identity

McKinsey and Company (2007: 30) found that the status of the teaching profession in a country is often the most important factor for becoming a teacher. The perceptions of the teachers regarding their status and identity is summarised below.

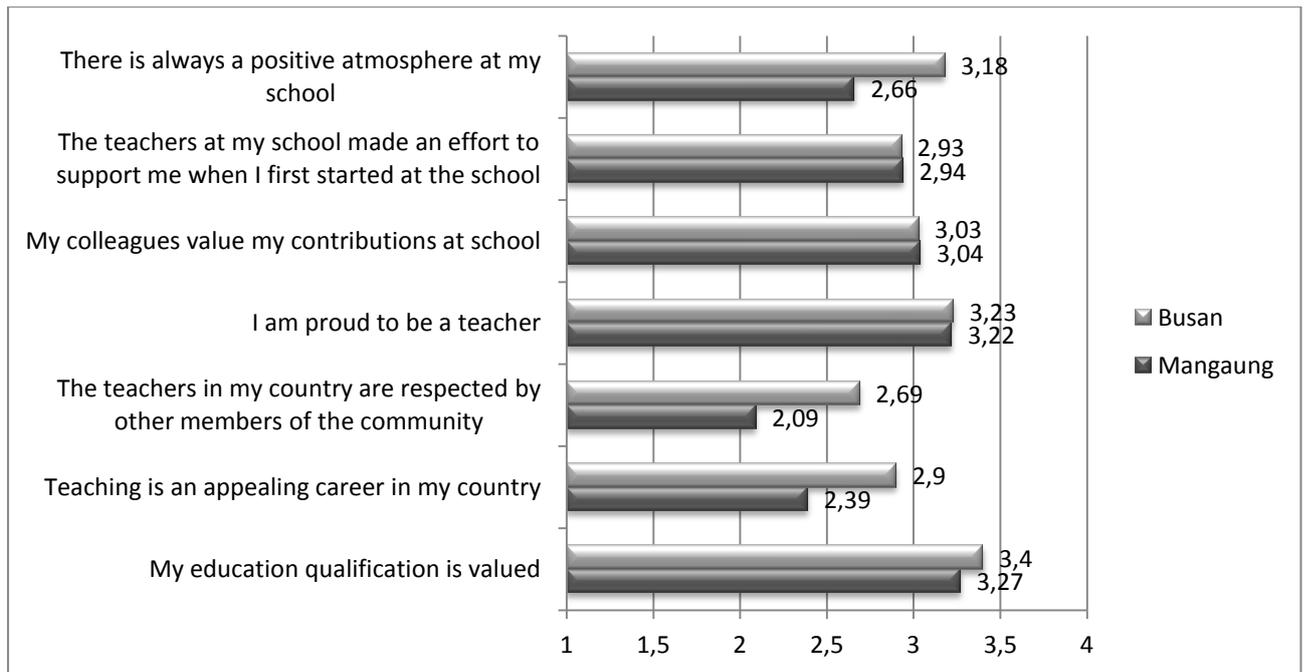


Figure 25: Perceptions on teacher status and professional identity

The samples were mostly in agreement with the statements regarding the perceptions on teacher status and professional identity. Both agreed that the teachers at their schools supported them when they first started at the school, that their colleagues value their contributions, that they are proud to be teachers and that their education qualification is valued.

There were however some differentiation in the responses regarding the perceptions of the two samples. The participants from Mangaung felt that teachers from their country are less respected by members of the community, that teaching is a less appealing career in their country and that the atmosphere at their school is not always positive.

4.2.1.2 MEASUREMENT OF TEACHER PRODUCTIVITY

By now it has been established that the measurement of teacher productivity is a daunting task (section 2.3). This section represents the perceptions of the participants in terms of possible systems or policies that could measure the productivity of teachers.

a) Teacher subject competency tests

The South African Department of Education has indicated during previous media briefings (see section 2.3.1) that they are considering that teachers should write the same national exam papers as their own learners.

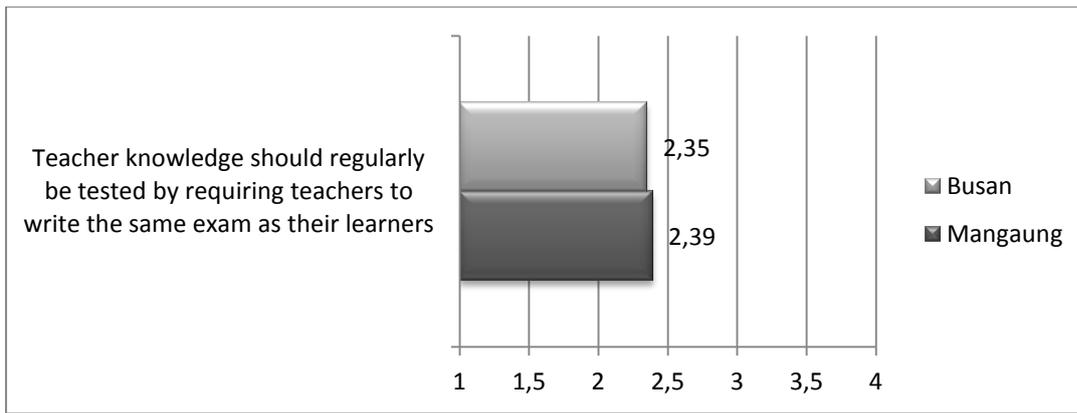


Figure 26: Teacher subject competency tests

The perceptions of the participants from Mangaung and Busan were identical, with both samples being very neutral with regards to teachers being required to regularly write the same exams as their learners.

b) The role of the principal

Good principals who manage their schools efficiently, will know their staff members well. It is therefore possible for them to assess the productivity of their staff. The subsequent figure represents the perceptions of the participants from Busan and Mangaung.

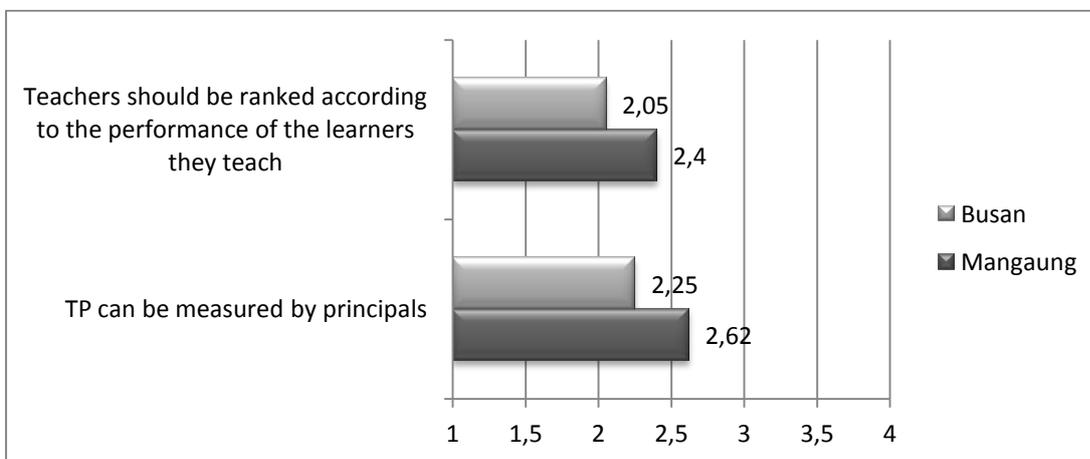


Figure 27: The role of the principal in measuring teacher productivity

Both samples did not feel that teachers could be ranked according to the performance of the learners, while participants from the Mangaung sample agreed more that teacher productivity could be measured by principals.

c) The role of the DoE in the measurement of teacher productivity

The DoE has a valuable role to play in the support, management and assessment of teacher productivity. As the employer, the DoE could continuously evaluate the systems that they have in place for the measurement of teacher productivity.

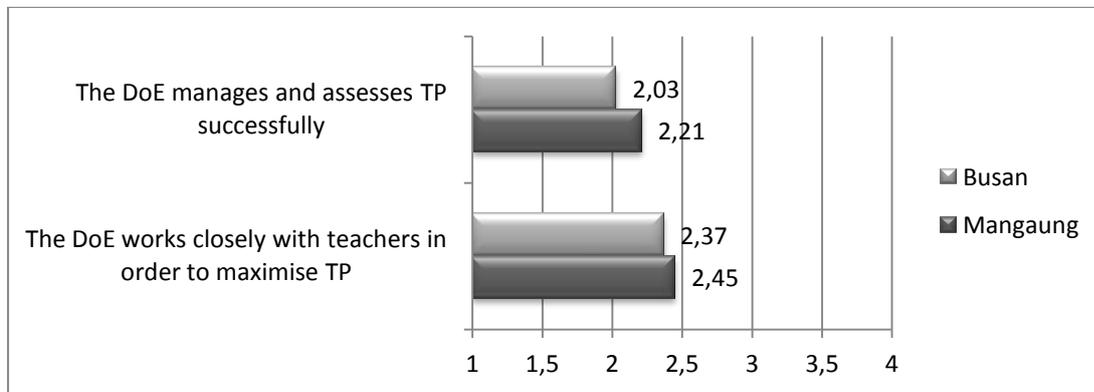


Figure 28: The role of the DoE in measuring teacher productivity

The perceptions of both samples were aligned, with both responding neutrally to the role of the DoE in measuring teacher productivity. Firstly, the samples were impartial with their perceptions that the DoE manages and assesses teacher productivity successfully, and secondly, there was some agreement that the DoE works closely with teachers in order to maximise teacher productivity.

d) Value-added models

As previously mentioned (in section 2.3.4), a comprehensive database is required to postulate teacher value adding. In other words, the results of learners in national exams could be used as a useful measure to determine teacher value adding.

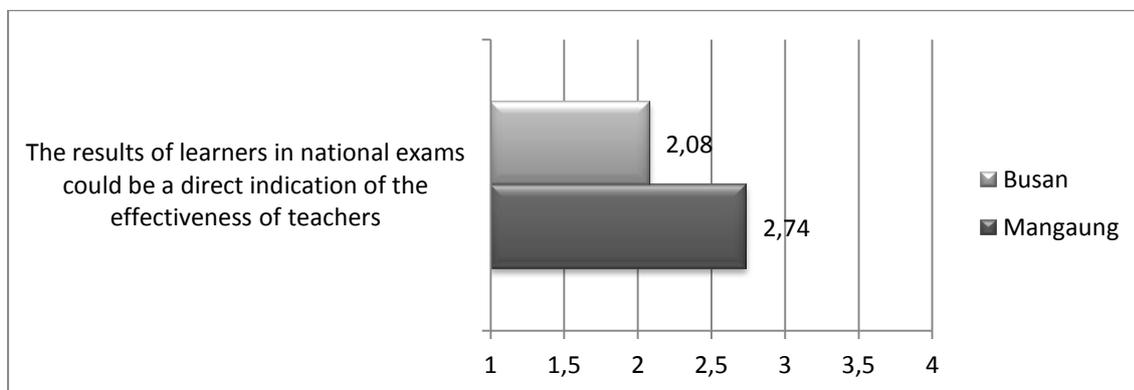


Figure 29: Value-added models in measuring teacher productivity

The responses of the Busan sample indicate that the participants were not in agreement that the results of learners in national exams might be a direct indication of the effectiveness of teachers. In contrast to this, the perceptions of the Mangaung sample was more positive.

4.2.2 COMPARING THE DATA

A thorough comparison of the data was done using inferential statistics. As mentioned in the previous section (3.3.2), inferential statistics allow for the exploration of differences between and amongst groups. Analysis was done per country according to (a) gender: South Africa, (b) gender: South Korea, (c) education as first choice of study: South Africa and (d) education as first choice of study: South Korea.

4.2.2.1 COMPARING THE RESULTS BY COUNTRY, GENDER AND CHOICE OF STUDY

a) Responses by country

As this study is comparative in nature, it was vital to compare the responses of the samples in terms of each construct.

Table 12: Comparison of the responses by country

Construct	South Korea – Busan (n = 40)		South Africa – Mangaung (n = 278)		t-value	p-value
	Mean \bar{x}	Standard deviation s	Mean \bar{x}	Standard deviation s		
Teacher effectiveness	2,5682	0,2279	2,9316 [#]	0,3667	8,6078	0,0000 [*]
Recruitment and training	2,6521	0,3045	2,6566 [#]	0,3896	0,0844	0,9330
Teacher quality	2,4500 [#]	0,4051	2,3759	0,5746	-1,0188	0,3121
Teacher status and identity	3,0506 [#]	0,2833	2,8052	0,5430	-4,4321	0,0000 [*]
Teacher certification	3,1083 [#]	0,3950	2,4320	0,4835	-9,8179	0,0000 [*]
Teacher compensation and retention	2,5444	0,3160	2,6152 [#]	0,4069	1,2717	0,2084

Construct	South Korea – Busan (n = 40)		South Africa – Mangaung (n = 278)		t-value	p-value
	Mean \bar{x}	Standard deviation <i>s</i>	Mean \bar{x}	Standard deviation <i>s</i>		
Teacher aptitude	2,7500 [#]	0,5064	2,4837	0,7901	-2,8597	0,0056 [*]
Teacher experience	2,9313	0,4385	3,0027 [#]	0,4993	0,9458	0,3484
Teacher match quality	2,8250 [#]	0,2362	2,5624	0,4530	-5,6801	0,0000 [*]
Role of DoE in the measurement of teacher productivity	2,2125	0,5761	2,3321 [#]	0,7145	1,1826	0,2417
Role of the principal in the measurement of teacher productivity	2,1500	0,6119	2,5057 [#]	0,7197	3,3438	0,0015 [*]
Value-added models in measuring teacher productivity	2,0769	0,7028	2,7443 [#]	0,9136	5,3006	0,0000 [*]
Teacher competency tests	2,3500	0,7355	2,3891 [#]	0,9578	0,3010	0,7644

Indicates the highest mean score per construct.

* Indicates the *p* value that is statistically significant on a 95% confidence level.

The Mangaung sample responded more positively with regards to most of the constructs. The Busan sample, however, was more positive regarding teacher quality, status and identity, certification, aptitude and match quality. A number of these differences were statistically significant. These differences included teacher effectiveness ($p = 0,0000$), teacher status and identity ($p = 0,0000$), teacher certification ($p = 0,0000$), teacher aptitude ($p = 0,0056$), teacher match quality ($p = 0,0000$), role of the principal in the measurement of teacher productivity ($p = 0,0015$), and value-added measures of teacher productivity ($p = 0,0000$).

b) Responses by gender (South Africa)

The responses from the different gender groups (for each country) are summarised below.

Table 13: Responses by gender (South Africa)

Construct	Female (n = 190)		Male (n = 81)		t-value	p-value
	Mean \bar{x}	Standard deviation s	Mean \bar{x}	Standard deviation s		
Teacher effectiveness	2,9207	0,3930	2,9358 [#]	0,2908	-0,3495	0,7271
Recruitment and training	2,6555 [#]	0,4060	2,6275	0,3378	0,5867	0,5582
Teacher quality	2,3632	0,5839	2,3704 [#]	0,5171	-0,1010	0,9196
Teacher status and identity	2,8198 [#]	0,5489	2,7599	0,5250	0,8476	0,3979
Teacher certification	2,4009	0,4736	2,5167 [#]	0,4894	-1,7922	0,0752
Teacher compensation and retention	2,6064	0,4102	2,6190 [#]	0,4046	-0,2343	0,8151
Teacher aptitude	2,4233	0,7619	2,6125 [#]	0,8228	-1,7618	0,0803
Teacher experience	2,9564	0,5102	3,0719 [#]	0,4521	-1,8422	0,0672
Teacher match quality	2,5649 [#]	0,4436	2,5431	0,4834	0,3460	0,7299
Role of the DoE in the measurement of teacher productivity	2,3258 [#]	0,72331	2,3000	0,6732	0,2786	0,7809
Role of the principal in the measurement of teacher productivity	2,5197 [#]	0,6731	2,4188	0,7973	0,9852	0,3263
Value-added models in measuring teacher productivity	2,6932	0,9053	2,8101 [#]	0,9347	-0,9328	0,3525
Teacher competency tests	2,3545	0,9261	2,4430 [#]	1,0222	-0,6643	0,5076

Indicates the highest mean score per construct.

The perceptions of female and male respondents from the Mangaung sample were basically identical across the spectrum of constructs. None of these minor differences were statistically significant.

c) Responses by gender (South Korea)

The perceptions of the male and female participants in South Korea were also compared.

Table 14: Responses by gender (South Korea)

Construct	Female (n = 30)		Male (n = 10)		t-value	p-value
	Mean \bar{x}	Standard deviation <i>s</i>	Mean \bar{x}	Standard deviation <i>s</i>		
Teacher effectiveness	2,5415	0,2401	2,6485 [#]	0,1721	-1,5326	0,1399
Recruitment and training	2,6088	0,3076	2,7818 [#]	0,2683	-1,7006	0,1067
Teacher quality	2,3500	0,3972	2,7500 [#]	0,2635	-3,6210	0,0014 [*]
Teacher status and identity	3,0437	0,2738	3,0714 [#]	0,3247	-0,2432	0,8115
Teacher certification	3,1000	0,3729	3,1333 [#]	0,4766	-0,2016	0,8434
Teacher compensation and retention	2.5051	0.3203	2,6625 [#]	0,2855	-1,4632	0,1615
Teacher aptitude	2,7000	0,4472	2,9000 [#]	0,6583	-0,8944	0,3888
Teacher experience	2,9667 [#]	0,4583	2,8250	0,3736	0,9785	0,3402
Teacher match quality	2,8133	0,2224	2,8600 [#]	0,2836	-0,4740	0,6434
Role of the DoE in the measurement of teacher productivity	2,1833	0,6086	2,3000 [#]	0,4831	-0,6176	0,5440
Role of the principal in the measurement of teacher productivity	2,0500	0,5776	2,4500 [#]	0,6433	-1,7456	0,1025
Value-added models in measuring teacher productivity	1,9310	0,6509	2,5000 [#]	0,7071	-2,2384	0,0412 [*]
Teacher competency tests	2,2333	0,7279	2,7000 [#]	0,6750	-1,856	0,0813

Indicates the highest mean score per construct.

* Indicates the *p* value that is statistically significant on a 95% confidence level.

The male respondents from the Busan sample responded more positively than the female respondents on all but one construct, namely teacher experience. Even though the responses by the males in the Busan sample were more positive, only two of these were statistically significant. These included teacher qualification ($p = 0,0014$) and value-added measures of teacher productivity ($p = 0,0412$).

d) Responses by first choice of study (South Africa)

Almost 48% of the South African participants indicated that education was not their first choice of study (see table 8).

Table 15: Responses by first choice of study (South Africa)

Construct	Education NOT as first choice of study (n = 133)		Education as first choice of study (n = 143)		t-value	p-value
	Mean \bar{x}	Standard deviation <i>s</i>	Mean \bar{x}	Standard deviation <i>s</i>		
Teacher effectiveness	2,8735	0,3398	2,9875 [#]	0,3802	-2,6311	0,0090 [*]
Recruitment and training	2,6436	0,3735	2,6678 [#]	0,4076	-0,5162	0,6061
Teacher quality	2,3008	0,5110	2,4336 [#]	0,6116	-1,9627	0,0507
Teacher status and identity	2,7290	0,5359	2,8793 [#]	0,5379	-2,3233	0,0209 [*]
Teacher certification	2,4937 [#]	0,4556	2,3811	0,5041	1,945	0,0528
Teacher compensation and retention	2,5911	0,3936	2,6465 [#]	0,4073	-1,1487	0,2517
Teacher aptitude	2,5000 [#]	0,8173	2,4824	0,7636	0,1839	0,8542
Teacher experience	3,0657 [#]	0,4955	2,9583	0,4879	1,8047	0,0722
Teacher match quality	2,5835 [#]	0,4537	2,5479	0,4519	0,6497	0,5164
Role of the DoE in the measurement of teacher productivity	2,3095	0,6568	2,3577 [#]	0,7668	-0,5480	0,5841
Role of the principal in the measurement of teacher productivity	2,4841	0,6984	2,5329 [#]	0,7332	-0,5518	0,5815
Value-added models in measuring teacher productivity	2,7984 [#]	0,9369	2,6934	0,8958	0,9228	0,357
Teacher competency tests	2,3588	0,9613	2,4366 [#]	0,9488	-0,6726	0,5018

Indicates the highest mean score per construct.

* Indicates the p value that is statistically significant on a 95% confidence level.

The responses of the participants who studied education as their first choice were very similar to the responses of the participants who did not study education as their first choice. While the participants who studied education as their first choice responded more

positively, only two of these were statistically significant. These were teacher effectiveness ($p = 0,009$) and teacher status and identity ($p = 0,0209$).

e) Responses by first choice of study (South Korea)

Teaching is a very appealing and competitive career choice in South Korea. With this in mind, it was intriguing to compare the results of the South Korean teachers who wanted to study education as their first choice with those who did not.

Table 16: Responses by first choice of study (South Korea)

Construct	Education NOT first choice of study (n = 6)		Education first choice of study (n = 34)		t-value	p-value
	Mean \bar{x}	Standard deviation s	Mean \bar{x}	Standard deviation s		
Teacher effectiveness	2,6998 [#]	0,1374	2,5450	0,2341	2,2439	0,0464*
Recruitment and training	2,7576 [#]	0,2484	2,6334	0,3128	1,0822	0,3104
Teacher quality	2,5000 [#]	0,4472	2,4412	0,4039	0,3012	0,7726
Teacher status and identity	3,0476	0,3216	3,0511 [#]	0,2814	-0,025	0,9808
Teacher certification	3,2778 [#]	0,3277	3,0784	0,4025	1,3241	0,2240
Teacher compensation and retention	2,7222 [#]	0,4202	2,5131	0,2907	1,1708	0,2870
Teacher aptitude	2,8333 [#]	0,5164	2,7353	0,5110	0,4294	0,6808
Teacher experience	3,1250 [#]	0,6471	2,8971	0,3947	0,8358	0,437
Teacher match quality	2,7667	0,2658	2,8353 [#]	0,2334	-0,5933	0,5732
Role of the DoE in the measurement of teacher productivity	2,4167 [#]	0,5845	2,1765	0,5758	0,9301	0,3840
Role of the principal in the measurement of teacher productivity	2,0833	0,4916	2,1618 [#]	0,6363	-0,3433	0,7399

Construct	Education NOT first choice of study (n = 6)		Education first choice of study (n = 34)		t-value	p-value
	Mean \bar{x}	Standard deviation s	Mean \bar{x}	Standard deviation s		
Value-added models in measuring teacher productivity	2,1667 [#]	0,7528	2,0606	0,7044	0,3205	0,7583
Teacher competency tests	2,6667 [#]	1,0328	2,2941	0,6788	0,8520	0,4281

Indicates the highest mean score per construct.

* Indicates the p value that is statistically significant on a 95% confidence level.

In Busan, 85% indicated that education was their first choice of study (see table 10). Even though the group who indicated that education was not their first choice of study was much smaller, these participants responded more positively on 10 out of the 13 constructs. However, only one of these were statistically significant, namely teacher effectiveness ($p = 0,0464$).

4.2.2.2 COMPARING THE DATA BY AGE GROUPS

The one-way ANOVA test was done to determine the significance of the responses within the groups of the sample. The results were analysed according to age group: South Africa (a) and age group: South Korea (b).

a) Responses by age groups (South Africa)

Considering that the ages of the participants varied so much (from teachers in their 20's to teachers over the age of 60), it should be expected that the perceptions of new teachers and experienced teachers would differ considerably.

The results of each of the constructs were summarised in the table below.

Table 17: Comparing the age groups (Mangaung sample)

Age group (in years)	Teacher effectiveness				
	n	\bar{x}	S	F	p
20 – 29	38	2,9543	0,3342	0,4700	0,7593
30 – 39	42	2,9110	0,2863		
40 – 49	113	2,9031	0,3916		
50 – 59	75	2,9674	0,3937		
60+	10	2,9846 [#]	0,3073		
Combined	278	2,9316	0,3667		
Age group (in years)	Teacher recruitment and training				
	n	\bar{x}	S	F	p
20 – 29	38	2,6639	0,4980	0,2700	0,9001
30 – 39	42	2,6449	0,4172		
40 – 49	113	2,6644 [#]	0,3577		
50 – 59	75	2,6635	0,3795		
60+	10	2,5364	0,2552		
Combined	278	2,6566	0,3896		
Age group (in years)	Teacher quality				
	n	\bar{x}	S	F	p
20 – 29	38	2,3947 [#]	0,5347	0,1300	0,9732
30 – 39	42	2,3929	0,5689		
40 – 49	113	2,3894	0,5659		
50 – 59	75	2,3467	0,6150		
60+	10	2,3000	0,6325		
Combined	278	2,3759	0,5746		

Age group (in years)	Teacher status and identity				
	n	\bar{x}	S	F	p
20 – 29	38	2,9357	0,5156	1,6900	0,1530
30 – 39	42	2,8962	0,4998		
40 – 49	113	2,7276	0,5514		
50 – 59	75	2,7833	0,5773		
60+	10	2,9667 [#]	0,3191		
Combined	278	2,8052	0,5430		
Age group (in years)	Teacher certification				
	n	\bar{x}	S	F	p
20 – 29	37	2,5946 [#]	0,3156	2,3200	0,0570
30 – 39	42	2,5278	0,4416		
40 – 49	113	2,4115	0,5074		
50 – 59	75	2,3467	0,5036		
60+	10	2,3000	0,5973		
Combined	277	2,4301	0,4835		
Age group (in years)	Teacher compensation and retention				
	n	\bar{x}	S	F	P
20 – 29	38	2,6572	0,4935	2,5700	0,0385 [*]
30 – 39	42	2,5549	0,3900		
40 – 49	113	2,5495	0,4078		
50 – 59	75	2,6990	0,3539		
60+	10	2,8222 [#]	0,3443		
Combined	278	2,6152	0,4069		

Age group (in years)	Teacher aptitude				
	n	\bar{x}	S	F	P
20 – 29	37	3,0000 [#]	0,5774	8,8700	0,0000 [*]
30 – 39	42	2,7500	0,8283		
40 – 49	112	2,3661	0,7855		
50 – 59	75	2,4400	0,7164		
60+	10	2,5500	0,7620		
Combined	276	2,4837	0,7901		
Age group (in years)	Teacher experience				
	n	\bar{x}	S	F	P
20 – 29	37	2,8311	0,4310	1,5900	0,1774
30 – 39	42	3,0734	0,5038		
40 – 49	112	3,0424	0,4862		
50 – 59	75	2,9789	0,5345		
60+	10	3,0750 [#]	0,5277		
Combined	276	3,0027	0,4993		
Age group (in years)	Teacher match quality				
	n	\bar{x}	S	F	P
20 – 29	37	2,6649 [#]	0,4499	1,7000	0,1494
30 – 39	42	2,5762	0,49030		
40 – 49	112	2,5055	0,4517		
50 – 59	75	2,6160	0,4348		
60+	10	2,3600	0,3748		
Combined	276	2,5624	0,4530		

Age group (in years)	Role of the DoE in the measurement of teacher productivity				
	n	\bar{x}	S	F	P
20 – 29	36	2,4306 [#]	0,7760	1,2400	0,2953
30 – 39	40	2,3375	0,8726		
40 – 49	107	2,2664	0,6078		
50 – 59	72	2,4236	0,7490		
60+	10	2,0000	0,5271		
Combined	265	2,3321	0,7145		
Age group (in years)	Role of the principal in the measurement of teacher productivity				
	n	\bar{x}	S	F	P
20 – 29	36	2,5833 [#]	0,7221	0,6100	0,6538
30 – 39	40	2,3875	0,6933		
40 – 49	107	2,4720	0,7519		
50 – 59	72	2,5764	0,6954		
60+	10	2,5500	0,6852		
Combined	265	2,5057	0,7197		
Age group (in years)	Value-added models in measuring teacher productivity				
	n	\bar{x}	S	F	P
20 – 29	35	2,2857	0,8935	3,2400	0,0128 [*]
30 – 39	40	2,7250	0,9334		
40 – 49	106	2,8774 [#]	0,9330		
50 – 59	72	2,8194	0,8446		
60+	9	2,4444	0,7265		
Combined	262	2,7443	0,9136		

Age group (in years)	Teacher competency tests				
	n	\bar{x}	S	F	P
20 – 29	37	2,9460 [#]	0,8147	7,7300	0,0000 [*]
30 – 39	42	2,6667	0,9542		
40 – 49	112	2,0804	0,9313		
50 – 59	74	2,3919	0,8730		
60+	10	2,6000	1,1738		
Combined	275	2,3891	0,9578		

Indicates the highest mean score per construct.

* Indicates the p value that is statistically significant on a 95% confidence level.

The one-way ANOVA test revealed that there were statistically significant differences in the responses of the members of the different age groups in terms of teacher compensation and retention ($p = 0,0385$), teacher aptitude ($p = 0,0000$), value-added measures of teacher productivity ($p = 0,0128$) and teacher competency tests ($p = 0,0000$). However, the Scheffe *post-hoc* test indicated that the differences between the age groups of the Mangaung sample was not statistically significant for the responses regarding teacher compensation and retention.

In contrast with this, the Scheffe *post-hoc* test revealed that there was a statistically significant difference ($p = 0,0000$) with reference to the responses of the 20 – 29 year age group ($\bar{x} = 3$) and the 40 – 49 year age group ($\bar{x} = 2,36607$) regarding teacher aptitude. There was also a statistically significant difference ($p = 0,0070$) between the responses of the 30 – 39 year age group ($\bar{x} = 2,75$) and the 40 – 49 year age group ($\bar{x} = 2,36607$) for the teacher aptitude construct, as well as a statistically significant difference ($p = 0,0090$) between the 20 – 29 year age group ($\bar{x} = 3$) and the 50 – 59 year age group ($\bar{x} = 2,44$).

In terms of the value-added measures of teacher productivity construct, the only statistically significant difference ($p = 0,0240$) was between the 20 – 29 year age group ($\bar{x} = 2,28571$) and the 40 – 49 year age group ($\bar{x} = 2,87736$).

Lastly, considering the responses of the participants for the teacher competency tests construct, there was a statistically significant difference ($p = 0,0000$) between the 20 – 29 year age group ($\bar{x} = 2,94595$) and the 40 – 49 year age group ($\bar{x} = 2,08036$), as well as

between the responses of the 30 – 39 year age group ($\bar{x} = 2,75$) and the 40 – 49 year age group ($\bar{x} = 2,66667$), with a 98,5% ($p = 0,0150$) confidence level.

b) Responses by age groups (South Korea)

As mentioned in section 2.2.7.2, the path to becoming a certified teacher in South Korea is not always easy. It is especially difficult for young South Korean teachers to start their career in education due to the competitiveness of the profession. It was therefore very valuable to compare the perceptions of the younger teachers with that of the more experienced teachers.

The results of each of the constructs were summarised in the table below.

Table 18: Comparing the age groups (Busan sample)

Age group (in years)	Teacher effectiveness				
	n	\bar{x}	S	F	P
20 – 29	2	2,5000	0,4895	0,0170	0,9522
30 – 39	14	2,5559	0,2698		
40 – 49	7	2,6154	0,1332		
50 – 59	16	2,6060	0,2859		
60+	2	2,6539 [#]	0,2720		
Combined	41	2,5876	0,2501		
Age group (in years)	Teacher recruitment and training				
	n	\bar{x}	S	F	P
20 – 29	2	2,7273	0,2571	1,2900	0,2918
30 – 39	14	2,7533	0,2152		
40 – 49	7	2,5649	0,3025		
50 – 59	15	2,5558	0,3642		
60+	2	2,8955 [#]	0,2764		
Combined	40	2,6521	0,3045		

Age group (in years)	Teacher quality				
	n	\bar{x}	S	F	P
20 – 29	2	2,2500	0,3536	0,8400	0,5103
30 – 39	14	2,5714 [#]	0,4322		
40 – 49	7	2,2857	0,3934		
50 – 59	15	2,4667	0,3994		
60+	2	2,2500	0,3536		
Combined	40	2,4500	0,4051		
Age group (in years)	Teacher status and identity				
	n	\bar{x}	S	F	P
20 – 29	2	3,2143	0,1010	4,7900	0,0035*
30 – 39	14	3,1531	0,2990		
40 – 49	7	2,8980	0,1972		
50 – 59	15	2,9349	0,2029		
60+	2	3,5714 [#]	0,2020		
Combined	40	3,0506	0,2833		
Age group (in years)	Teacher certification				
	n	\bar{x}	S	F	P
20 – 29	2	2,8333	0,2357	0,7500	0,5678
30 – 39	14	3,0238	0,3804		
40 – 49	7	3,1429	0,5395		
50 – 59	15	3,2222 [#]	0,3709		
60+	2	3,0000	0,0000		
Combined	40	3,1083	0,3951		

Age group (in years)	Teacher compensation and retention				
	n	\bar{x}	S	F	P
20 – 29	2	2,3889	0,2357	1,0200	0,4109
30 – 39	14	2,6419	0,3269		
40 – 49	7	2,3968	0,2388		
50 – 59	15	2,5194	0,3481		
60+	2	2,7222 [#]	0,0786		
Combined	40	2,5444	0,3160		
Age group (in years)	Teacher aptitude				
	n	\bar{x}	S	F	P
20 – 29	2	3,2500 [#]	0,3536	1,6700	0,1791
30 – 39	14	2,8571	0,4973		
40 – 49	7	2,5000	0,2887		
50 – 59	15	2,7667	0,5627		
60+	2	2,2500	0,3536		
Combined	40	2,7500	0,5064		
Age group (in years)	Teacher experience				
	n	\bar{x}	S	F	P
20 – 29	2	3,2500 [#]	0,7071	0,5600	0,6922
30 – 39	14	2,9821	0,4648		
40 – 49	7	2,8929	0,5373		
50 – 59	15	2,9000	0,3756		
60+	2	2,6250	0,1798		
Combined	40	2,9313	0,4385		

Age group (in years)	Teacher match quality				
	n	\bar{x}	S	F	P
20 – 29	2	3,0000 [#]	0,2828	0,3700	0,8304
30 – 39	14	2,7857	0,2879		
40 – 49	7	2,8286	0,2138		
50 – 59	15	2,8400	0,2028		
60+	2	2,8000	0,2828		
Combined	40	2,8250	0,2362		
Age group (in years)	Role of the DoE in the measurement of teacher productivity				
	n	\bar{x}	S	F	P
20 – 29	2	2,0000	0,0000	1,6000	0,1973
30 – 39	14	2,5000 [#]	0,4804		
40 – 49	7	1,9286	0,6726		
50 – 59	15	2,1333	0,5815		
60+	2	2,0000	0,7071		
Combined	40	2,2125	0,5761		
Age group (in years)	Role of the principal in the measurement of teacher productivity				
	n	\bar{x}	S	F	P
20 – 29	2	2,0000	0,0000	0,5500	0,7004
30 – 39	14	2,1071	0,5609		
40 – 49	7	1,9286	0,6726		
50 – 59	15	2,2667	0,6779		
60+	2	2,5000 [#]	0,7071		
Combined	40	2,1500	0,6119		

Age group (in years)	Value-added models in measuring teacher productivity				
	n	\bar{x}	S	F	P
20 – 29	2	2,0000	0,0000	1,3000	0,2910
30 – 39	14	2,1429	0,6630		
40 – 49	7	1,5714	0,5345		
50 – 59	14	2,2143	0,8018		
60+	2	2,5000 [#]	0,7071		
Combined	39	2,0769	0,7028		
Age group (in years)	Teacher competency tests				
	n	\bar{x}	S	F	P
20 – 29	2	3,0000 [#]	0,0000	2,1100	0,1007
30 – 39	14	2,6429	0,7450		
40 – 49	7	1,8571	0,3780		
50 – 59	15	2,2667	0,7988		
60+	2	2,0000	0,0000		
Combined	40	2,3500	0,7355		

Indicates the highest mean score per construct.

* Indicates the p value that is statistically significant on a 95% confidence level.

After running the one-way ANOVA test on the data of the Busan respondents, it was revealed that there was only a statistically significant difference in the responses of the members of the different age groups in terms of teacher status and identity ($p = 0,0035$).

The Scheffe *post-hoc* test confirmed that the differences between the age groups of the Busan sample was statistically significant for the responses regarding teacher status and identity.

There was a statistically significant difference ($p = 0,029$) between the responses of the 40 – 49 year age group ($\bar{x} = 2,898$) and the 60+ year age group ($\bar{x} = 3,57143$), as well as between the responses of the 50 – 59 year age group ($\bar{x} = 2,93492$) and the 60+ year age group ($\bar{x} = 3,57143$), with a 97,2% ($p = 0,028$) confidence level.

4.3 DISCUSSION

The purpose of the survey questionnaire was to investigate the perceptions of teachers (and principals) in Mangaung and Busan regarding teacher productivity. These perceptions would be vital in understanding which factors contribute to teacher productivity and what the realities are of teacher productivity amongst teachers (as well as principals) in Mangaung and Busan.

The development of the items in the questionnaire was divided into 13 different constructs. Nine of these covered factors that relate to teacher productivity and the other four explored the measurement of teacher productivity. The constructs relating to teacher productivity included teacher effectiveness, recruitment and training, teacher quality, teacher status and identity, teacher certification, teacher compensation and retention, teacher aptitude, teacher experience and teacher match quality. The constructs relating to the measurement of teacher productivity included the role of the DoE in the measurement of teacher productivity, the role of the principal in the measurement of teacher productivity, value-added measures of teacher productivity and teacher competency tests.

In terms of the quality of teachers, the respondents from Busan responded marginally more positive than the Mangaung respondents. Both samples agreed that the best teacher is not necessarily the one with the highest qualification. The perceptions of the respondents here were in accordance with the literature (2.2.7).

The perceptions of the respondents were more positive regarding teacher aptitude. Due to the fact that all teachers in South Korea are required to write an entrance examination before becoming a teacher, the responses were considerably more positive from the Busan sample. However, both samples felt less positive concerning the issue of teachers being required to write the same exams as their learners.

The respondents from Mangaung were much more positive than the Busan sample when teacher effectiveness was considered. The major discrepancies were amongst the survey items relating to work that teachers are often required to do after normal working hours. The opinions of the Mangaung respondents indicated that being involved in extra-mural activities or after hours school events were part of their job. The Busan respondents responded more negative here.

The responses of both samples were very positive in terms of teacher experience. Both samples indicated that experienced teachers are very valuable in serving as mentors to beginner teachers. The Mangaung respondents were more positive about the possibility of deploying experienced teachers to underperforming schools, whereas both samples agreed that experienced teachers could be rewarded for their dedication to teaching. The responses of both samples were more positive with regards to experienced teachers being the best teachers, rather than the teachers with the highest qualifications.

In terms of teacher recruitment and training, various responses from both samples were quite neutral. The participants from both Busan and Mangaung responded positively with regards to the involvement of the DoE in making teachers more productive. The samples were in agreement that aspiring teachers could not be selected only from top academic school achievers. The participants from Busan as well as Mangaung agreed that all teachers could continuously attend academic courses and that they received excellent training at university/college. However, neither sample was very positive about the training that teachers who studied in other fields received. The Busan respondents were more positive that the teachers in their country are well trained. Furthermore, the most significant divergence in the samples was that the Busan respondents felt that it is very difficult to become a teacher in their country, as opposed to the Mangaung participants responding more neutrally.

With regards to the perceptions of the samples on teacher certification, the responses from the Busan sample were more positive regarding teachers who must write an entrance examination before being certified as a teacher. Conversely, both samples agreed that prospective teachers who studied in other fields must also be allowed to become teachers.

The responses of the participants from both samples were inconsistent regarding items on the questionnaire that involved the compensation and retention of teachers. The Mangaung participants responded more positively towards items relating to incentives or performance-related pay programs. In contrast to this, the respondents from the Busan sample felt that they had financial security and that the teachers in their country are paid well. Furthermore, the participants from both samples felt that they are planning to teach until they retire, that they plan to stay at their current schools, and all participants strongly agreed that experienced teachers could be rewarded for their dedication to teaching.

The participants from both countries responded positively towards items relating to match quality. However, participants from Busan responded stronger regarding teachers who become less productive when they stay at one school for too long. They also agreed that teachers would become more productive if they were moved to other schools more regularly. The responses from both samples also indicated that many schools are experiencing a high teacher turnover rate.

It was very clear that both samples had strong opinions regarding teacher status and professional identity. Participants from both Busan and Mangaung agreed that their contributions at school are valued by their colleagues, that their education qualifications are valued, that they were supported by other teachers at their school when they first started and that they are proud to be a teacher. In contrast to this, participants from Mangaung felt that teachers in their country are not respected all that much by members of their communities and that teaching is not very appealing as a career.

As mentioned previously, the measurement of the productivity of teachers is very complicated. The responses from the Mangaung participants were more positive for all the constructs involving the measurement of teacher productivity.

Firstly, both samples agreed that teacher knowledge could regularly be tested by requiring teachers to write the same exams as their own learners. Secondly, the Busan participants indicated that they do not believe that teachers could be ranked according to the performance of their learners, or that principals would be able to measure teacher productivity. Next, the responses from both countries pointed towards a disbelief that the DoE successfully manages and assesses teacher productivity. Lastly, there was a disparity amongst the responses of the samples regarding value-added models of teacher productivity. The Mangaung sample felt that the results of learners are a direct indication of the effectiveness of teachers.

4.4 SUMMARY OF RESULTS

Factors relating to the productivity of teachers		
Construct	Findings	Reference
Quality of teachers	The South Korean respondents were slightly more positive than the South African respondents.	4.2.2.1 (a)

Quality of teachers	The responses of the male and female participants from South Africa were identical, while the males from South Korea responded more positive than the females from that country.	4.2.2.1 (b) 4.2.2.1 (c)
	Respondents from South Africa whose first choice of study was education were more positive. However, the participants from South Korea whose first choice of study was NOT education, were more positive.	4.2.2.1 (d) 4.2.2.1 (e)
	All the age groups in South Africa had similar responses. The 20 to 29 year old and the 60+ year old age groups from South Korea were the least positive, while the 30 to 39 year old age group was the most positive.	4.2.2.2 (a) 4.2.2.2 (b)
Teacher aptitude	There was a statistically significant difference between the responses of the two countries, with the Busan participants responding more positively.	4.2.2.1 (a)
	The male respondents from the Mangaung sample were more positive than the females, whereas the males from Busan responded more positively than their female counterparts.	4.2.2.1 (b) 4.2.2.1 (c)
	The responses of the participants in South Africa who indicated that education was their first choice of study, were very similar to the group whose first choice of study was NOT education. In South Korea, the respondents whose first choice of study was education, were more positive.	4.2.2.1 (d) 4.2.2.1 (e)
	The 20 to 29 year old age group from South Africa had the most positive response regarding teacher aptitude, while the 40 to 49 year olds were the least positive. The 60+ year old age group from South Korea was the least positive, whereas the 20 to 29 year old age group was the most positive.	4.2.2.2 (a) 4.2.2.2 (b)
Teacher effectiveness	The Mangaung sample had a more positive response.	4.2.2.1 (a)
	The responses of the males and females from South Africa were identical, while the South Korean males seemed more positive than the females.	4.2.2.1 (b) 4.2.2.1 (c)
	The responses of both groups (in terms of choice of study) from Mangaung were positive, while the group in South Korea who	4.2.2.1 (d) 4.2.2.1 (e)

Teacher effectiveness	indicated that education was not their first choice of study, was more positive.	
	All the age groups in Mangaung responded positively to teacher effectiveness, while the responses of all the age groups in Busan were similar.	4.2.2.2 (a) 4.2.2.2 (b)
Teacher experience	Both countries had a positive response that was very analogous.	4.2.2.1 (a)
	Both the males and females from Mangaung had a positive response regarding teacher experience, while the females from Busan seemed more positive than the males.	4.2.2.1 (b) 4.2.2.1 (c)
	The responses of the participants in South Africa and South Korea whose first choice of study was NOT education, were more positive than their respective counterparts.	4.2.2.1 (d) 4.2.2.1 (e)
	It was not surprising that the oldest age group in South Africa (60+ years old) had the most positive response to teacher experience, while the 20 to 29 year olds were the least positive. In contrast to this, the 60+ year old age group from South Korea was the least positive, whereas the 20 to 29 year old age group was the most positive.	4.2.2.2 (a) 4.2.2.2 (b)
Recruitment and training of teachers	The two countries had identical responses.	4.2.2.1 (a)
	The responses of the males and females from South Africa were identical. In contrast to this, the responses of the males from South Korea were more positive.	4.2.2.1 (b) 4.2.2.1 (c)
	The responses of both groups (in terms of choice of study) from Mangaung were identical, while the group of respondents in Busan who did not choose education as their first choice of study, was more positive.	4.2.2.1 (d) 4.2.2.1 (e)
	While the responses of all the age groups in Mangaung were similar, the 60+ year old age group was the least positive. In the Busan sample, the 60+ year old age group was the most positive, whereas the 50 to 59 year olds were the least positive.	4.2.2.2 (a) 4.2.2.2 (b)
Teacher certification	The Busan participants were much more positive than those from Mangaung.	4.2.2.1 (a)
	While the South African males seemed more positive than the	4.2.2.1 (b)

Teacher certification	females, the responses of both gender groups from South Korea were very positive.	4.2.2.1 (c)
	The responses of the participants in South Africa whose first choice of study was NOT education, were more positive. Both groups (in terms of choice of study) in South Korea were very positive.	4.2.2.1 (d) 4.2.2.1 (e)
	The 20 to 29 year old age group in South Africa was the most positive regarding teacher certification, whereas the 60+ year old age group was the least positive. All the age groups from South Korea responded very positively, with the 20 to 29 year old age group responding the least positively.	4.2.2.2 (a) 4.2.2.2 (b)
Compensation and retention of teachers	The two countries seemed positive about the compensation and retention of teachers.	4.2.2.1 (a)
	Both the males and females from Mangaung had a positive response regarding the compensation and retention of teachers, whereas the responses of the males and females from Busan were very similar.	4.2.2.1 (b) 4.2.2.1 (c)
	The responses of the participants in Mangaung whose first choice of study was education, were more positive. The group in Busan who did NOT choose education as their first choice of study, was more positive.	4.2.2.1 (d) 4.2.2.1 (e)
Match quality	The South Korean respondents were more positive about items relating to match quality.	4.2.2.1 (a)
	The gender groups from South Africa had identical responses, while it was the same for the males and females from South Korea.	4.2.2.1 (b) 4.2.2.1 (c)
	The responses of both groups (in terms of choice of study) from	4.2.2.1 (d)

Match quality	South Africa were very similar, while the group in Busan who chose education as their first choice of study, was more positive.	4.2.2.1 (e)
	The 60+ year old age group in Mangaung was the least positive about the match quality of teachers, while the 20 to 29 year old age group was the most positive. The 20 to 29 year old age group was the most positive about match quality, while the 30 to 39 year olds were the least positive.	4.2.2.2 (a) 4.2.2.2 (b)
Teacher status and professional identity	Both countries had a positive response about teacher status and professional identity.	4.2.2.1 (a)
	The males from Mangaung seemed to respond slightly more positive than the females, while both gender groups from Busan responded very positively.	4.2.2.1 (b) 4.2.2.1 (c)
	The responses of the participants in Mangaung whose first choice of study was education, were more positive. Conversely, the responses of both groups (in terms of choice of study) from Busan were almost identical.	4.2.2.1 (d) 4.2.2.1 (e)
	The responses of the 60+ year old age group from Mangaung was the most positive, whereas the 40 to 49 year old age group was the least positive. The responses of the 60+ year old age group from Busan was considerably more positive than the other age groups, whereas the 40 to 49 year old age group was the least positive.	4.2.2.2 (a) 4.2.2.2 (b)
Measuring the productivity of teachers		
Construct	Findings	Reference
Teacher competency tests	The respondents from both countries were not very positive about measuring productivity with teacher competency tests.	4.2.2.1 (a)
	South African females seemed less positive about teacher competency tests, and in South Korea the males were also much more positive than the females.	4.2.2.1 (b) 4.2.2.1 (c)
	The responses of the participants in Mangaung whose first choice of study was education, were more positive. In contrast to this, the responses of the participants in Busan whose first choice of study was education, were considerably less positive.	4.2.2.1 (d) 4.2.2.1 (e)

	In terms of teacher competency tests, the responses of the 20 to 29 year old age group in South Africa was the most positive, whereas the 40 to 49 year olds were the least positive. The responses of the 20 to 29 year old age group in South Korea was the most positive, whereas the 40 to 49 year olds were noticeably less positive than the other age groups.	4.2.2.2 (a) 4.2.2.2 (b)
The role of the principal	The Busan participants were less positive about the role of the principal in measuring teacher productivity.	4.2.2.1 (a)
	The males and females from Mangaung responded similarly, while the females from Busan were not as positive as the males.	4.2.2.1 (b) 4.2.2.1 (c)
	The responses of the participants in South Africa whose first choice of study was education, were more positive. The responses of both groups (in terms of choice of study) from South Korea were not particularly positive.	4.2.2.1 (d) 4.2.2.1 (e)
	The responses of the 30 to 39 year old age group in Mangaung was the least positive, whereas the 20 to 29 year old age group was the most positive. The 60+ year old age group from Busan was the most positive, while the 40 to 49 year old age group was the least positive.	4.2.2.2 (a) 4.2.2.2 (b)
Role of the Department of Education	Both countries did not respond very positively about the role of the Department of Education.	4.2.2.1 (a)
	The females from South Africa were more positive than the males regarding the role of the Department of Education in measuring teacher productivity, whereas both gender groups from South Korea were not very positive.	4.2.2.1 (b) 4.2.2.1 (c)
	The responses of both groups (in terms of choice of study) from South Africa were very similar, while the group in Busan whose first choice of study was NOT education, was more positive.	4.2.2.1 (d) 4.2.2.1 (e)
	The responses of the 60+ year old age group in South Africa was the least positive, whereas the 20 to 29 year old age group was the most positive. The 30 to 39 year old age group from South Korea was the most positive, while the 40 to 49 year old age group was the least positive.	4.2.2.2 (a) 4.2.2.2 (b)

Value-added models	Mangaung respondents were much more positive about the possibility of using value-added models for measuring teacher productivity.	4.2.2.1 (a)
	The males from Mangaung seemed more positive than the females, while the females from Busan seemed more negative than the males.	4.2.2.1 (a)
	The responses of the participants in Mangaung whose first choice of study was NOT education, were more positive. The responses of both groups (in terms of choice of study) from Busan were not very positive.	4.2.2.1 (b) 4.2.2.1 (c)
	The 40 to 49 year old age group from South Africa was the most positive about value-added models for measuring teacher productivity, while the 20 to 29 year old age group from South Africa was the least positive. The 60+ year old age group from South Korea had the most positive responses, while the 40 to 49 year old age group was considerably less positive.	4.2.2.1 (d) 4.2.2.1 (e)

4.5 CONCLUSION

As proposed in section 1.4, one of the secondary research questions was aimed at examining the perceptions of teachers (including principals) regarding the productivity of teachers. This chapter therefore provided an analyses and comparison of the perceptions of teachers in South Africa and South Korea.

Firstly, the Busan participants seemed more positive with regards to teachers being required to write an entrance examination before being certified as a teacher. This might be because the South Korean education policy already requires them to write such an exam (see section 2.2.7.2). The youngest age group from both samples appeared to be the most willing to agree to an entrance exam. In addition, neither of the samples were eager to write the same exams that their own learners have to write.

Secondly, the data pointed out that the South African participants did not feel that it is difficult to become a teacher in their country, while the responses from South Korea suggested that it is very difficult to become a teacher in their country.

Furthermore, the perceptions of the Mangaung sample pointed out that they did not feel respected by their communities, which has a negative impact on their status and professional identity.

Lastly, the responses from the two samples suggested that the principal could play a more fundamental role in assessing the productivity of teachers.

The next chapter will point out specific limitations of the study as well as proposing possible suggestions for further research. The realities of teacher productivity in South Africa and South Korea will also be discussed.

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

This chapter focuses on summarising each of the previous chapters, analysing the results of the study, providing recommendations and suggestions, discussing the limitations of the study as well as making suggestions for future research.

In the first chapter I discussed the research problem (1.3) and stated that the main objective of this study (1.4) was to compare the perceptions of teachers in South Africa and South Korea. In order to reach this objective, I discussed the demarcation of the entire study (1.7).

Chapter 2 was a literature review with the aim of conceptualising the different aspects of teacher productivity. It was established that productivity refers to how much and how well a person can produce from the available resources (2.2.1). A detailed description was given of each of the factors that relate to teacher productivity (2.2.2 – 2.2.10), as well as the possible methods that are currently used to measure teacher productivity (2.3).

In chapter 3 the research methodology (3.2) for the attainment of the research aims were considered. I then commented on the development of the questionnaire items (3.2.1), after which the participants were described (3.2.2). I also proposed quantitative methods for analysing the data (3.3).

Chapter 4 involved an extensive analysis and comparison of the responses of the two samples. Each of the constructs relating to teacher productivity was summarised using bar graphs which compared the results of Mangaung and Busan (4.2.1.1). The perceptions of the participants regarding the measurement of teacher productivity was also compared (4.2.1.2). The responses of the different gender groups and age groups were also compared (4.2.2.2). Lastly, the participants were also sub-divided into a group whose first choice of study was education and a group whose first choice of study was not education (4.2.2.1).

In this final chapter, I attempt to integrate all the chapters and results in order to comment on the perceptions of teachers in South Africa and South Korea regarding teacher productivity. In addition, I put forward recommendations and suggestions, including

suggestions for further study. The specific limitations of the study will also be discussed in this chapter.

5.2 REALITIES OF TEACHER PRODUCTIVITY IN SOUTH AFRICA AND SOUTH KOREA

In order to make any conclusions concerning teacher productivity in South Africa and South Korea, the literature review served as a basis for this discussion (chapter 2). The analyses of the results of the survey questionnaire (4.2) was also utilised to provide the relevant scaffolding for any recommendations or suggestions following the interpretation of the survey results.

The literature review mainly focused on two specific components relating to teacher productivity. Firstly, there were nine constructs that collectively formed part of the factors relating to teacher productivity (2.2 & 4.2.1.1), while the other four constructs specifically covered the possible measurement of teacher productivity (2.3 & 4.2.1.2).

Keeping the main research question of this study in mind (How do the perceptions of teachers in South Africa and South Korea compare, regarding teacher productivity?), the key to unlocking the perceptions of the participants from both samples would lie within the analysis of the survey data (4.2).

5.2.1 FACTORS RELATING TO TEACHER PRODUCTIVITY

The perceptions of the different participants from Mangaung and Busan regarding teacher productivity incorporated their view of what productivity is, what makes certain teachers more productive than others, as well as what the requirements should be in order to become a certified teacher in their specific country.

These factors, as well as the other factors that relate to teacher productivity, will be discussed in the next section.

5.2.1.1 QUALITY OF TEACHERS

Since the quality of teachers in South Africa is constantly being brought into question (2.1), I tested the perceptions of the participants in this regard. The respondents from both

samples felt that the best teacher is not necessarily the one with the highest qualifications (4.2.1.1 a).

I can therefore conclude that the perceptions of the participants in this study are in line with the current literature (2.2.7).

5.2.1.2 TEACHER APTITUDE

In terms of teacher aptitude, the results indicated that both samples felt the same with regards to teachers being required to write the same exams as their learners (4.2.1.1 b). However, the Busan participants were much more positive in terms of teachers writing an entrance examination before becoming a teacher. The Korean teachers therefore felt that an entrance examination could serve as a suitable measure for enhancing the quality of the teachers in their country.

The youngest age group from both samples responded the most positively regarding the issue of teacher aptitude (4.2.2.2 a & 4.2.2.2 b). This could indicate that the younger generation from both countries feel that education should be pursued by top academic candidates.

5.2.1.3 TEACHER EFFECTIVENESS

This construct included the most items in the survey (4.2.1.1 c). The participants from Margaung responded significantly more positive regarding the items that related to working after hours. Furthermore, the participants from Busan felt that the administrative duties, as required from the Department of Education, did not enhance teacher productivity.

I can consequently conclude that in terms of teacher effectiveness, the administrative duties as well as extra mural activities of teachers do not necessarily enhance teacher productivity.

5.2.1.4 TEACHER EXPERIENCE

The literature on teacher experience indicates that an experienced teacher is not necessarily a productive teacher (2.2.5). Participant responses were in line with the literature, with the Margaung respondents being more negative towards the item in the survey that related to teacher experience (4.2.1.1 d). The Margaung participants therefore felt that the best teacher is not always the one with the most experience.

However, the comparison of the different age groups from the samples were somewhat surprising. While the South African participants had the most positive response from the oldest age group (60+ years), the most positive response from the South Korean participants came from the youngest age group (20 to 29 years). The least positive response in South Africa was from the youngest age group (20 to 29 years), whereas the least positive response in South Korea was from the oldest age group (60+ years).

This interesting finding could be a result of the social hierarchy that exists in South Korea, where the younger generation demonstrates enormous amounts of respect towards the older members of their community.

5.2.1.5 RECRUITMENT AND TRAINING OF TEACHERS

The participants from the two samples responded similarly to items in the questionnaire that related to the recruitment and training of teachers (4.2.1.1 e). However, the participants from Busan felt that the training of teachers who studied in other fields were not sufficient, while the respondents from Mangaung did not feel that the teachers in their country were well trained.

While the South African participants felt that it was not too difficult to become a teacher in their country, the South Korean participants felt that was very difficult to become a teacher in their country.

The conclusion here points towards the supply and demand of teachers in each country. In the case of South Africa not enough teachers are being trained to replace the number of teachers that leave the education system on an annual basis (2.2.7.1). However, the opposite is true in South Korea, where there is generally an oversupply of teachers (2.2.7.2).

5.2.1.6 TEACHER CERTIFICATION

The Mangaung participants did not respond as positively as the Busan participants in terms of writing an entrance examination before becoming a certified teacher (4.2.1.1 f). I conclude that this could be because of South Korean education policy where teachers are required to pass an employment examination (2.2.7.2).

However, the participants from the Busan sample was less positive about allowing students from other study fields to become teachers. Additionally, the 20 to 29 year old age group

responded the most positive in the South African sample, whereas the same age group from South Korea responded the least positive in this regard.

5.2.1.7 COMPENSATION AND RETENTION OF TEACHERS

I found that the literature pointed towards a complex situation with regards to the implementation of incentives and performance related pay for teachers (2.2.8.1). The responses of the two samples varied with regards to the survey items that related to the compensation and retention of teachers (4.2.1.1 g).

While the responses of the Mangaung sample were in favour of incentives and performance related pay for teachers, the Busan participants did not respond as positively. In addition, the South African participants felt that the teachers in their country do not have financial security and that they are not paid well.

The participants from both samples agreed that experienced teachers could be rewarded for their dedication to teaching. The 60+ year old age group from both countries responded the most positively regarding the items in the survey that related to the compensation and retention of teachers.

I can conclude that the participants from South Africa feel that they are underpaid and that their productivity might increase if there was some sort of performance-related pay or incentive.

5.2.1.8 MATCH QUALITY

When teachers are satisfied with the school where they work, it could influence their productivity in a positive way (2.2.9). With this in mind, a number of statements were developed for the survey, to explore the perceptions of the teachers regarding match quality.

I found that the participants from Busan agreed more than the participants from Mangaung, that teachers become less productive if they stay at the same school for too long. They also believed that the productivity of teachers might increase if they moved to new schools regularly (4.2.1.1 h). The 20 – 29 year old age group from both countries responded the most positively.

As a result, I can conclude that younger teachers from South Africa and South Korea are more open to the possibility of moving to new schools regularly.

5.2.1.9 TEACHER STATUS AND IDENTITY

The timing of the screening of student teachers is crucial in determining the status and identity of teachers in a country (2.2.10). If an education system lowers the requirements and standards to become a teacher, this could have a negative impact on the quality of teachers.

Both samples agreed that they felt proud to be a teacher, that they were supported when they first started at their schools and that their contributions were valued by their colleagues (4.2.1.1 i).

The responses from both countries were mostly positive with regards to the items in the survey that related to teacher status and identity (4.2.1.1 i). The 60+ age groups from both Busan and Mangaung were the most positive about items that involved teacher status and identity.

However, the participants from South Africa made it clear that they did not feel respected by other members of their communities and that teaching is not a very appealing career in their country.

Consequently, I can conclude that teaching is a more respected career in South Korea.

5.2.2 MEASURING TEACHER PRODUCTIVITY

Since the commencement of this study, the main concern was how the productivity of teachers could be measured. After completing the literature study, I found that it was more complex than I expected (2.3).

The measurement of teacher productivity can be divided into four main approaches which are described in the following section.

5.2.2.1 TEACHER SUBJECT COMPETENCY TESTS

Teacher subject competency tests might include many benefits such as testing the knowledge of pre-service teachers, managing the continuous evaluation of the subject

knowledge of current teachers, and serving as a comprehensive database for research purposes (2.3.1).

The survey results revealed that the teachers from Busan and Mangaung were not very keen on the proposition of teachers being required to write the same exams as their learners. The females from both samples responded less positively in this regard (4.2.1.2 a). Additionally, the youngest age groups (20 to 29 years old) from both South Africa and Busan responded most positively towards writing the same exams as their learners.

The results might furthermore point out that many teachers are not that confident in their own abilities,

5.2.2.2 THE ROLE OF THE PRINCIPAL IN MEASURING TEACHER PRODUCTIVITY

The role of principals in measuring teacher productivity could on the one hand be more cost-effective, but on the other place enormous pressure on the principal (2.3.2). A principal who focuses on interpersonal relationship with their staff members might be able to rank teachers at their schools according to their productivity.

In terms of the role of the principal in measuring teacher productivity, the responses from the South African participants are much more positive than that of the South Koreans (4.2.1.2 b). It could therefore be concluded that the responses from the Busan sample point towards a hesitancy to trust the judgment of their principals.

5.2.2.3 THE ROLE OF THE DoE IN MEASURING TEACHER PRODUCTIVITY

Considering that the DoE has countless obligations and responsibilities, one of their most important duties include the management and continuous evaluation of the productivity of teachers (2.3.3).

The responses from both countries were not very positive towards the role that the DoE plays in the measurement of teacher productivity (4.2.1.2 c). The younger age groups from each country were more positive. In the case of Mangaung, the 20 to 29 year old age group was the most positive, whereas the 30 to 39 year olds in Busan responded most positively in their sample.

5.2.2.4 VALUE-ADDED MEASURES FOR MEASURING TEACHER PRODUCTIVITY

One major downside of utilising value-added measures for measuring teacher productivity is the issue of finding complete datasets for learner results (2.3.4). In addition, these models typically involve multiple variables that could influence teacher value adding.

The responses of the Mangaung sample were considerably more positive than the participants from Busan. The male respondents from both samples felt more optimistic that the results of learners in national exams could be a direct indication of teacher productivity (4.2.1.2 d).

I can thus conclude that if a researcher intends to use any form of the value-added model for measuring teacher productivity, extensive research should be done into the availability of datasets.

5.3 RECOMMENDATIONS AND SUGGESTIONS

Considering that each country is unique, with unique citizens and unique educational needs, there is no education system in the world that could offer a “copy-and-paste” solution for other underperforming education systems.

Valuable educational lessons can however be learnt from other education systems that have had successes in the past. Moving forward, the teaching profession in South Africa could incorporate certain measures in order to maximise teacher productivity. My first suggestion is that prospective student teachers should be screened before being admitted to study education. This could serve as an indicator of the potential of a candidate.

Teaching is a professional career, so teachers should always behave in such a way that their professionalism is not brought into question (non-professionalism of teachers lead to a negative view of the teaching profession). This includes, but is not limited to, being punctual and prepared, maintaining good classroom discipline, and being able to communicate effectively with learners, colleagues and parents. Another suggestion is therefore that each teacher is required to attend compulsory training in this regard.

Although teacher experience cannot guarantee teacher productivity, it still has a valuable role to play. The perceptions of the respondents from both countries indicated that they felt that experienced teachers should play a central role in the mentoring of new teachers.

5.4 LIMITATIONS OF THE STUDY

After personal reflection during and also after the completion of this research project, I would like to discuss the limitations of this study.

Firstly, the number of South Korean respondents was disappointing. Even though the same sampling methods were applied for both samples, I believe the fact that I was unable to visit all the schools in Busan personally had a major impact on the number of participants. This could be attributed to the reality that the schools in Busan were contacted telephonically, and via e-mail.

Secondly, the participants from Busan were required to participate in the study using an online platform (www.surveymonkey.com) to complete the questionnaires. This made it impossible to know which schools from Busan participated, how many people from each school completed the survey, and what the actual response rate of the Busan sample was.

In addition, my initial intention was to measure and compare the productivity of teachers in South Africa and South Korea. Upon conclusion of the literature review, it was apparent that the measurement of the productivity of teachers was a very ambitious endeavour. Moreover, previous attempts to measure the productivity of teachers in South Africa had not been possible due to the lack of comprehensive datasets (see section 3.1).

Lastly, the constructs identified during the literature review were developed into a set of questions for the survey questionnaire. In my research I did not come across a standard questionnaire that related to the measurement of the productivity of teachers. Consequently, I had to develop a new questionnaire using a Likert scale. Some constructs had an abundance of questions, whereas others had only one or two questions.

5.5 SUGGESTIONS FOR FURTHER RESEARCH

While this study only focused on the perceptions of teachers regarding teacher productivity, a future study could explore the measurement of the productivity of teachers. This in turn could shed valuable light on education policies regarding the management and assessment of teacher productivity.

Secondly, a more comprehensive search and enquiry into the available datasets in South Africa could be undertaken. This could explore the datasets that are currently utilised for

the capturing of the ANA examination scores in South Africa. An investigative search into the possibility of linking learner results with a specific teacher over an extensive period of time could be invaluable in determining the productivity of a teacher.

5.6 CONCLUDING REMARKS

The influence that teachers have on learner performance is undeniable. Yet developing a reliable instrument that can measure teacher productivity on a precise and consistent basis has so far eluded researchers and policy makers.

After considering the current measures of teacher productivity, it was unclear whether the South African Department of Basic Education had a comprehensive dataset that could track both the results of each learner as well as the teachers who taught them. The absence of such a dataset would make it impossible to apply value-added models for measuring teacher productivity. In addition, further study regarding the significance of teacher productivity measures, as implemented by the Department of Education in South Africa (currently in the form of IQMS), is essential.

The perceptions of the teachers indicated that it could be possible for principals to measure teacher productivity. In addition, it was very clear that younger teachers (age 20 to 39) were positive to the possibility of implementing teacher competency tests as measurement of teacher productivity.

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ADDENDA

Enquiries: BM Kitching
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L.M. Engelbrecht
2 Sereno
525 Chianti Cr
Shellyvale
BLOEMFONTEIN

Dear Mr Engelbrecht

APPROVAL TO CONDUCT RESEARCH IN THE FREE STATE DEPARTMENT OF EDUCATION

1. This letter serves as an acknowledgement of receipt of your request to conduct research in the Free State Department of Education.

Research Topic: Productivity of teachers: Comparing the cases of South Africa & South Korea

Approval is herewith granted to conduct research in the following schools: See attached list of 30 schools.

Target Population: 1x Principal and 30 X Teachers from each school in Mangaung

Period of research: For three months from the date of signing of this letter. Please note that the department does not allow any research to be conducted during the fourth term (quarter) of the academic year.

2. Should you fall behind your schedule by three months to complete your research project in the approved period, you will need to apply for an extension.
3. The approval is subject to the following conditions:
 - 3.1 The collection of data should not interfere with the normal tuition time or teaching process.
 - 3.2 A bound copy of the research document should be submitted to the Free State Department of Education, Room 319, 3rd Floor, Old CNA Building, Charlotte Maxeke Street, Bloemfontein.
 - 3.3 You will be expected, on completion of your research study to make a presentation to the relevant stakeholders in the Department.
 - 3.4 The attached ethics documents must be adhered to in the discourse of your study in our department.
4. Please note that costs relating to all the conditions mentioned above are your own responsibility.

Yours sincerely


DR JEM SEKOLANYANE
CHIEF FINANCIAL OFFICER

DATE: 04/09/2015



Faculty of Education

01-Feb-2016

Dear Mr Lourens Engelbrecht

Ethics Clearance: Productivity of teachers: Comparing the cases of South Africa and South Korea.

Principal Investigator: Mr Lourens Engelbrecht

Department: School of Education Studies (Bloemfontein Campus)

APPLICATION APPROVED

With reference to your application for ethical clearance with the Faculty of Education, I am pleased to inform you on behalf of the Ethics Board of the faculty that you have been granted ethical clearance for your research.

Your ethical clearance number, to be used in all correspondence is: **UFS-HSD2015/0253**

This ethical clearance number is valid for research conducted for one year from issuance. Should you require more time to complete this research, please apply for an extension.

We request that any changes that may take place during the course of your research project be submitted to the ethics office to ensure we are kept up to date with your progress and any ethical implications that may arise.

Thank you for submitting this proposal for ethical clearance and we wish you every success with your research.

Yours faithfully

A handwritten signature in black ink, appearing to read 'Juliet Ramohai', written over a light blue grid background.

Dr. Juliet Ramohai
Chairperson: Ethics Committee



Faculty of Education

30-Jun-2015

Dear Mr Lourens Engelbrecht

Ethics Clearance: Productivity of teachers: Comparing the cases of South Africa and South Korea.

Principal Investigator: Mr Lourens Engelbrecht

Department: School of Education Studies (Bloemfontein Campus)

With reference to your application for ethical clearance with the Faculty of Education, this letter is to inform you on behalf of the Ethics Board of the faculty that you will be granted ethical clearance for your research, pending clarifications of the following:

1. The researcher notes that the topic is not sensitive. However, I would argue that teacher productivity is sensitive in the South African context, given the complex union environment and the generally poor performance in the schooling sector (which is noted by the researcher). To what extent might teachers be biased in their responses on the questionnaire? How likely is it that a teacher will report that they never or seldom prepare for class or that they often leave early? Does the researcher anticipate any difficulties in obtaining approval from provincial and district authorities who may also be sensitive to this topic. This raises ethical questions which I think the researcher needs to think about and briefly reflect on in the documentation.

2. The applicant indicates data will not be de-identified. From the context I think this is not the intended answer. Please review this answer and confirm.

The applicant indicates the participants will directly benefit, but this is unlikely considering the answer given. The answers relating to benefits appear to be cut-and-paste duplications. Rather consider some alternative reciprocity strategy. In the consent form, it may be helpful to modify the description to be "a comparison of how policies influence your productivity as a teacher". This will depersonalise it and make the study seem less about comparing productivity and more about comparing how their productivity is supported/constrained by policy (a less judgmental approach).

In the CV, there is little indication of the role the applicant held in Korea (alluded to in the application). I would need to see this to determine any conflict of interest or power-relation issues.

Your ethical clearance number, to be used in all correspondence is: **UFS-HSD2015/0253** .

This ethical clearance number is valid for research conducted for one year from issuance. Should you require more time to complete this research, please apply for an extension via RIMS.

We request that any changes that may take place during the course of your research project be submitted to the Ethics office to ensure we kept up to date with your progress and any ethical implications that may arise.

Thank you for submitting this proposal for ethical clearance and we look forward to receiving your revised proposal for what promises to be a valuable research contribution.

Yours Sincerely



Dr M.M. Nkoane
Chairperson: Ethics Committee
Faculty of Education

**PRODUCTIVITY OF TEACHERS:
COMPARING THE CASES OF SOUTH AFRICA AND SOUTH KOREA**

Dear Principal

I am a registered Masters student at the Faculty of Education, University of the Free State. I plan to conduct research on **the productivity of teachers by comparing the cases of South Africa and South Korea** as part of the requirements for my M.Ed degree in Policy Studies and Governance in Education.

In order to complete my research, I am requesting you, as well as 14 teachers from your school, to participate in this study. The research will be conducted in the form of a survey questionnaire. It should not take more than 10 minutes to complete. Please complete the questionnaire after school hours, at your earliest convenience. Although your participation is very valuable, it still remains completely voluntary.

Please note that all questionnaires should be completed anonymously and that the information obtained from this research will be kept confidential. The names of the participants or of your school should therefore not be written on the questionnaires. The analyses of the data will be summarized in such a way that no individual or school will be identifiable.

Please answer the questions as honestly as you can. You are more than welcome to contact me regarding the questionnaire or any part of the research.

Your support is appreciated.

Mr. Lourens Engelbrecht

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September 2015

INFORMED CONSENT:

Dear Participant

I would like to invite you to take part in this research project:

Productivity of teachers: Comparing the cases of South Africa and South Korea.

This study is exploring teachers' perceptions on teacher productivity and what can influence teacher productivity.

We would like you to participate with us in this research because you are currently serving in an educational position and we believe your input will be valuable.

The reason we are doing this study is to gain insights about the perceptions on productivity of teachers, through comparing the cases of South Africa and South Korea.

We believe that the study pose no risks to you as an individual. Still, we have taken the following steps to protect you from these risks:

Your responses are anonymous - neither you nor your school will be identifiable.

The data will be kept safe at all times.

Although you might not benefit directly from this study, it will still provide clear indications of what can influence teacher productivity and which steps can be taken to maximize productivity.

While I greatly appreciate your participation in this important study and the valuable contribution you can make, your participation is entirely voluntary and you are under no obligation to take part in this study. If you do choose to take part, and an issue arises which makes you uncomfortable, you may at any time stop your participation with no further repercussions.

If you experience any discomfort or unhappiness with the way the research is being conducted, please feel free to contact me directly to discuss it, and also note that you are free to contact my study supervisor (indicated above).

Should any difficult personal issues arise during the course of this research, I will endeavour to see that a qualified expert is contacted and able to assist you.

Yours sincerely,

Lourens Engelbrecht
Mr. L.M. Engelbrecht

Please complete and return this page. You may keep the attached letter for future reference.

Study: *Productivity of teachers: Comparing the cases of South Africa and South Korea*

Researcher: *Lourens Engelbrecht*

Name and Surname: _____

- I hereby give free and informed consent to participate in the abovementioned research study.
- I understand what the study is about, why I am participating and what the risks and benefits are.
- I give the researcher permission to make use of the data gathered from my participation, subject to the stipulations he has indicated in the attached letter.

Signature: _____ Date: _____

PRODUCTIVITY OF TEACHERS

GENERAL INFORMATION

- This questionnaire should be completed by teachers and principals from identified schools.
- Do not identify yourself by writing your name or the name of your school on the questionnaire.
- Do note that in some instances we distinguish between the South African context (SA) and the South Korean context (SK). Respond to your relevant country please.
- Please respond to all the different items in the questionnaire by marking the relevant block. (See example.) In a few instances you have to write in the open section provided (nos. 4 and 5).

EXAMPLE: What is your gender?

If you are female:

Female	1
Male	2

Section A – Background information

1. What is your gender?

Female	1
Male	2

2. In what age group do you fall?

20 – 29 years	1
30 – 39 years	2
40 – 49 years	3
50 – 59 years	4
60+ years	5

3. What is your highest qualification?

Grade 12 (SA) /High school certificate (SK)	1
Diploma	2
Degree (or degree & diploma)	3
Honours degree	4
Master's degree	5
PhD	6

4. How many years of teaching experience do you have? (Write it down) _____

5. How many schools have you worked at? (Write the number down) _____

6. Was teaching your first choice to study after school

No	1
Yes	2

7. Have you ever left education to pursue an occupation other than education?

No	1
Yes	2

8. How are you involved in education? (mark more than one block if necessary, under your own country's system)

South African residents	
Pre-primary school staff member	1
Foundation Phase staff member	2
Intermediate Phase staff member	3
Senior Phase staff member	4
FET Phase staff member	5

South Korean residents	
Kindergarten staff member	1
Elementary school staff member	2
Middle school staff member	3
High school staff member	4

9. What is your position at the school (mark under your own country)?

South African residents	
Teacher	1
HOD	2
Vice-principal	3
Principal	4

South Korean residents	
Teacher (Grade 2)	1
Teacher (Grade 1)	2
Vice-principal	3
Principal	4

Section B - School information

10. How would you classify your school?

Urban school	1
Township school (SA)	2
Rural school	3
Farm school	4

11. Please indicate your type of school?

Public school	1
Private school	2
Vocational school (SK)	3
Technical school	4
Civic school (SK)	5
Special school	6

12. What is the average number of learners in your class?

0 - 15	1
16 - 25	2
26 - 35	3
36 - 45	4
45+	5

13. How many learners are enrolled in your school?

0 - 300	1
301 - 500	2
501 - 1 000	3
1 001+	4

Section C - Productivity

Consider each of the statements that follow, and your own personal views and experiences in this regard. To which extent do you agree or disagree with the following statements? Indicate your answer using the 4-point scale, where: 1 = Strongly disagree

2 = Disagree

3 = Agree

4 = Strongly agree

	Strongly disagree	Disagree	Agree	Strongly agree
14. A productive teacher is never late for work.	1	2	3	4
15. Working after school hours (at home or at school) is part of being a teacher.	1	2	3	4
16. Teachers, who leave earlier than they are supposed to, are not productive.	1	2	3	4
17. It is easy to become a teacher in my country.	1	2	3	4
18. All teachers at a school should be involved in extra mural activities.	1	2	3	4
19. Teachers should regularly attend after hour's school events.	1	2	3	4
20. Some teachers at my school often take sick leave even when they are not sick.	1	2	3	4
21. All teachers at my school are well prepared for their lessons.	1	2	3	4
22. Teachers at my school never complain about school related matters.	1	2	3	4
23. All teachers at my school have good discipline in their classes.	1	2	3	4
24. The teachers in my country are well trained.	1	2	3	4
25. I received excellent training in education during my studies at university/college.	1	2	3	4
26. My education qualification is valued.	1	2	3	4
27. Teachers who studied in other fields should also be allowed to become teachers.	1	2	3	4
28. The training of teachers, who studied in other fields, is sufficient.	1	2	3	4
29. Teachers who want to be promoted should be required to complete post graduate studies.	1	2	3	4

	Strongly disagree	Disagree	Agree	Strongly agree
30. Teachers at my school are very ambitious and want to become a principal one day.	1	2	3	4
31. All teachers should continuously do academic courses to improve their teaching skills.	1	2	3	4
32. The best teacher is the one with the highest qualification.	1	2	3	4
33. Only the top candidates (with excellent academic school results) should be allowed to study education.	1	2	3	4
34. Before becoming a certified teacher, an entrance examination should be written.	1	2	3	4
35. Teacher knowledge should regularly be tested by requiring teachers to write the same exam as their own learners.	1	2	3	4
36. Experienced teachers should be rewarded for their dedication to teaching.	1	2	3	4
37. Experienced teachers should be employed as mentor teachers for new teachers.	1	2	3	4
38. Experienced teachers should be deployed to underperforming schools.	1	2	3	4
39. The best teacher is the one with the most experience.	1	2	3	4
40. Teachers in my country are well paid.	1	2	3	4
41. Teachers in my country have financial security.	1	2	3	4
42. I plan to continue teaching until I retire.	1	2	3	4
43. I work at an excellent school.	1	2	3	4
44. I plan to stay at my current school.	1	2	3	4
45. I will only move to another school if I am promoted.	1	2	3	4
46. There are often new teachers appointed at my school due to others leaving.	1	2	3	4
47. The productivity of teachers would increase if they regularly move to a new school (e.g. every 5 years).	1	2	3	4
48. Teachers who stay at one school for too long become less productive.	1	2	3	4
49. Teaching is an appealing career in my country.	1	2	3	4
50. The teachers in my country are respected by other members of the community.	1	2	3	4
51. I am proud to be a teacher.	1	2	3	4
52. My colleagues value my contributions at school.	1	2	3	4
53. The support from the Department of Education makes teachers more productive.	1	2	3	4

	Strongly disagree	Disagree	Agree	Strongly agree
54. The training, workshops or other education related sessions that the Department of Education offer, makes teachers more productive.	1	2	3	4
55. Sessions organised by the Department of Education are usually beneficial and informative.	1	2	3	4
56. Sessions organised by the Department of Education are usually well presented.	1	2	3	4
57. The Department of Education works closely with teachers in order to maximise the productivity of teachers.	1	2	3	4
58. The Department of Education recognises and rewards teachers who perform exceptionally.	1	2	3	4
59. The administrative duties of teachers, as required from the Department of Education, enhance teacher productivity.	1	2	3	4
60. The Department of Education manages and assesses the productivity of teachers successfully.	1	2	3	4
61. The productivity of teachers can be measured by principals.	1	2	3	4
62. Teachers should be ranked according to the performance of the learners they teach.	1	2	3	4
63. Teachers will be more productive if there is some form of performance related pay.	1	2	3	4
64. There should be incentives for teachers whose learners perform well in national exams.	1	2	3	4
65. The results of learners in national exams could be a direct indication of the effectiveness of teachers.	1	2	3	4
66. Learning from teachers from other schools can make teachers more productive.	1	2	3	4
67. Teachers should regularly share ideas with other teachers.	1	2	3	4
68. Interacting with colleagues in a social setting improves the productivity of teachers.	1	2	3	4
69. Teachers at my school motivate each other.	1	2	3	4
70. The teachers at my school made an effort to support me when I first started at the school.	1	2	3	4
71. There is always a positive atmosphere at my school.	1	2	3	4

Thank you for your participation in this study. Your support is appreciated. Please fold the questionnaire in half, and staple it so that your responses remain confidential. Place it in the sealed box provided.

교사의 생산성 : 남아프리카 공화국과 한국의 사례를 비교

친애하는 교장선생님

저는 University of the Free State 교육학부에 등록된 석사 학생입니다. 저는 교육 정책 연구 및 관리에 대한 학위를 위한 요구 사항의 일환으로 남아프리카 공화국과 한국의 사례들을 비교하여 교사의 생산성에 대한 연구를 수행 할 계획입니다.

제 연구를 완료하기 위해, 저는 교장 선생님과 교장 선생님 학교의 교사 10 분에게 본 연구에 참여해주실 것을 부탁 드립니다. 이 연구는 설문지의 형태로 실시되며 완료하는데 10 분 이상 걸리지 않을 것입니다. 가능한 빠른 시일 내에 편한 시간을 이용해서서 설문을 작성해 주십시오. 교장선생님의 참여는 완전히 자발적이나 만약 참여해 주신다면 매우 귀중한 자료로 쓰일 것입니다.

모든 설문조사는 익명으로 진행되며 이 연구에서 얻은 정보는 비밀로 유지될 것입니다. 따라서 참가자 또는 학교의 이름은 기록되지 않아야 합니다. 데이터의 분석은 어떤 개인이나 학교로 식별되지 않는 방식으로 요약될 것입니다.

최대한 솔직하게 질문에 답변 해 주십시오. 본 연구 또는 설문에 관해 연락을 주신다면 언제든지 환영입니다.

귀하의 지원에 감사드립니다.

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2015 년 9 월

설문 동의서:

친애하는 참가자 여러분

저는 여러분을 이 연구 프로젝트에 참여하는데 초대하고자 합니다:

교사의 생산성: 남아프리카 공화국과 한국의 사례를 비교

이 연구는 생산적인 교사들은 어떠한가와 무엇이 교사의 생산성에 영향을 미칠 수 있는지에 관한 조사입니다.

우리는 여러분이 현직 교사이시기 때문에 이 연구에 함께 참여하셨으면 합니다.

우리가 이 연구를 수행하는 이유는 남아프리카 공화국과 한국의 사례들의 비교를 통해 교사의 생산성에 대한 통찰력을 얻기 위함입니다.

여러분이 이 연구에 참여하는데 가능한 위험성은 매우 제한적이지만, 본 설문은 어려운 질문에 대답을 포함할 수 있습니다. 우리는 이러한 위험으로부터 여러분을 보호하기 위해 다음과 같은 단계를 수행하였습니다: 귀하의 응답은 익명이며 데이터는 항상 안전하게 유지될 것입니다.

이 연구가 여러분에게 직접적으로 유익하지 않을지도 모릅니다. 그럼에도 불구하고 이 연구는 무엇이 교사의 생산성에 영향을 끼칠 수 있는지, 그리고 교사의 생산성을 최대화하기 위해 취할 수 있는 단계들에 대한 명확한 지침을 제공할 것입니다.

저는 이 중요한 연구에 대한 참여와 귀중한 공헌에 진심으로 감사드리며, 여러분의 참여는 전적으로 자발적이므로 참여의 의무는 없다는 점을 알려드립니다. 만약 여러분이 참여하기를 선택하시고 여러분을 불편하게 만드는 문제가 발생한다면, 더 이상의 영향이

없도록 언제든지 참여를 중지하셔도 됩니다. 본 연구가 진행되는 동안 진행방식에 대한 불편이나 불만족이 발생하는 경우, 이를 논의하기 위해 저에게 직접 연락 주시기 바랍니다. 또한 위에 표시된 저의 연구 책임자에게 연락 주셔도 됩니다.

본 연구 과정에서 어떠한 개인적인 발생하는 경우, 저는 자격을 갖춘 전문가가 연락하여 도움을 드릴 수 있도록 노력할 것입니다.

그럼 안녕히 계십시오.

Mr. L.M.Engelbrecht

작성 후 이 페이지를 돌려보내 주시기 바랍니다. 향후 참조를 위해 위의 편지를 보관하십시오.

연구 : 교사의 생산성: 남아프리카 공화국과 한국의 사례를

연구원: Mr.L.M.Engelbrecht

이름과 성 : _____

나이 : _____

교사 / 교장 : _____

전화 번호: _____

- 본인은 상기 연구 조사에 무료로 참여하는 것을 동의합니다.
- 본인은 본 연구가 무엇에 관한 것인지, 왜 참여하는지, 위험과 혜택은 무엇인지에 대해 이해하고 있습니다.
- 본인은 연구자가 위 편지에서 표시한 조건으로, 본인의 참여에서 수집한 데이터를 사용할 수 있는 권한을 연구원에게 부여합니다.

서명: _____ 날짜: _____

교사의 생산성

일반 정보

- 본 설문은 확인된 학교의 교사와 교장이 작성하도록 합니다.
- 응답자의 이름 또는 학교의 이름을 설문지에 적지 마십시오.
- 몇몇 문항의 경우, 남아프리카의 상황 (SA)과 한국의 상황 (SK)의 구별이 있으니 관련 국가에 응답바랍니다.
- 해당 블록을 표시하여 설문의 모든 다른 항목에 응답하시기 바랍니다. (예를 참조하십시오.) 4,5 번 문항의 경우 빈 공간에 응답을 작성해 주셔야 합니다.

예 : 성별이 무엇입니까?

당신이 여성일 경우 :

여성	X
남성	2

섹션 - 배경 정보

1. 귀하의 성별은 무엇입니까?

여성	1
남성	2

2. 어떤 연령에 해당합니까?

20 - 29 세	1
30 - 39 세	2
40 - 49 세	3
50 - 59 세	4
60+ 세	5

3. 가장 높은 자격은 무엇입니까?

12 학년 (SA) / 고등학교 증명서 (SK)	1
전문대졸	2
학사 (또는 학위 및 졸업장)	3
우등 학사	4
석사 학위	5
박사 과정	6

4. 귀하의 교육 경력은 몇 년입니까? (써주세요) _____

5. 몇 개의 학교에서 근무하셨습니다? (숫자 기록해주세요) _____

6. 학교 졸업 교직이 첫 선택이었습니까?

아니요	1
예	2

7. 귀하는 이제까지 교육 이외의 직업을 추구하여 교직을 떠난 적이 있습니까?

아니 요	1
예	2

8. 귀하는 어떻게 교육에 관련되어 있습니까? (필요한 경우, 자신의 나라에 해당하는 곳에 하나 이상의 응답을 표시하십시오)

남아프리카	
전 초등학교 직원	1
재단의 위상 직원	2
중간 단계의 직원	3
수석 위상 직원	4
FET 위상 직원	5

한국	
유치원 직원	1
초등학교 교직원	2
중학교 직원	3
고등학교 직원	4

9. 학교에서 당신의 위치 무엇입니까?

남아프리카	
교사	1
HOD	2
교감	3
교장	4

한국	
교사 (2 급)	1
교사 (1 급)	2
교감	3
교장	4

섹션 B - 학교 정보

10. 귀하의 학교는 어떻게 분류 됩니까?

도시 학교	1
마을 학교 (SA)	2
농촌 학교	3
농장 학교	4

11. 학교의 유형을 알려주세요.

공립 학교	1
사립 학교	2
직업 학교 (SK)	3
기술 학교	4
시민 학교 (SK)	5
특수 학교	6

12. 학급 당 평균 학생수는 얼마입니까?

0 - 15	1
16 - 25	2
26 - 35	3
36 - 45	4
45+	5

13. 학교에 얼마나 많은 학생들이 재학 중입니까 ?

0 - 300	1
301 - 500	2
501 - 1 000	3
1 001+	4

섹션 C - 생산성

다음 문항들을 귀하의 개인적인 견해와 경험의 포함하여 고려하십시오. 어느 정도 동의 또는 동의하지 않는지 4 점 척도를 사용하여 답을 표시해 주십시오: 1 = 매우 동의하지 않음

2 = 동의하지 않음

3 = 동의

4 = 매우 동의

	매우 동의하지 않음	동의하지 않음	동의	매우 동의
14. 생산적인 교사는 절대로 지각하지 않는다.	1	2	3	4
15. 일과 (가정이나 학교에서) 후 업무는 교직의 일부이다.	1	2	3	4
16. 일찍 퇴근하는 교사는 생산적이지 않다.	1	2	3	4
17. 우리나라에서 교사가 되기는 쉽다.	1	2	3	4
18. 학교의 모든 교사들은 별도의 벽화 활동에 참여해야 한다.	1	2	3	4
19. 교사는 정기적으로 일과 후 학교 행사에 참석해야 한다.	1	2	3	4
20. 우리 학교의 일부 교사들은 아프지 않은데 병가를 쓴다.	1	2	3	4
21. 우리 학교의 모든 교사들은 수업 준비를 잘 한다.	1	2	3	4
22. 우리 학교의 교사는 학교 관련 문제에 대해 절대 불평하지 않는다.	1	2	3	4
23. 우리 학교의 모든 교사들은 수업 중 규율을 잘 잡는다.	1	2	3	4
24. 우리 나라의 교사들은 잘 훈련되어 있다.	1	2	3	4
25. 나는 대학에서 공부하는 동안 우수한 교직교육을 받았다	1	2	3	4
26. 나의 교원 자격은 가치가 있다.	1	2	3	4
27. 다른 분야를 전공한 사람도 교사가 될 수 있어야 한다.	1	2	3	4
28. 다른 분야를 전공한 교사들의 교육은 충분하다.	1	2	3	4
29. 승진하려는 교사는 대학원 과정을 완료하도록 요구되어야 한다.	1	2	3	4
30. 우리 학교의 교사들은 매우 야심 있으며 언젠가 교장이 되기를 바란다.	1	2	3	4

	매우 동의하지 않음	동의하지 않음	동의	매우 동의
31. 모든 교사들은 교수 능력을 향상시키기 위해 지속적으로 교육 과정을 이수해야 한다.	1	2	3	4
32. 가장 좋은 교사는 가장 높은 자격을 가진 사람이다.	1	2	3	4
33. 우수한 학업성적 결과를 가진 최상의 후보자들만 교직을 가질 수 있도록 허용되어야 한다.	1	2	3	4
34. 정식 교사가되기 전에, 임용 시험을 실시해야 한다.	1	2	3	4
35. 교사의 지식은 자신의 학습자와 같은 시험을 치도록 요구하여 정기적으로 테스트 해야 한다.	1	2	3	4
36. 숙련된 교사들은 교육에 헌신에 대한 보상을 받아야 한다.	1	2	3	4
37. 숙련된 교사들은 새로운 교사를 위한 멘토 교사로 채용 되어야 한다.	1	2	3	4
38. 경험이 풍부한 교사는 실적이 저조한 학교에 근무해야 한다.	1	2	3	4
39. 가장 좋은 교사는 가장 경험이 많은 교사이다.	1	2	3	4
40. 우리 나라 교사들은 보수를 잘 받는다.	1	2	3	4
41. 우리 나라 교사들은 금전적인 안정성이 있다.	1	2	3	4
42. 나는 내가 은퇴 할 때까지 교육을 계속 할 계획이다.	1	2	3	4
43. 나는 훌륭한 학교에서 근무한다.	1	2	3	4
44. 나는 나의 현재 학교에서 머물 계획이다.	1	2	3	4
45. 내가 승진할 경우 나는 다른 학교로 이동할 것이다.	1	2	3	4
46. 다른 사람이 떠나면서 우리 학교에 새로운 교사가 임명되는 일이 종종 있다.	1	2	3	4
47. 교사들이 정기적으로 새로운 학교로 이동(예를 들어 5 년마다) 하는 경우 교사의 생산성은 증가 할 것이다.	1	2	3	4
48. 한 학교에 너무 오래 근무하는 교사는 덜 생산적이 된다.	1	2	3	4
49. 교사는 우리 나라에서 매력적인 직업이다.	1	2	3	4
50. 우리 나라 교사는 지역 사회의 다른 구성원에 의해 존중받는다.	1	2	3	4
51. 나는 교사가 된 것을 자랑스럽게 생각한다.	1	2	3	4
52. 내 동료들은 학교에서 나의 헌신에 대해 귀중하게 생각한다.	1	2	3	4
53. 교육부의 지원은 교사를 더욱 생산적이게 한다.	1	2	3	4
54. 연수, 워크숍 또는 교육청 제공의 회의는 교사들을 더욱 생산적이게 한다.	1	2	3	4

	매우 동의하지 않음	동의하지 않음	의 견	동의 매우
55. 교육청 주관 회의는 일반적으로 유익하다.	1	2	3	4
56. 교육청 주관 회의는 일반적으로 잘 제시된다.	1	2	3	4
57. 교육청은 교사의 생산성을 극대화하기 위해 교사들과 긴밀하게 일한다.	1	2	3	4
58. 교육청은 특출하게 수행하는 교사를 인지하고 보상한다.	1	2	3	4
59. 교육청에 의해 요구되는 교사의 행정적인 업무는 교사의 생산성을 강화한다.	1	2	3	4
60. 교육청은 교사의 생산성을 성공적으로 관리하고 평가한다.	1	2	3	4
61. 교사 생산성은 교장에 의해 측정 될 수 있다.	1	2	3	4
62. 교사들은 그들이 가르치는 학습자의 수행에 따라 순위가 매겨져야 한다.	1	2	3	4
63. 급여와 관련된 수행형태가 있다면 교사들은 더욱 생산적이게 될 것이다.	1	2	3	4
64. 가르치는 학생들이 국가시험을 잘 치는 교사들에게 인센티브를 주어야 한다.	1	2	3	4
65. 국가시험에서 학생들의 성적은 교사의 효과성에 대한 직접적인 지표이다.	1	2	3	4
66. 다른 학교의 교사들에게 배우는 것은 교사들을 더욱 생산적이게 할 수 있다.	1	2	3	4
67. 교사는 정기적으로 다른 교사들과 아이디어를 공유해야 한다.	1	2	3	4
68. 사회적 환경에서 동료들과의 상호 작용은 교사의 생산성을 향상시킨다.	1	2	3	4
69. 우리 학교의 교사들은 서로에게 동기를 부여한다.	1	2	3	4
70. 우리 학교의 교사들은 내가 처음 교직을 시작했을 때 나를 지원하기 위해 노력했다.	1	2	3	4
71. 우리 학교에는 항상 긍정적인 분위기가 있다.	1	2	3	4